

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128780

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUIMOLAR MIXT. OF (SHOWN ON MICROFICHE). PYROLYSIS OF THESE, COMPLETED AT 130-50DEGREES FOR CHLORO AND DICHLOROMETHYL MEMBERS AND 210-30DEGREES FOR THE REMAINDER, GAVE DICHLORIDES OF HALOMETHYLPHOSPHONIC ACIDS AND NITRILES. TREATED WITH 1 MOLE DRY (SHOWN ON MICROFICHE). FACILITY: INST. ORG. KHIM., USSR.

UNCLASSIFIED

1/3 023 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ALKALINE AMPHIBOLES OF THE ULKAN PLUTON AND RARE ELEMENT CONTENTS
(LITHIUM, RUBIDIUM, CESIUM, BERYLLIUM, ZIRCONIUM, TANTALUM, AND NIOBIUM)
AUTHOR--GAMALEYA, YU.N.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. SSSR, SER. GEOL. 1970, (2), 39-49
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--LITHIUM, RUBIDIUM, CESIUM, BERYLLIUM, ZIRCONIUM, TANTALUM,
NIOBIUM, MINERAL, RARE EARTH METAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1498 STEP NO--UR/0011/70/000/002/0039/0049
CIRC ACCESSION NO--AP0120283

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120283

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA ON THE CONTENTS OF RARE ALKALI METALS IN RIEBECKITES OF THE ULKAN MASSIF ARE GIVEN, TOGETHER WITH DATA ON NIGERIAN AND LOVOZERO ARFVEDSONITES. THE ULKAN RIEBECKITES HAVE VERY VARIABLE LI CONTENTS (1-3870 PPM) WITH LOWER DISPERSION IN RIEBECKITES FROM GRANITES THAN IN RIEBECKITES FROM PEGMATITES. THE NIGERIAN ARFVEDSONITES ARE MUCH RICHER IN LI (AV. 4130 PPM) THAN ULKAN RIEBECKITES. THE INVERSE CORRELATION BETWEEN LI AND FE PRIME2POSITIVE WAS DETECTED FOR ULKAN RIEBECKITES AND NIGERIAN ARFVEDSONITES. THEY INDICATED THE ISOMORPHIC REPLACEMENT OF FE PRIME2POSITIVE YIELDS LI. RB ACCUMULATED IN THE LATEST PEGMATITE GENERATIONS OF ULKAN RIEBECKITE. CS WAS DETECTED ONLY IN ALK. AMPHIBOLES FROM GRANITES. THE AV. BE CONTENT IN RIEBECKITES FROM ULKAN GRANITES WAS ALMOST TWICE AS HIGH AS THAT IN LOVOZERO ARFVEDSONITES. THE ZR CONTENT IN RIEBECKITES FROM GRANITES WAS VERY VARIABLE (130-2060 PPM). IT WAS HIGHER THAN THE MAX. CONTENT (1300 PPM) REPORTED FOR RIEBECKITES, BUT LOWER THAN THAT MAX. FOR ARFVEDSONITE (LESS THAN OR EQUAL TO 7300 PPM). THE NIGERIAN ARFVEDSONITES WERE MUCH RICHER IN ZR (AV. 2380 PPM) THAN ULKAN RIEBECKITES. THE RIEBECKITES CONTAINED LESS THAN OR EQUAL TO 12 PPM TA AT MUCH HIGHER CONTENT OF NG (GREATER THAN 100 PPM). THEIR NB-TA RATIO IS 40-75. RIEBECKITES FROM PEGMATITE CONTAINED NB 3500 PPM. THE LOVOZERO ARFVEDSONITES ARE RICHER THAN ANALYZED RIEBECKITES IN NB AND TA. DIFFERENCES IN LI AND RB CONTENTS ARE INDISTINCT. CERTAIN ENRICHMENT IN LI, RB, AND ZR WAS OBSD. FOR AMPHIBOLES FORMED UNDER CONDITIONS OF HIGHER ALKALI METAL CONTENTS.

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PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120283

ABSTRACT/EXTRACT--THE RIEBECKITES OF LATE GENERATIONS IN THE ULKAN PLUTON
ARE RICHER IN LI, RB, AND BE THAN EARLY GENERATIONS. FACILITY:
VSES. AEROGEOLOG. TREST, MOSCOW, USSR.

UNCLASSIFIED

USSR

BRODER, D. L., GAMALIY, A. F., ZEMTSEV, B. V., NESTEROV, B. V., and KHAM'YANOV, L. P. (Institute of Physics and Power Engineering)

"Gamma Radiation Upon Capture of Thermal Neutrons by Isotopes of Cr"

Moscow, Yadernaya Fizika, Vol 13, No 2, 1971, pp 233-239

Abstract: This work is devoted to the study of the spectra of gamma radiation arising upon capture of thermal neutrons by Cr isotopes, by means of a Ge-Li gamma spectrometer. The isotopes of chromium studied are Cr⁵⁰, Cr⁵², and Cr⁵³. The yield of gamma lines per 100 captures of neutrons in each isotope are determined. Diagrams of the energy levels of Cr⁵¹, Cr⁵³, and Cr⁵⁴ nuclei are presented. The results are compared with the data of other authors. In general the data agree well with the data of recent works concerning the energy of individual gamma lines, but not as well concerning their yield. A number of new gamma lines are observed, particularly for Cr⁵⁰ and Cr⁵².

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172 011 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--REDUCTIVE PRECIPITATION ELECTRIC SMELTING OF ANTIMONY CONCENTRATES
WITH A ROASTED MATTE -U-
AUTHOR--(03)-ROZLOVSKIY, A.A., SOLOMATOV, N.K., GAMALIY, L.I. 6
COUNTRY OF INFO--USSR
SOURCE--TSVET. METAL. 1970, 43(1), 22-6
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--ANTIMONY, COKE, ROASTING FURNACE, ELECTRIC FURNACE, IRON,
METALLURGICAL PROCESS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0750 STEP NO--UR/0136/70/043/001/0022/0026
CIRC ACCESSION NO--AP0107292
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0107292

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FLOW CHART SHOWING THE CHAIN OF APP. USED FOR REDUCTIVE PPTN. ELECT. SMELTING OF SB CONCNS. WITH A ROASTED MATTE IS DESCRIBED IN DETAIL. THE OPTIMUM CONDITIONS AS APPLICABLE TO THE DESIGN OF THE ENTIRE APP. ARE PRESENTED. THE OPTIMUM COMPN. OF THE BATCH WAS 18 PARTS FE CHIPS, 24 PARTS SODA ASH, 15 PARTS LIMESTONE, AND 4 PARTS COKE DUST, ALL PER 100 PARTS CONC. THE MATERIAL BALANCE AND THE BALANCE OF THE METALS ARE IMPORTANT AND ARE DISCUSSED. REDUCTIVE PPTN. ELEC. SMELTING OF SB CONCNS. WITH A ROASTED MATTED HAS MANY ADVANTAGES AS COMPARED WITH THE METHOD OF PPTN. SMELTING OF SB CONCNS. AMONG THE SHORTCOMINGS OF THE REDUCTIVE PPTN. METHOD ARE LOWER M.P. OF THE CONC. AND INCREASED CONSUMPTION OF ELEC. ENERGY, WHICH CAN BE ELIMINATED BY ORGANIZED GRANULATION AND CONTINUOUS LOADING OF THE BATCH.

UNCLASSIFIED

L/2 021 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--DIPOLE GIANT RESONANCES OF NONMAGIC NUCLEI -U-
AUTHOR--(03)-BAZHENOV, A.A., GAMALYA, I.A., CHERDANTSEV, P.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(1), 7-13
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--DIPOLE INTERACTION, NUCLEAR RESONANCE, WAVE FUNCTION,
PHOTONUCLEAR REACTION, TITANIUM ISOTOPE, SCANDIUM ISOTOPE, CALCIUM
ISOTOPE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1980/1433 STEP NO--UR/0139/70/013/001/0007/0013
CIRC ACCESSION NO--AT0049555
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0049555

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD OF CALCN. OF DIPOLE GIANT RESONANCES OF NONMAGIC NUCLEI, CONNECTED WITH THE UTILIZATION OF DEFORMED SINGLE PARTICLE ORBITALS FOR THE CONSTRUCTION OF THE NUCLEI WAVE FUNCTIONS, IS PRESENTED. THE RESIDUAL INTERACTION POTENTIAL, CONSIDERED IN THE CALCN. OF THE DIPOLE STATES, CREATED BY THE PHOTOABSORPTION OF NONMAGIC NUCLEI, PRIME42 CA, PRIME42 SC, PRIME44 TI, PRIME46 TI, INCLUDED THE DEPENDENCE OF THE QUANTUM NOS. K, THAT ARE THE INTEGRALS OF THE MOTION IN THE PRESENTED SCHEME. THE CALCNS. OF THE OSCILLATOR FORCES AND THEIR DEPENDENCE UPON THE GIANT RESONANCE ENERGY WERE MADE AND THEIR RESULTS ARE GIVEN. FACILITY: TOMSK. POLITEKH. INST. IM. KIROVA, TOMSK, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ANODIC BEHAVIOR OF STAINLESS STEEL KH18NIOT -U-
AUTHOR--(05)-MALTSEV, V.F., SHAVEL, M.M., MARUNENKO, L.V., GAMALI, T.A.,
SMIRNOVA, N.A.
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB. 1970, 36(2), 140-3
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--STAINLESS STEEL, STAINLESS STEEL COMPOSITION, MANGANESE STEEL,
SILICON STEEL, CHROMIUM STEEL, NICKEL STEEL, TITANIUM STEEL,
ELECTROLYTE, CHLORIDE, THIOUREA, SOLUBILITY/(U)KH18NIOT STAINLESS STEEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0601 STEP NO--UR/0032/70/036/002/0140/0143
CIRC ACCESSION NO--AP0107198
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CFRC ACCESSION NO--AP0107198

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POTENTIAL TIME PLOTS ARE GIVEN FOR STAINLESS STEEL KH18NI0T CONTG. C 0.082, MN 1.17, SI 0.58, CR 17.5, NI 10.8, AND TI 0.33PERCENT DURING ITS ANODIC DISSOLN. IN DIFFERENCE ELECTROLYTES. CONST. PASSIVATION AND IRREGULARITIES IN LOCAL DISSOLN. OF THE STEEL WERE OBSERVED IN 0.2N CCL SUB3 CO SUB2 H, 0.2N ACOH, 0.2N GLYCINE, OR 0.005N H SUB2 SO SUB4. SMOOTH ANODIC DISSOLN., GOOD ISOLATION OF THE CARBIDES, AND ELIMINATION OF PASSIVATION WERE ACHIEVED IN THE MIXED ELECTROLYTE CONTG. M KCL, 0.24M HCL, 10 G THIOUREA-L., AND 0.2N CARBOXYLIC ACID. ADDNS. OF CHLORIDES AND OF THIOUREA ALSO IMPROVE THE ANODIC DISSOLN. IN DIL. H SUB2 SO SUB4 OR H SUB3 PO SUB4.

UNCLASSIFIED

USSR

UDC 621.315.592

MAMONTOV, A. P., OKUNEV, V. D., GAMAN, V. I., ZAKHAROV, B. G., Siberian Physico-technical Institute imeni V. D. Kuznetsov, Tomsk

"Distribution of Radiation Defects in Gallium Arsenide in the Presence of Deuteron Irradiation"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 865-868

Abstract: On the basis of an electron probe study of the distribution of the luminescence intensity in gallium arsenide when irradiated with deuterons as a function of the deuteron energy and the integral deuteron flux, a quantitative estimate was made of the defect distribution with respect to the path lengths of the deuterons. The dependence of the path length on the deuteron energy was calculated, and the results are compared with the experimental values of the path lengths obtained from the data on the spatial variation of the cathode luminescence. The coefficient of radiation variation of the lifetime K in n-type gallium arsenide increases with an increase in the initial concentration of the carriers, and at the end of the deuteron path it varies from $1.35 \cdot 10^{-2} (\text{sec} \cdot \text{deuteron}/\text{cm}^2)^{-1}$ for a specimen with a carrier concentration of $n = 7 \cdot 10^{15} \text{ cm}^{-3}$ to $8.4 \cdot 10^{-2} (\text{sec} \cdot \text{deuteron}/\text{cm}^2)^{-1}$ for a specimen with $n = 4.5 \times 10^{17} \text{ cm}^{-3}$. The defect distribution with respect to the deuteron path length

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UDC 621.315.592

MAMONTOV, A. P., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 865-868

is characterized by the spatial variation of the coefficient K . Good agreement of the experimental data with respect to the K distribution with the calculated data for the distribution of the rate of introduction of defects n_d is observed.

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USSR

UDC 621.476.223.029.64.001.24

BARANOV, L. I., GAMANYUK, V. B., KLIMOV, B. N., USANOV, D. A.

"On Calculation of Microwave Semiconductor Waveguide Resonators"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 8, Aug 71, pp 1437-1441

Abstract: One type of waveguide modulator is a section of rectangular waveguide which contains a semiconductor diode in the form of a thin plate located in the center of the waveguide parallel to the narrow wall. Modulation is achieved by varying the conductivity of the base region of the diode. Theoretical and experimental data are compared and discrepancies are explained. It is concluded that the relationships derived in the paper can be used for the design of modulators based on laminar structures. The authors thank G. Ya. Nikushkin and S. N. Zorya for considerable assistance rendered during the calculations, as well as N. N. Khramov for participating in the experimental research.

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1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--IMPROVEMENT IN THE SATURATION OF NEGATIVE SINTERED METAL ELECTRODES
FOR NICKEL CADMIUM STORAGE BATTERIES -U-
AUTHOR--(02)-GAMASKIN, YE.I., POZIN, YU.M. **G**

CCOUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 46(3), 681-3

DATE PUBLISHED-----70

SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE)

TOPIC TAGS--NICKEL CADMIUM BATTERY, STORAGE BATTERY, BATTERY ELECTRODE,
CATHODE POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0906

STEP NO--UR/0080/70/043/003/0681/0683

CIRC ACCESSION NO--AP0113741

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0113741

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IMPREGNATION OF POROUS NI PLATES, THE ELECTRODES FOR ALK. STORAGE BATTERIES, WITH MIXTS. OF SOLNS. OF CDCL SUB2 AND CD(NO SUB3) SUB2 WAS STUDIED IN THE CASE OF CATHODE POLARIZATION. THE POLARIZATION OF THE PLATES WAS DUE TO THEIR CONTACT WITH THE CD ANODES. THIS METHOD OF IMPREGNATION SHORTENS THE TIME NECESSARY FOR PREPG. THE ELECTRODES BY THE FACTOR OF 3-4 AND ELIMINATES THE CORROSION IN CD SOLNS. FACILITY: NAUCH.-ISSLED. AKKUMULYATOR. INST., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 531.717.55

GAMAYUNOV, G.K., and LITENKO, L. T.

"Measuring Needle for Ferrite Sorting Automata"

USSR Authors' Certificate No 301517, Cl. G 01 b 7/24, filed 3 Dec 69, published 8 Jun 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 72, Abstract No 1A482P)

Translation: The proposed measuring needle for ferrite sorting automata contains current-conducting elements, between which there is an insulation spacer. To increase operating reliability, the spacer takes the form of a biconcave element of vitroc ceramic enamel. 1 illustration.

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USSR

UDC 621.317.752

DUBIN, V. F., GAMAYUNOV, G. K., POPOV, L. F.

"Contact Device of an Automatic Machine for Sorting Integrated Circuits"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obratzysy, tovarnyye znaki, No 8, Mar 71, Author's Certificate No 296290, division H, filed 20 Oct 69, published 12 Feb 71, pp 198-199

Translation: This Author's Certificate introduces a contact device of an automatic machine for sorting integrated circuits. The device contains a two-sided printed-circuit board with a central opening and contacts equal in number to the wires, a clip for holding the integrated circuit, and a drive mechanism with cams. As a distinguishing feature of the patent, measurement accuracy and contact reliability are improved and the capacitance between contacts is reduced by radial location of contacts in the form of releasable spring clamps on both sides of the printed-circuit board around the central opening. Contact is made between the leads of the circuit to be tested and the contacts on the circuit board by means of clips made in the form of spring-loaded hooks radially located with respect to the opening in the circuit board.

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1/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--STUDY OF THE PROPERTIES OF MOISTURE SORBED ON PEAT BY CALORIMETRY
AND NMR SPECTROSCOPY -U-
AUTHOR--(04)-VOLAROVICH, M.P., GAMAYUNOV, N.I., YEDOKIMOV, B.V., KHORKOVA,
M.D.
COUNTRY OF INFO--USSR
SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 182-188
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--MOISTURE MEASUREMENT, HYDROGEN BONDING, SOIL WATER,
CALORIMETRY, NMR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0394 STEP NO--UR/0069/70/032/002/0182/0188
CIRC ACCESSION NO--AP0113312
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113312

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROPERTIES OF SORBED MOISTURE ON PEAT HAVE BEEN STUDIED BY CALORIMETRY AND NMR SPECTROSCOPY. THE STRUCTURE OF SORBED MOISTURE IS CHARACTERIZED BY DISORDERED WATER MOLECULES BOUND BY HYDROGEN BONDS. THE STRUCTURE OF OSMOTIC MOISTURE ALSO DIFFERS FROM THAT OF PURE WATER. THE AMOUNT OF CATIONS SORBED BY PEAT AFFECTS THE EVAPORATION HEAT AND MOBILITY OF WATER MOLECULES.

UNCLASSIFIED

USSR

UDC 621.385.623.4

ANDRUSEKEVICH, V.S., GAMAYUNOV, YU.G.

"To A Theory Of Klystrons With Distributed Interaction"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 12, pp 33-44 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4A163)

Translation: A method is proposed for computation of the principal nonlinear characteristics of klystrons with distributed interaction. The computed characteristics are presented for a one-resonator klystron (monotron) with distributed interaction. An expression is obtained for the figure of merit of a distributed resonator. 7 ref. Summary.

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USSR

UDC 546.19 + 541.124.7

TSENTOVSKIY, V. M., GAMAYUROVA, V. S., ZAGIDULLINA, D. Sh., and
CHERNOKAL'SKIY, B. D., Kazan' Chemical Technological Institute Imeni
S. M. Kirov

"Ionization Constants of Arylarsonic Acids in Nonaqueous Media"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2702-
2705

Abstract: The pK of eight arylarsonic acids were determined in nonaqueous media -- dimethylformamide [DMFA] and dimethylsulfoxide [DMSO] by means of potentiometric titration. In both the DMFA and DMSO arylarsonic acids titrate as monobasic acids with the exception of nitrohydroxyphenylarsonic acid which acts as a dibasic acid in DMSO. Depending on the substituent in the phenyl ring, the acid strength diminishes in the following order: $\text{NO}_2 + \text{OH} > \text{NO}_2 > \text{H} > \text{CH}_3 > \text{CH}_3\text{O} > \text{NH}_2$. Ortho substituted nitro- and amino-phenylarsonic acids are weaker than their para substituted analogs. Analyzing the pK values in different media shows that the arylarsonic acids increase in strength going from DMFA to DMSO to water. In comparison to water, DMFA and DMSO exert a differentiating action on arylarsonic acids.
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USSR

UDC 547.26.119 + 543.422

GAMAYUROVA, V. S.; KUZ'MIN, V. K., CHERNOKAL'SKIY, B. D., and SHAGIDULLIN, R. R., Kazan' Chemical Technological Institute Imeni S. M. Kirov

"Spirocyclic Esters of Arsonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, pp 1937-1939

Abstract: New esters of arsonic acids and dihydric aliphatic glycols have been synthesized. The reaction consisted of refluxing a mixture of the appropriate substituted arsonic acid, ethylene glycol and benzene in a system equipped with a Dean-Stark trap. The cyclic structure of these esters has been confirmed by IR spectral data.

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USSR

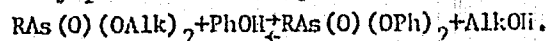
UDC 547.26.119

GAMAYUROVA, V. S., KRALICHKINA, M. G., CHERNOKAL'SKIY, B. D., Kazan' Chemical Technological Institute imeni S. M. Kirov

"Synthesis of Aromatic Esters of Arsonic Acids"

Ivanovo, Izvestiya vysshikh uchebnykh zavedeniy, Khimiya i khimicheskaya tekhnologiya, Vol XV, No 7, 1972, pp 1023-1026

Abstract: A study was made of the possibility of synthesizing aromatic esters of arsonic acids. Direct esterification of these acids by phenols did not lead to the expected products, but transesterification of the dialkyl esters of arylarsonic acids by phenols in the presence of catalysts was successful:



The alkyl esters of the arsonic acids were obtained by the Kolditz-Hass method [*Z. anorgan. und allgem. Chem.*, No 307, 304, 1961]. Transesterification of the dialkyl esters of the arylarsonic acids was performed in xylenes, which make the reaction possible at a comparatively high temperature and form azeotropes with the aliphatic alcohols. Sodium phenoxide and also perchloric acid, sulfuric acid and glacial acetic acid were used as catalysts. Glacial acetic acid was the best catalyst. The synthesized aromatic esters and some of their properties are tabulated the lowest representatives of the series of
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USSR

GAMAYUROVA, V. S., et al., Izvestiya vysshikh uchebnykh zavedeniy, Khimiya i khimicheskaya tekhnologiya, Vol XV, No 7, 1972, pp 1023-1026

compounds are high-boiling, viscous and very hygroscopic liquids. The crystalline esters were isolated with almost quantitative yield and are highly hygroscopic. The infrared spectrum taken for the diphenyl ester of *n*-tolylarsonic acid confirms its proposed structure.

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Magnesium

2

USSR

VASIL'YEV, G. S., YEFIMENKO, G. G., KOVALEV, D. A., SULEIMENKO, YE. I., and
GAMAZOVA, L. E., Dnepropetrovsk Metallurgical Institute

"Effect of Magnesium on the Process of Sintering Briquettes Made of an Iron-ore Agglomerate Charge in an Oxidizing Atmosphere"

Novokuznetsk, IVUZ-Chernaya Metallurgiya, No 6, 1971, pp 23-30

Abstract: A study was made of the effect of magnesium additives on the process of sintering and on the quality and phase composition of a briquetted agglomeration charge for its solid-phase sintering without fuel in an oxidizing atmosphere.

The introduction of MgO into a charge prevents oxidation of magnetite to hematite due to its introduction into the magnetite lattice and the substitution of FeO for MgO with the formation of solid solutions of MgO in Fe₃O₄. Dissolving of magnetite in magnesium ferrite increases the system's melting point.

Strengthening of samples is manifested by producing a denser structure due to the lack of a change in volume as a result of oxidation of magnetite to hematite as well as the formation of minerals, containing MgO, which possess a coefficient of thermal expansion close to the coefficient of its related minerals. Two figures, 5 tables, 5 bibliographical references.

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1/3 021 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--SELF DIFFUSION OF MERCURY, SULFUR, AND SELENIUM IN HGSE SUBI-X 3
SUBX AND HGTE SUBI-X 3 SUBX SOLID SOLUTIONS -U-
AUTHOR:(04)-KHARAKHORIN, F.F., GAMBAROVA, D.A., ZAYTOV, F.A., LUTSIV, R.V.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER, 1970, 6(3), 564-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MERCURY COMPOUND, SELENIUM COMPOUND, SULFUR COMPOUND, SOLID
SOLUTION, SINGLE CRYSTAL, ACTIVATION ENERGY, RADIODACTIVE ISOTOPE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0865 STEP NO--UF/0363/70/006/003/0564/0565
CIRC ACCESSION NO--AP0118041
UNCLASSIFIED

2/3 021 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0118041
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEMP. DEPENDENCES OF SELF
DIFFUSION COEFFS. OF S, SE, AND HG IN SINGLE CRYSTALS OF HGSE SUB1-X S
SUBX AND HGTE SUB1-X S SUBX (X EQUALS 0.1-0.4) OF THE ELECTRONIC TYPE
WITH A CURRENT CARRIER CONC. OF SIMILAR TO 5 TIMES 10 PRIME18 CM PRIME
NEGATIVE3 WERE STUDIED. THE STUDY OF THE SELF DIFFUSION WAS DONE WITH
THE AID OF RADIOACTIVE ISOTOPES PRIME203 HG, PRIME75 SE, AND PRIME35 S
BY THE METHOD OF REMOVING SUCCESS LAYERS. DIFFUSION ANNEALING OF THE
SAMPLES WAS DONE IN EVACUATED QUARTZ AMPULS AT 200, 300, 350, AND
400DEGREES FOR 30-80HR. THE DIFFUSION PROCEEDED FROM THE GAS PHASE.
WITH INCREASING S CONC. IN THE HGSE SUB1-X S SUBX SYSTEM FROM 1 TO
36PERCENT, THE SELF DIFFUSION COEFF. OF S AT 300DEGREES DECREASES FROM 5
TIMES 10 PRIME NEGATIVE13 TO 1.1 TIMES 10 PRIME NEGATIVE13 CM
PRIME2-SEC. THE DECREASED IN THE SELF DIFFUSION COEFF. WITH ITS
INCREASED CONC. IN THE SOLID SOLNS. INDICATES PREFERENTIAL DIFFUSION OF
S ALONG THE HG VACANCIES. IN THE HGTE SUB1 NEGATIVEX S SUBX SYSTEM THE
SELF DIFFUSION OF S PROCEEDS PRIMARILY ALONG THE S AND THE TE VACANCIES.
UPON ANNEALING OF THE LATTER SOLID SOLNS. IN S VAPORS THE CARRIER
CONCN. DECREASES FROM 10 PRIME18 TO 2 TIMES 10 PRIME17 CM PRIME
NEGATIVE3. WITH INCREASING CONC. OF S IN HGSE SUB1 NEGATIVEX S SUBX
FROM 10 TO 30PERCENT, THE SELF DIFFUSION COEFF. OF S AND HG INCREASES
AND THE MAX. VALUES ARE AT X EQUALS 0.2. THE ACTIVATION ENERGY OF THE
DIFFUSION OF HG IS 0.3 EV, AND THAT OF SE IS 0.67 EV. AFTER DIFFUSION
ANNEALING IN HG VAPOR THE CARRIER CONC. INCREASES FROM 1 TIMES 10
PRIME18 TO 6 TIMES 10 PRIME18 CM PRIME NEGATIVE3, WHEREAS THE MOBILITY
DECREASES BY A FACTOR OF 2.

UNCLASSIFIED

3/3 021 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0118041
ABSTRACT/EXTRACT--WITH INCREASING ANNEALING TEMP. SE VAPORS (10 PRIME
NEGATIVE4 TORR), THE CURRENT CARRIER CONC. DECREASES FROM 1 TIMES 10
PRIME18 TO 2 TIMES 10 PRIME17 CM PRIME NEGATIVE3.

UNCLASSIFIED

USSR

UDC 531.787

VARDANYAN, V. R., STEPANYAN, A. A., MAMYAN, S. Z., OGANESYAN, M. G., and
GAMBARYAN, A. A.

"New Combination Sensor for Registration of the Pressure Shock Waves in Air"

Nauch. Tr. Yerevan. Politekhn. In-ta [Scientific Works of the Yerevan Poly-
technic Institute], 1972, Vol 36, No 4, p 1, pp 152-158 (from Referativnyy
Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single
Issue. Abstract No 10.32.714)

Translation: A new combination altitude sensor is described. It has a
movable electrode (membrane) and an immovable electrode located parallel to
it. The capacitance originates between the upper movable membrane, on which
acts the shock wave, and the plane immovable electrode, the gap between which
comprises fractions of a millimeter. Five illustrations, five bibliographical
references.

1/1

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172 016 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--HUECKEL, CALCULATION FOR 10,5 CORONENE, C SUB20 H SUB10 -U-
AUTHOR--(03)-BOCHVAR, D.A., GALPERN, YE.G., GAMBARYAN, N.P.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 435-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MOLECULAR ORBITAL, ELECTRON DENSITY, UNSATURATED HYDROCARBON,
ELECTRON DISTRIBUTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0637 STEP NO--UR/0062/70/000/002/0435/0437
CIRC ACCESSION NO--AP0119549
UNCLASSIFIED

2/2 016
CIRC ACCESSION NO--AP0119549

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM THE CALCN. OF ELECTRON D. DISTRIBUTION IN CORONENE USING THE HUECKEL VARIATION OF LCAO MO CALCN. IT WAS SHOWN THAT 10,5,CORONENE (C SUB30 H SUB10) HAS A CLOSED PI ELECTRON CLOUD. ALL ATOMS OF THE INNER RING CARRY AN EXCESS ELECTRONIC CHARGE, THOSE ON THE OUTER RING ALTERNATE IN VALUES OF ELECTRON D. THE APICAL ATOMS APPEAR TO HAVE RATHER HIGH VALUES OF POS. CHARGES AS A RESULT OF ELECTRON FLOW AWAY FROM THESE POSITIONS. A DISTRIBUTION MAP IS SHOWN. FACILITY: INST. ELEMENTOORG, SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

USSR.

UDC 613.6:612.017.2-053

GAMBASHIDZE, G. M., Institute of Industrial Hygiene and Occupational Diseases, Academy of Sciences USSR, Moscow

"Adaptation of People of Different Ages to Monotonous Work"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1971, pp 9-12

Abstract: Continuous recording of the heart rates of two groups of workers on an assembly line in a shoe factory (one group - 20 to 22 years of age on the job for 1 to 2 years; another group - 35 to 40 years old with 7 years' experience or more) revealed a steady slowing of the cardiac rhythm in most of the individuals by the end of the first half of the work day, almost complete return to normal after the meal break (due to physical activity), and further slowing by the end of the workday. This pattern was observed in all 3 shifts - morning, evening, and night. The effect of the monotonous work was more evident in the younger persons who generally exhibited higher heart rates, especially during the day shift. Study of such physiological functions as body temperature, pulse rate, latent period of visuomotor reactions, and so forth showed a greater leveling out of the diurnal curves and decreased amplitude of diurnal fluctuations than in those engaged in physical work.

1/2

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-USSR-

GAMBASHIDZE, G. M., Gigiyena Truda i Professional'nyye Zabolevaniya, No 7,
1971, pp 9-12

These changes plus the slower heart rates are interpreted as evidence of
increasing adaptability to monotonous work with age.

2/2

USSR

UDC 518.9

GAMBROV, L. A., SUMTSOV, A. A., DAGYAN, A. V.

"The Problem of Distribution of Resources as a Game with Matrix Strategies"

Tekhn. Kibernetika (Khar'kov. Otd.). Vyp. 1 [Engineering Cybernetics (Kar'kov Division), No. 1 -- Collection of Works] Kiev, 1970, pp 10-14 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V528 by I. Fokin).

Translation: The problem of the distribution of several types of means of attack and defense between objects of fixed values is studied as a game with matrix strategies. The case is studied in which the strategies of the attacker include the possibility of using special attack devices for suppression of defense.

1/1

USSR

UDC: 621.316.174:625.21

BESSONOV, K. S., DUDNICHENKO, A. I., ~~GAMBURG, B. M.~~, KITUSHIN, V. G., MYSLIN, D. A., Siberian Department of the All-Union State Design and Planning and Scientific Research Institute "Energoset'proyekt"

"A Portable Substation"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331464, Division H, filed 19 Jan 68, published 7 Feb 72, p 174

Translation: This Author's Certificate introduces: 1. A 220/110/6 kV portable substation containing an open 220 kV distribution device, an autotransformer connected by the 220 kV line to the supply network transformer, an open 110 kV distribution device and a self-contained 6 kV distribution device. As a distinguishing feature of the patent, the device is made more compact and portable by making the autotransformer of the incomplete-phase type and connecting it to the supply network by two phase conductors of the 220 kV line and connecting the neutral of the supply network transformer to the ungrounded neutral of the autotransformer, the neutrals being connected by an ungrounded cable of the 200 kV line. 2. A modification of this substation in which voltage asymmetry at consumer points is eliminated by connecting a booster transformer in the circuit break.

1/1

USSR

UDC: 621.372.822/823

YEKIMENKO, T. M., GAMBURG, Yu. D.

"Structure and Heat Losses in Electrolytically Deposited Copper Current-Carrying Layers of Waveguides"

Sb Nauchn. tr. TsNII svyazi (Collected Scientific Works of the Central Scientific Research Institute of Communications), 1970, vyp. 1, pp 37-43 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11B94)

Translation: The paper presents the results of a study of the effect which conditions of electrolysis have on the microgeometry and microstructure of copper deposits, and on heat losses in waveguides and waveguide devices with an electrolytically deposited current-carrying copper layer. It is found that increased heat losses are due both to the roughness of the layer (sulfate electrolyte), and to its reduced electrical conductivity, and in thin layers to porosity and defects in the crystal lattice as well. Data are given from an investigation into the quality of adhesion of the current-carrying layer to the base. Optimum conditions are found for electrolytic deposition of current-carrying layers. Three illustrations, bibliography of three titles. Resumé.

1/1

- 135 -

USSR

UDC 577.3

GAMBURTSEVA, A. G., Institute of Higher Nervous Activity and Neurophysiology,
Academy of Sciences USSR, Moscow

"Ultrastructural Changes in the Brown Lipid Tissue of Mice Upon a Single Cooling and on Cold Adaptation"

Moscow, Biofizika, Vol 16, No 5, Sep/Oct 71, p 959

Abstract: Fine structural changes were studied that took place in cells of the brown lipid tissue of mice upon cooling of the animals to various degrees. Physiological cooling of the animals to a slight degree resulted in structural changes in the brown lipid tissue that made possible more effective functioning of the latter. More thorough cooling interfered with the normal functioning of this tissue, bringing about overloading of the mitochondria that resulted in destructive changes in these units. Upon cold adaptation one could observe structural rebuilding of brown lipid tissue that had become adapted to more effective functioning.

1/1

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1/3 017 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--MAGNITUDE METHOD FOR IDENTIFYING UNDERGROUND NUCLEAR BURSTS,
MAGNITUDE METHOD FOR IDENTIFYING UNDERGROUND NUCLEAR EXPLOSIONS -U-
AUTHOR--(04)--PASECHNIK, I.P., DASHKOV, G.G., POLIKARPUVA, L.A.,
GAMBIRISEVA, N.G.
COUNTRY OF INFO--USSR

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SOURCE--INSTITUTE OF PHYSICS OF THE EARTH: MOSCOW, IZVESTIYA AKADEMII NAUK
SSSR, FIZIKA ZEMLI, NO. 1, 1970, PP. 28-36
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, ORDNANCE

TOPIC TAGS--NUCLEAR WEAPON TEST, UNDERGROUND EXPLOSION, SEISMIC WAVE
PROPAGATION, SEISMIC PULSE, EARTHQUAKE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FKAME--1977/0496

STEP NO--UR/0387/70/000/001/0028/0036

CIRC ACCESSION NO--AP0044043

UNCLASSIFIED

2/3 017

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0044043

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT PRESENT SEISMOLOGISTS KNOW THAT FOR EXPLOSIONS AND EARTHQUAKES THERE IS A DIFFERENT NATURE OF THE EXPERIMENTAL RELATIONSHIPS BETWEEN MAGNITUDES M_{SUBS} , DETERMINED FROM RAYLEIGH SURFACE WAVES, AND THE MAGNITUDES M_{SUBB} DETERMINED FROM BODY WAVES, PRIMARILY LONGITUDINAL P WAVES. FOR SUB SURFACE EXPLOSIONS THE MEAN M_{SUBS} VALUES ARE 1.5-0.5 UNITS LESS THAN FOR EARTHQUAKES WITH EQUAL MAGNITUDES M_{SUBB} . THIS MAGNITUDE CRITERION CAN BE SUCCESSFULLY USED IN DIFFERENTIATING THE RECORDS OF UNDERGROUND EXPLOSIONS AMONG THE NUMEROUS RECORDS OF EARTHQUAKES REGISTERED AT TELESEISMIC DISTANCES IN THE RANGE FROM 30 TO 90 DEGREES (FROM 3,500 TO 10,000 KM). LEADING SEISMOLOGISTS IN THE WESTERN COUNTRIES FEEL THAT IT IS POSSIBLE TO CHECK ON THE OCCURRENCE OF UNDERGROUND NUCLEAR EXPLOSIONS WITHOUT FIELD INSPECTIONS. HOWEVER, THERE IS STILL NO AGREEMENT AMONG SEISMOLOGISTS AS TO THE MINIMUM THRESHOLD MAGNITUDE M_{SUBS} BEGINNING WITH WHICH UNDERGROUND NUCLEAR EXPLOSIONS CAN BE IDENTIFIED. SOME AMERICAN SEISMOLOGISTS FEEL THAT THE MINIMUM M_{SUBS} AT WHICH SUCH EXPLOSIONS CAN BE DETECTED (FOR PERIODS T EQUALS 20 SEC, MAGNIFICATION OF ABOUT 3,000) IS THE MAGNITUDE OF EXPLOSIONS WITH A POWER OF 20-60 KILOTONS IN SOLID ROCK OF THE GRANITE TYPE (M_{SUBS} GREATER THAN OR EQUAL TO 4). SOME AMERICAN, BRITISH AND CANADIAN SEISMOLOGISTS ACCEPT A LESSER POWER (M_{SUBS} EQUALS 3 OR EVEN M_{SUBS} EQUALS 2).

UNCLASSIFIED

3/3 017

UNCLASSIFIED

PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0044043

ABSTRACT/EXTRACT--HOWEVER, IN THE UNITED STATES, SWEDEN AND ELSEWHERE THE MAGNIFICATION OF LONG PERIOD SEISMOGRAPHS FOR PERIODS T EQUALS 20 SEC HAS BEEN INCREASED TO 100,000 AND THEY HAVE BEEN PLACED IN UNDERGROUND CHAMBERS AND EMPLOY FILTERS IN THE REGION OF PERIODS 3-10 SECONDS. THIS INDICATES THAT A THRESHOLD VALUE M_{SUBS} EQUALS 2 FOR THE REGISTRY OF SURFACE WAVES AT TELESEISMIC DISTANCES IS ALREADY ENTIRELY FEASIBLE. A VALUE M_{SUBS} EQUALS 2 IS OBSERVED FOR UNDERGROUND EXPLOSIONS WITH A POWER OF SEVERAL KILOTONS IN SOLID ROCK. THIS PAPER GIVES DATA ON THE RELATIONSHIP BETWEEN M_{SUBS} AND M_{SUBB} FOR UNDERGROUND NUCLEAR BURSTS AS DETERMINED AT SEISMIC STATIONS IN THE USSR. THE AUTHORS COMPARE THESE RELATIONSHIPS WITH THOSE FOR EARTHQUAKES AND ANALYZE THE POSSIBILITY OF IDENTIFYING UNDERGROUND NUCLEAR BURSTS ON THE BASIS OF THE MAGNITUDE CRITERION. COMPARISON OF EXPRESSIONS OF THE FORM M EQUALS $M(MP)$ FOR EXPLOSIONS AND EARTHQUAKES OBTAINED FROM SOVIET SEISMIC DATA REVEALED THAT FOR BURSTS WITH MP FROM 4.2 TO 6.0 THE M VALUES ARE 1.5-0.5 UNIT(S) OF MAGNITUDE LOWER ON THE M EQUALS $M(MP)$ GRAPHS THAN FOR EARTHQUAKES. THUS, UNDERGROUND NUCLEAR BURSTS CAN BE DETECTED FROM SEISMIC RECORDS WITHOUT ON THE SPOT INSPECTION. FACILITY: INSTITUTE OF PHYSICS OF THE EARTH.

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UNCLASSIFIED

USSR

UDC 541.69+542.91+547.631.4

GAMBURYAN, A. A., BABIYAN, N. A., MOROZOVA, N. M., AKOPYAN, N. YE., CHAUSHYAN, K. M., and MNDZHOYAN, L. O., Institute of Fine Organic Chemistry imeni A. L. Mndzhoyan, Academy of Sciences Armenian SSR, Yerevan

"Studies in the Field of Aminoethers. V. Dialkylaminoalkyl Ethers of Benzhydrol and o-, m-, and p-Benzhydrols - their Synthesis and Neuropharmacological Activity"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 10, 1971, pp 900-908

Abstract: By the rearrangement of quaternary salts formed by aminoalcohols with benzhydryl chlorides, the aminoethers $RC_6H_4-CH(Ph)-OC_nH_{2n}NR'_2$ were prepared, where R = H or o-, m-, p-Me; R' = Me, Et; $C_nH_{2n} = (CH_2)_2, (CH_2)_3, (CH_2)_4, CH(Me)CH_2CH_2, CH(Me)CH(Me), CH_2C(Me)_2CH_2$. Physiological tests carried out with the aminoethers upon their conversion to hydrochlorides showed that transition from beta-dialkylaminoethyl ethers to propyl ethers increased the antispasmodic activity. This activity again decreased on transition to dialkylaminobutyl ethers. Some of the compounds that has been prepared exhibited an antihistaminic activity in tests on the isolated intestine of guinea pigs.

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USSR

GAMBURYAN, A. A., et al., Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 10, 1971, pp 900-908

The compounds synthesized together with their physical properties and the melting points of hydrochlorides or iodomethylates are listed in tables.

2/2

USSR

UDC 735.07

GANTDOV, SH. G., and KERIMOV, A. M., Azerbaydzhan State University imeni S. M. Kirov

"Study of the State of Substances in Critical Regions"

Baku, Izvestiya Akademii Nauk Azerbaydzhanskoy SSR, Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 4, 1971, pp 141-144

Abstract: The study of peculiarities of the behavior of substances near the critical point is a complex experimental and theoretical problem. To solve problems which arise, it is important to study isochoric heat capacity on isochores during the transition of a system from heterogeneous to homogeneous state, through the phase coexistence line. It is especially important to study heat capacity now when the decision of the Soviet Commission, in accordance with the program of the International Association, provides for the creation of reference values for thermophysical properties of technically important substances and the compilation of international tables of these properties. The article describes results of a study of the heat capacity of benzene along the saturation line on 22 isochores embracing regions of the

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USSR

GAMIDOV, SH. G., and KERIMOV, A. M., Izvestiya Akademii Nauk Azerbaydzhanskoy SSR, Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 4, 1971, pp 141-144

two-phase and one-phase state of the substance. It was found that during the transition of the substance from the two-phase to the one-phase state, heat capacity changes abruptly far from the critical point, smoothly in the neighborhood thereof, in a certain temperature interval.

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USSR

UDC 616.981.452-084.47

AGAFOV, V. I., BABKIN, Ye. I., VDOVIN, D. G., VOROBYCHIKOV, V. M.,
VOROB'YEV, A. A., GAMBESHKO, K. P., GAYCHIKO, K. G., GEFEN, N. Ye., YEVSTIGNEYEV,
V. I., YEMEL'YANOVA, O. V., ZEMSKOV, Ye. M., IKAMALIYEV, O. G., KAMALOV, I. I.,
KVIRIKADZE, V. V., KUTYREV, P. A., MISNIKOV, O. P., PUSHKAREV, V. P., and
ROZDESTVENSKIY, D. A., Military Medical Academy imeni S. M. Kirov, Leningrad

"A Comparative Efficiency Characteristic of Different Immunization Methods
Against Plague Infection"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 11, 1972,
pp 106-112

Abstract: Analysis of the available literature data led to the conclusion
that oral, aerogenic, and jet immunization methods are the most efficient
compared with subcutaneous and skin methods. The average number of patients
inoculated against plague infection was 517, 817 (419), and 937 per hr for jet
injectors, aerogenic method liquid and dry vaccine, and oral method (tablets),
respectively, compared with only 43 and 28 for the subcutaneous and skin
methods, respectively.

1/1

1/2 041 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--CALCULATION OF LOCAL VALUES FOR THE MEAN THICKNESS OF A TURBULENT
FILM OF LIQUID FLOWING DOWN A VERTICAL SURFACE -U-
AUTHOR-(03)-GANCHEV, V.G., KOZLOV, V.M., LOZVETSKIY, V.V.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, IZVESTIYA VYSSHIKH UCHEBNYKH ZAEDENIY, MASHINOSTROYENIYE,
NO. 1, 1970, PP 112-116
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--TURBULENT FLOW, PLANAR FLOW, GRAVITATION FIELD, BOUNDARY LAYER
THICKNESS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1985/0535 STEP NO--UR/0145770/000/001/0112/0116
CIRC ACCESSION NO--AT0100989
UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0100989

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PROPOSE A METHOD FOR CALCULATING THE LOCAL VALUES FOR THE MEAN THICKNESS OF A TURBULENT FILM OF FLUID FLOWING ALONG A VERTICAL SURFACE UNDER THE INFLUENCE OF GRAVITY. THE TECHNIQUE USED IS BASED ON A METHOD OF CALCULATING THE BOUNDARY LAYER. THE MATHEMATICAL TOOLS ARE DERIVED WHICH MAKE IT POSSIBLE TO DETERMINE HOW THE MEAN THICKNESS OF THE FILM VARIES WITH LENGTH ALONG A VERTICAL CHANNEL UNDER TURBULENT FLOW CONDITIONS. A GRAPH IS GIVEN WHICH COMPARES THE COMPUTATIONAL RELATIONSHIP AND THE RESULTS OF EXPERIMENTAL INVESTIGATIONS. THE AUTHORS CONCLUDE THAT THE AGREEMENT BETWEEN THE TWO IS EXCELLENT.

UNCLASSIFIED

USSR

UDC 669.295.018.9(088.8)

GAMELKIN, B. S., GOLIKOV, V. V., OGURISOV, S. V., NEPOMNYASHCHIY, I. V.,
SAMAROV, M. A., SAVIKIN, V. I., and RODNYIY, M. I.

"Method of Producing Alloys of Titanium With Refractory Metals"

USSR Author's Certificate No 258598, Filed 28/01/67, Published 30/04/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract
No 2 G197 P)

Translation: A method is suggested for producing alloys of Ti with
refractory metals by metallothermic reduction of preliminarily prepared
solutions of chlorides of the alloying metals to $TiCl_4$. To increase
the homogeneity and quality of the alloys produced, the chloride solu-
tions are heated to a temperature above the boiling point of the solu-
tion before the reduction process.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--A MIGHTY ACCELERATOR OF THE SCIENTIFIC TECHNICAL PROGRESS -U-
AUTHOR--(05)--ANDRUNAKIYEVICH, V., GONTSA, M., ZAYTSEV, G., GAMETSKIY, A.,
CHEBOTARU, A.
CCOUNTRY OF INFO--USSR
SOURCE--SOVETSKAYA MOLDAVIYA, JULY 2, 1970, P 2
DATE PUBLISHED--02JUL70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--COMPUTER R AND D, COMPUTER CENTER, ELECTRONIC COMPUTER/(U)BESM
4 DIGITAL COMPUTER, (U)M20 COMPUTER, (U)M220 COMPUTER, (U)BESM 3M
COMPUTER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0812 STEP NO--UR/9021/70/000/000/0002/0002
CIRC ACCESSION NO--AN0111995
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AN0111995

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FIVE ARTICLES PUBLISHED UNDER ONE TITLE ARE DEALING WITH THE STATE OF THE COMPUTER ART IN THE MOLDAVIAN REPUBLIC IN GENERAL, AND THE COMPUTATION CENTER OF THE MOLDAVIAN ACADEMY OF SCIENCES IN PARTICULAR. SOME TIME DURING 1970, THE COMPUTATION CENTER ACQUIRED A BESM 4 ELECTRONIC COMPUTER. IT IS THE SECOND GENERATION TRANSISTORIZED COMPUTER WITH THE MEMORY CAPABLE OF STORING 8,000 NUMBERS. IN ADDITION IT HAS THE EXTERNAL MEMORY CAPACITY CONSISTING OF 8 MAGNETIC DRUMS AND 4 MAGNETIC TAPES WITH THE TOTAL STORAGE CAPACITY OF 4,131,072 NUMBERS. THE COMPUTER CAN PERFORM 20,000 OPERATIONS PER SECOND AND HAS A LIBRARY OF STANDARD PROGRAMS WHICH WERE COMPILES FOR M-20, BESM 3M, AND M 220 COMPUTERS.

UNCLASSIFIED

USSR

6
UDC 577.391, 612.822.1

FAMICHENKA, K. V., GAMEZA, M. V., SURYKAN, P. M.

"Guanosine Nucleotides in the Brain During Neutron Irradiation"

Minsk, Vestsi Akademiyi Nauk BSSR, Seryya biyalagicheskikh Nauk, No 1, 1970, pp 85-90

Abstract: Since the nucleotides, guanosine monophosphate (GMP), guanosine diphosphate (GDP), and guanosine triphosphate (GTP), participate in the biosynthesis of polypeptide chains, internal respiration, etc., their activity in four groups of guinea pigs was studied. Experimental animals were irradiated with .3.5 r of penetrating neutrons and sacrificed 4, 8 and 12 hours after irradiation. Pure nucleotides were obtained and determined quantitatively. Experimental results show that the GMP content increased 8 hours after irradiation, and was almost equal to controls after 4 and 12 hrs. The amount of GDP, almost unchanged at 4 and 12 hrs, had considerably decreased (50%) at 8 hrs. GTP showed a very slight change at 4 hrs., decreased almost to zero at 8 hrs, and increased at 12 hrs. Total nucleotides were reduced after 8 hrs only. It was concluded that the effect on nucleotide content in the brain of guinea pigs is most pronounced 8 hours after neutronic irradiation.

1/1

- 32 -

1/2 037 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--GUANOSINE NUCLEOTIDES IN THE BRAIN DURING NEUTRON IRRADIATION -U-
AUTHOR--(03)-FOMICHENKO, K.V., GAMEZO, N.V., SURIKOV, P.M.
COUNTRY OF INFO--USSR
SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. BIYAL. NAVUK 1970, (1),
85-90
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--NEUTRON IRRADIATION, RADIATION BIOLOGIC EFFECT, BRAIN,
NUCLEOTIDE, ELECTROPHORESIS, THIN LAYER CHROMATOGRAPHY, RADIATION DOSAGE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--199B/0509 STEP NO--UR/0440/70/000/001/0085/0090
CIRC ACCESSION NO--AP0121183
UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121183
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. USING HIGH VOLTAGE ELECTROPHORESIS
AND THIN LAYER CHROMATOG., IT WAS FOUND THAT RAT BRAIN CONTENT OF GMP
AND GOP DID NOT CHANGE 4 AND 12 HR AFTER IRRADN. WITH MEDIUM ENERGY
NEUTRONS (13.5 RAD) BEING SLIGHTLY HIGHER (GMP) OR LOWER (GOP) THAN IN
CONTROLS 3 HR AFTER IRRADN. THE GTP CONTENT WAS SIGNIFICANTLY LOWERED 8
HR AFTER IRRADN., SLIGHTLY AFTER 12 HR, AND UNCHANGED AFTER 4 HR. AT
THE TIME OF HIGHEST EFFECT (8 HR) THE TOTAL CONTENT OF GUANOSINE
PHOSPHATES WAS LOWER BY 29.1PERCENT THAN IN CONTROL ANIMALS.
FACILITY: INST. FIZIOL., MINSK, USSR.

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--20NOV78

CIRC ACCESSION NO--AP0135710

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HYPOXANTHINE LEVEL IN THE RAT BRAIN WAS FOLLOWED 1,2,4,8, 12 HR, AND 1,2,7,15 AND 30 DAYS AFTER EXPOSURE TO NEUTRONS (13.5 RADS). CHANGES WERE SIMILAR TO CHANGES AFTER GAMMA IRRADN. DECREASES, BETWEEN 4 HR AND 7 DAYS AFTER IRRADN, WERE MAX. AFTER 12 HR. (56.7PERCENT). FACILITY: INST. FIZIOL., MINSK, USSR.

UNCLASSIFIED

USSR

UDC: 8.74

ASKEROV, Ch. I., GAMIDOV, V. I., IBRAGIMOV, T. A.

"Minimization of the Number of States of a Microprogram Automaton"

V sb. Avtomaty i uor. setyani svyazi (Automata and Control of Communications Networks--collection of works), Moscow, "Nauka", 1971, pp 142-153 (from REh-Kibernetika, No 4, Apr 72, Abstract No 4V526)

Translation: There are various interpretations of logic systems of algorithms (LSA) in terms of finite automata distinguished by the fact that put into correspondence with each internal state are either the individual positions of the LSA, or the individual members or a group of simultaneously realized members of the LSA, or a group of consecutively realized members of the LSA which form a complex microcommand. In this paper, a method is proposed for forming complex microcommands with minimization of their number; this is accompanied by a slight increase in the number of checks of the logic conditions. Authors' abstract.

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1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CRACKING OF A WIDE FRACTION OF SIAZAN PETROLEUMS OVER AN ALUMINA
CHROMIA CATALYST -U-
AUTHOR--(05)-GUSEINOV, D.A., GAMIDZADE, G.A., ABASOVA, N.A., GADZHIEV,
G.G., AKOPYAN, M.P. 6
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(3), 47-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS, PROPULSION AND FUELS
TOPIC TAGS--GASOLINE, CATALYTIC CRACKING, ALUMINA, CHROMIUM, METHANE,
HYDROGEN, THERMAL EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/2096 STEP NO--UR/0152/70/013/003/0047/0049
CIRC ACCESSION NO--AP0127469
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0127469

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GASOLINE LIGROINE FRACTION, B. IS SMALLER THAN OR EQUAL TO 220DEGREES, WAS PROCESSED. AS THE TEMP. INCREASED FROM 480 TO 560DEGREES, THE YIELD OF H-CH SUB4 FRACTION INCREASED AND THAT OF UNSATD. HYDROCARBONS DECREASED FROM 47.8 TO 44.9 WT. PERCENT. THE MAX. GAS YIELD OF 72.0 WT. PERCENT BASED ON RAW MATERIAL WAS OBTAINED AT 0.5 HR PRIME NEGATIVE1 AND 560DEGREES WHEN 3.2PERCENT COKE WAS DEPOSITED ON THE CATALYST, BUT THE OPTIMUM GAS AND UNSATD. HYDROCARBON YIELD WAS OBTAINED AT 0.7 HR PRIME NEGATIVE1. THE HIGHER YIELD OF 87PERCENT CATALYZATE WAS OBTAINED AT 0.7 HR PRIME NEGATIVE1 AND 480DEGREES. THE LIQ. CATALYZATE WAS USED FOR HIGH OCTANE GASOLINE. CHARACTERISTICS OF THE RAW MATERIAL AND RESULTS ARE TABULATED. FACILITY: AZERB. INST. NEFTI KHIM. IM. AZIZBEKOVA, BAKU, USSR.

UNCLASSIFIED

USSR

GAMKRELIDZE, R. V.

"Theory of Probabilities. Mathematical Statistics. Theoretical Cybernetics. Vol. 10"

Teoriya Veroyatnostey. Matematicheskaya Statika. Teoreticheskaya Kibernetika. T. 10 [English Version Above], Moscow, 1972, 143 pages (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V131 K).

Translation: This collection contains four reviews: Yu. V. Prokhorov, Multivariate Distributions: inequalities and limit theorem; V. P. Kozyrev, The Theory of Graphs; Ye. B. Yanovskaya, Infinite Antagonistic Games; A. V. Gladkiy, A. Ya. Dikovskiy, The Theory of Formal Grammars.

The first review contains results produced in the last decade on inequalities and limit theorems from the theory of probabilities in the multivariate case and covers materials abstracted in RZh Matematika in 1958-1971. The second review covers domestic and foreign works on the theory of graphs from 1963 to 1971 and points out the main trends and main results in various areas of graph theory. The third review is composed on the basis of materials abstracted in RZh Matematika in 1953-1971, and concerns the games of two persons in normal form with zero sum

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USSR

GAMKRELIDZE, R. V., Teoriya Veroyatnostey. Matematicheskaya Statika. Teoreticheskaya Kibernetika. T. 10, Moscow, 1972, 143 pages.

and infinite strategies. The fourth review is based on articles abstracted in RZh Matematika in 1968-1971.

2/2

- 16 -

USSR

UDC 621.311.007.2:681.3.06

GAMM, A. Z., Candidate of Technical Sciences, Siberian Power Engineering Institute

"Estimating the Dynamic State of an Electric Power System as a Problem of Non-linear Programming"

Moscow, Elektrichestvo, No 9, 1972, pp 1-7

Abstract: A study was made of the problem of estimating the dynamic values of the parameters of an electric power system by the data from measuring devices the readings of which contain errors. The calculation of the optimal estimates is reduced to a problem of nonlinear programming the minimizable function in which is the quadratic form of the deviation of the estimates from the measurements and the restrictions are exact equations of the electric power system regime and inequalities defining the a priori range of variation of the parameters. Expressions are presented for the required number of measurements and the number of equations of the mathematical model of the operating conditions, and expressions are also given permitting indication of the fiducial intervals of the estimates obtained. The results offer the possibility of appreciably more precise definition of the initial information for control of electric power systems, detection of instruments which have failed and optimal placement of the measuring instruments in the systems. An example calculation is performed

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USSR

GAMM, A. Z., Elektrichestvo, No 9, 1972, pp 1-7

to estimate the operating parameters for the simplest system — an electric power transmission line have the resistances $r = 0$ and $x = 20$ ohms. In the example it was found to be possible to take the seventh iteration as the solution.

2/2

USSR

UDC 621.311.153.501.21.001.24:631.3

GAMM, A. Z., KRUM, L. A., SHER, I. A.

"Requirements Imposed on Programs for Calculating the Stationary Conditions of Power Systems"

V sb. Probl. tekhn. elektrodinamiki (Problems of Technical Electrodynamics -- collection of works), vyp. 25, Kiev, Naukova Dumka Press, 1970, pp 53-56 (from RZh-Elektrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Ye252)

Translation: The requirements imposed on the programs for calculating stationary conditions are described. The conditions that preparation of the initial information must satisfy are indicated. The basic procedural principles are described on the basis of which a program for calculating the stationary conditions has been developed at the Siberian Power Engineering Institute of the Siberian Department of the USSR Academy of Sciences. The bibliography has 2 entries.

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1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--POSSIBLE REDUCTION IN THE INTERROW TREATMENTS OF THE POTATO BY THE
USE OF HERBICIDES -U-
AUTHOR-(03)-PISAREV, B.A., ZAKHARENKO, V.A., GAMMADOV, K.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. SEL. KHOZ. 1970, 8(2), 120-2
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, AGRICULTURE
TOPIC TAGS--HERBICIDE, AGRICULTURE CROP, SOIL TYPE/(U)PROMETRYNE
HERBICIDE, (U)REGLONE HERBICIDE, (U)METURIN HERBICIDE, (U)ARESIN
HERBICIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1697 STEP NO--UR/0394/70/003/002/0120/0122
CIRC ACCESSION NO--AP0125318

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125318

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN 1965-8, TESTS WERE CONDUCTED ON SANDY SOD-PODZOL SOIL; PH IN KCL, 5; HUMUS CONTENT, 1.4-1.6PERCENT. OF THE HERBICIDES APPLIED-HA: PROMETRYNE (1.5 AND 2 KG), REGLONE (0.9 KG), METURIN (3 KG), ARESIN (4 KG), THE MOST EFFICIENT WAS PROMETRYNE. THIS HERBICIDE USED WITH MECH. CULTIVATION MARKEDLY ENHANCED YIELDS. PROMETRYNE INCREASED TUBER WT. IN RELATION TO ROOT WT. SLIGHTLY. THE POTATU CROP., IRRESP. OF THE INTENSITY OF MECH. TREATMENT WAS HIGHER ON PLOTS SPRAYED WITH PROMETRYNE (AV. 223.6-39.4 QUINTALS-HA); MECH. CULTIVATION ALONE YIELDED ON AV. 202.7-21.3 QUINTALS-HA.

UNCLASSIFIED

USSR

UDC: 681.121:389.12

TZIP Engineers GAMMERMAN, M. Ya., DANILOV, M. Ya.; KIVILIS, S. S.,
Docent, Candidate of Technical Sciences

"High-Production Flowmeter"

Moscow, Pribory i sistemy upravleniya, No 9, 1973, p 48

Abstract: This brief article describes a flowmeter developed and operated by TZIP (Tallin Plant for Measurement Instruments) to satisfy demands for a highly accurate means of conducting accurate transmissions of liquid flow units. Also capable of gas flow measurements, the meter provides high productivity in a broad measurement range. A diagram of the device is given together with an explanatory text. Investigation of the prototype, built by the VNIIMSe /expansion unknown/, showed that the measurement error did not exceed ± 0.2 or $\pm 0.3\%$. It is noted that there is practically no upper limit of measurement for the device.

1/1

USSR

UDC 621.357.7:669.236(088.8)

BELOV, S. F., GANOCHKINA, V. A., LAVROV, I. I., SINITSYN, N. M.

"Method of Electrochemical Deposition of Ruthenium"

USSR Author's Certificate No 316752, filed 24 Mar 70, published 22 Dec 71 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L315P)

Translation: A procedure is patented for electrochemical deposition of Ru from an electrolyte based on sulfaminol and the complex salt of ruthenium. The procedure is distinguished by the fact that in order to obtain a uniform fine crystalline film, ammonium nitrosopentachlororuthenate is introduced as the complex Ru salt, and the process takes place at 20-70°, D 0.5-10 amps/dm². The electrolyte contains the following (in grams/liter): sulfaminol 40-50, ammonium nitrosopentachlororuthenate (on the metal) 0.5-4.

1/1

1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--KINETICS OF THE DISSOLUTION OF CALCIUM TUNGSTATE IN OXALATE ACID
SOLUTIONS -U-
AUTHOR--(04)-POTASHNIKOV, YU.M., GAMOLSKIY, A.M., MOKHOSOVYEV, M.V.,
KOZLOVA, F.M.
COUNTRY OF INFO--USSR
SOURCE--Zh. NEORG. KHIM. 1970, 15(2), 502-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL REACTION KINETICS, AQUEOUS SOLUTION, CALCIUM
CHLORIDE, SOLUBILITY, TUNGSTATE, OXALATE
CENTRAL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1706 STEP NO--UR/0078/70/015/002/0502/0508
CIRC ACCESSION NO--AP0115535
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0115535

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CAC SUB2 O SUB4.H SUB2 O FORMED WHEN CA WO SUB4.H SUB2 O WAS DISSOLVED IN AN AQ. SOLN. OF H SUB3 C SUB2 O SUB4 AT 20-60DEGREES. RATE OF CAWO SUB4.H SUB2 O DISSOLN. IS INDEPENDENT OF MIXING RATE AND IS LINEARLY PROPORTIONAL TO H SUB2 C SUB2 O SUB4 CONC. IN THIS PROCESS, H SUB2 C SUB2 O SUB4 PERFORMS 2 FUNCTIONS, 1ST IT CAUSES SEPN. OF 2 SOLIDS, CAC SUB2 O SUB4 AND H SUB2 WO SUB4, AND 2ND IT REACTS WITH H SUB2 WO SUB4 TO GIVE H SUB2 (WO SUB3 (C SUB2 O SUB4)). IN THE PRESENCE OF HCL, CACL SUB2 FORMS ALONG WITH H SUB2 (WO SUB3 (C SUB2 O SUB4)). FACILITY: DONETS. GOS. UNIV., DONETSK, USSR.

UNCLASSIFIED

Television

USSR

UDC 621.937;621.396.4(088.8)

BOLOVINTSEV, YU. M., GAMORA, V. A.

Device for Automatic Control of Nonlinear Distortions in Television Channels"

USSR Author's Certificate No 275181, Filed 11 Mar 68, Published 26 Oct 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G175P)

Translation: The patented device contains a logical processing and display unit, a master clock, a control zone shaper and a comparison module. In order to improve the control accuracy, a controllable amplifier has been introduced into the device. The output of this amplifier is connected via a limiter to one of the inputs of the control trigger. The output of the control trigger is connected via the comparison module and the step voltage shaper to the input of the controlled amplifier.

1/1

USSR

UDC: 681.3.001:518.5

GORDOVSKIY, V.K.. GAMOTA, V.S.

"Some Methods of Data Compression"

Sistemy ISredstva Avtomat. Upr. [Automatic control systems and equipment] Kiev, 1970, pp 135-139 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika I Vychislitel'naya Tekhnika, No 3, 1971, Abstract No 3 B83 by the authors)

Translation: The authors study methods of compression of data as applicable to problems requiring solution of systems of high-order linear algebraic equations and calculation of inverse matrices of the same order. In order to save memory, it is suggested that the information, represented in the form of matrices, be written in compressed form. Two methods are studied: the logic method and the coordinate method. According to the first method, the nonzero elements of the matrix and an array of special indicators are recorded, the significant element in the number array corresponding to 1 in the array of indicators, the zero element corresponding to zero in this array. This method should be used for machines with N-bit words if $M > \frac{n^2}{P}$: where P is the number of elements

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USSR

UDC: 681.3.001:518.5

GORDOVSKIY, V.K., GAMOTA, V.S., *Sistemy I Sredstva Avtomat. Upr.* Kiev, 1970, pp 135-139.

in the matrix written in one computer word; N is the dimensionality of the matrix; M is the number of zero elements in the matrix. The coordinate method indicates the number of nonzero elements of the matrix. This method is suitable when $M > n^2/L$. It is noted that compression programs for the Razdan-2 and Ural-14 computers have been written for these methods.

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Mechanical Properties

UDC 621.775.001.5

USSR

GAMOV, O. P., Moscow

"The Influence of pH of the Electrolyte on the Strength of a Hard Alloy of VK-type in Electrochemical Processing"
Kishinev, Elektronnaya Obrabotka Materialov, No 3(51), 1973, pp 18-20

Abstract: In view of the fact that both phases of hard alloys of VK-type, tungsten carbide and the solid solution of carbon and tungsten in cobalt, possess a different electrochemical activity, experiments were carried out in order to determine the influence of selective phase dissolution on the strength at lateral bending. Specimens of VK6 and VK20 hard alloys, after being treated in different electrolytes, were subjected to bending tests. The intensity of anodic selective dissolution of the specimens, depending on the composition of the electrolyte, and their strength after electrochemical treatment in the electrolytes are discussed by reference to tabulated experimental data. The bending strength is found to decrease at selective uniform phase dissolution in electrolytes 15% NaOH, HCl:H₂O=1.3 and 15% Na₂WO₄. A minimum strength results by uniform dissolution of WC and C phases from the surface of the specimens in 15% Na₂WO₄. One figure, four tables, four bibliographic references.

1/1

USSR

UDC 531.781.2:621.382

BAKHITINOV, V. V., Engineer, GAMPER, I. G., Candidate of Technical Sciences,
SHISHLYANNIKOV, B. M., Engineer

"p-Type Silicon Diffusion Strain Resistors"

Moscow, Pribery i Sistemy Upravleniya, No 1, Jan 71, pp 59-60

Abstract: A new diffusion strain resistor is discussed in this article. It is pointed out that the use of a thin strongly alloyed layer of semiconducting material only a few microns thick as the resistor has a number of advantages over uniformly alloyed strain resistors: e.g., much weaker dependence of the resistance and strain sensitivity factor on temperature, possibility of obtaining practically any rated resistance, use of the strain resistor as an elastic element (beam) in which the strain-sensitive layer is bound to the body of the beam by atomic bonds, significantly improving the thermal contact of the strain sensitive elements with the base and eliminating problems caused by the presence of glue.

The procedure used to obtain p-type diffusion layers and to investigate the characteristics of diffusion strain resistances is described. Graphs are presented showing the strain sensitivity factor S as a function of the surface concentration N_s in diffusion layers of p-Si at $T = 293^\circ\text{K}$, the strain

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USSR

BAKHTINOV, V. V., et al., Pribory i Sistemy Upravleniya, No 1, Jan 71, pp 59-60

sensitivity factor S as a function of the temperature T for different N_S [surface concentration of the diffused admixture] in cm^{-3} , α_R [the thermal resistance coefficient] of the p-Si diffusion layers as a function of the surface concentration N_S , and the static characteristic of a p-type silicon diffusion strain resistor.

The research led to manufacture of diffusion strain sensitive elements of the cantilever type with the following parameters:

Resistance of upper and lower strain resistors in ohms	55
Resistance dispersion in %	+5
Insulation resistance in kilohms	60-100
Geometric dimensions in mm	7x0.6x0.15
Thermal coefficients of strain sensitivity and resistance	
in degrees ⁻¹ :	
α_S	$1.3 \cdot 10^{-3}$
α_R	$1.5 \cdot 10^{-3}$

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USSR

UDC 547.397+595.7

DRABKINA, A. A., YEFIMOVA, O. V., TSIZIN, Yu. S., GANPER, N. M., and PRIDANTSEVA, Ye. A., Institute of Chemical Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy; All-Union Institute of Plant Protection

"Compounds Which Simulate the Effect of the Juvenile Insect Hormone. III. Synthesis of 3,11-Dimethyl-11-chlorododecen-2-oic Acid Ethyl Ester"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103, No 2, Feb 72, pp 457-459

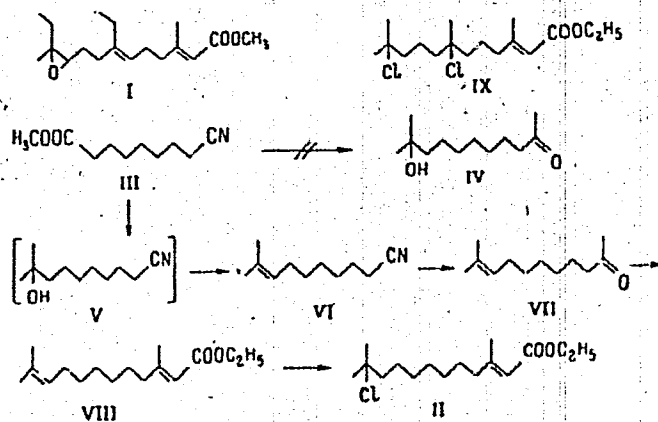
Abstract: 3-11-Dimethyl-11-chlorododecen-2-oic acid ethyl ester (II) was synthesized for biological tests. Compound (II) shows the groups typical of the active analogs of insect juvenila hormone of (I).

1/3

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USSR

DRABKINA, A. A., et al., Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 457-459



2/3

USSR

DRABKINA, A. A., et al., Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72
pp 457-459

The synthesis is based on methyl 8-cyanoctanoate (III). It was assumed at first that ester (III) could be converted to hydroxy ketone (IV) with excess methylmagnesium iodide. However, even a reagent ratio of 1:10 failed to give the desired result. Careful selection of reaction conditions showed that ester (III) reacts with three moles of methylmagnesium iodide to form hydroxy nitrile (V) which is converted to unsaturated nitrile (VI) after dehydration without filtering. Reaction of (VI) with four moles of methylmagnesium iodide yields ketone (VII) which is converted to the diene ester (VIII) by the Whittig reaction. Compound (II) is obtained by bubbling hydrogen chloride through an alcohol solution of diene ester (VIII). Tests on mosquito larvae showed that (II) is as active physiologically as compound (IX), which is called "synthetic juvenile hormone."

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1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--THERMAL STABILITY OF POLY,3,METHYLENPHTHALIDE -U-
AUTHOR--(051)RUDE, V.V., ZHURAVLEVA, I.V., GANZAZADE, A.I., SALAZKIN, S.N.,
CHELIDZE, G.SH.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 926-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--THERMAL STABILITY, ACTIVATION ENERGY, FREE RADICAL, BENZENE
DERIVATIVE, HETEROCYCLIC OXYGEN COMPOUND, LACTONE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/TAPE--3006/1312 STEP NO--08/00627/010000/004/0926/0928
CIRC ACCESSION NO--AP0134986
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134536

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE TITLE POLYMER (I) (S. B. VINGRADOVA, ET AL., 1970) WAS HEATED IN A VACUUM OR AR ATMOSPHERE AT 275-400DEGREES. THE MAIN DECOMP. PRODUCT IS LESS THAN OR EQUAL TO 375DEGREES WAS 3,METHYLENEPHTHALIDE. ONLY ABOVE 375DEGREES TRACES OF CO SUB2, CO, AND H SUB2 WERE DETECTED. DTA CURVES AND WT. LOSS VS. TIME CURVES SHOWED THAT THE DECOMP. OF I WAS A FREE RADICAL INITIATED DEPOLYMN. ASSOC. WITH 39.5 KCAL-MOLE ACTIVATION ENERGY.
FACILITY: INST. ELEMENTORG. SUEIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 539.214;539.374

SITNIKOV, Ye. I., GANAGO, O. A., VEL'BOY, V. F.

"Study of the Stress-Deformation State of Cylindrical Stamps Considering Rigidity of the Bottom"

Sb. nauch. tr. Chelyabinsk. politekhn. in-ta (Collection of Scientific Works of Chelyabinsk Polytechnical Institute), 1972, No. 111, pp 63-69 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V477)

Translation: Stamps having an opening in the bottom portion and a rigidity of this portion commensurable with the rigidity of the wall are considered. Analysis of the stress-deformation state is made by a variation method considering rigidity of the bottom. 5 ref.

1/2 041 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EXCITATION OF HYPERSOUND IN THE MILLIMETER RANGE -U-
AUTHOR--(03)-GANAPOLSKIY, YE.M., KISELEV, R.V., CHERNETS, A.N.
COUNTRY OF INFO--USSR
SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 191, APR. 11, 1970, P.
1015-1017
DATE PUBLISHED--11APR70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--EXCITATION ENERGY, HYPERSONIC FLOW, QUARTZ, SINGLE CRYSTAL,
LIQUID HELIUM, TEMPERATURE, ELECTROMAGNETIC WAVE OSCILLATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/0321 STEP NO--UR/0020/70/191/000/1015/1017
CIRC ACCESSION NO--AT0127902
UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0127902

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF EXPERIMENTS IN WHICH IT PROVED POSSIBLE TO EXCITE LONGITUDINAL AND TRANSVERSE HYPERSONIC WAVES WITH A FREQUENCY OF 75 GHZ IN A QUARTZ SINGLE CRYSTAL AT LIQUID HELIUM TEMPERATURE. THE RESULTS WERE OBTAINED WITH THE AID OF A METHOD PROPOSED BY GANAPOL'SKII AND CHERNETS (1963) IN WHICH HYPERSONIC WAVES ARE EXCITED BY MEANS OF AN ELECTROMAGNETIC DELAYED SURFACE WAVE. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, INSTITUT RADIOFIZIKI ELEKTRONIKI, KHARKOV, UKRAINIAN SSR.

UNCLASSIFIED

UNCLASSIFIED

SECTION III SO: SELECTED RESEARCH RESULTS
FACULTIES

PCS-99
SEPT 71

Institute of Biophysics, Pushchino

Description:

(U) During this quarterly reporting period, 25 new articles were

identified from the Institute of Biophysics, Pushchino. On the basis of these articles, it was possible to identify 32 new personalities with the Institute.

These personalities, the subjects of the articles, and the dates are given

below:

Biophysics
All-biophysics / physiology

<u>Allyeva, S. A.</u>	radiation effect	1971 (34)
<u>Aplkayeva, G. F.</u>	phosphorylation	1970 (33)
<u>Arifova, D. F.</u>	radiation effect	1971 (34)
<u>Ashipa, Ya. I.</u>	hypoxia	1969 (37)
<u>Bregadze, I. F.</u>	radiation effect	1970 (33)
<u>Buzol, Ye. P.</u>	luminescence	1970 (33)
<u>Dal'tsiyeva, T. I.</u>	radiation effect	1970 (33)
<u>Il'm, I. I.</u>	blood plasma	1969 (40)
<u>Domareva, O. P.</u>	radiation effect	1970 (35)
<u>Dubrov, A. P.</u>	radiation effect	1971 (42)
<u>Gubelova, N. A.</u>	biochemical analysis	1971 (42)
<u>Gonassi, Ye. B.</u>	muscle physiology	1970 (39)
<u>Ivkova, M. N.</u>	radiation effect	1971 (43)
<u>Kanatikin, V. S.</u>	serum albumin	1971 (34)
<u>Rhokhlova, G. K.</u>	phosphorylation	1971 (44)
<u>Kirlov, A. N.</u>	muscle physiology	1970 (45)
<u>Klyagina, V. P.</u>	sialivary gland	1970 (46)
<u>Korol, B. A.</u>	oligonucleotide	1971 (44)
<u>Koshelova, G. N.</u>	radiation effect	1971 (44)
	biochemical analysis	1971 (41)

ORIGINAL CONTINUED

GONASSI, Ye. E.

Kozina, S. V.	tissue culture	1970 (47)
Morkovichi, D. S.	lactate dehydrogenase	1971 (68)
Hedvadeva, I. E.	radiation effect	1971 (44)
Penkova, L. V.	phosphorylation	1971 (49)
Pronevich, L. A.	antibiotic	1970 (50)
Rodionova, M. A.	mitochondrion	1971 (51)
Shchepakin, V. N.	phosphorylation	1971 (49)
Slobodov, Ya. M.	radiation/vibration	1970 (52)
Slobodov, Ya. M.	radiation effect	1970 (52)
Isvetkov, V. D.	blood plasma	1969 (40)
Abrinkina, N. V.	lactate dehydrogenase	1971 (49)
Viltschik, H. H.	radiation effect	1970 (53)
Zamyatin, A. A.	nucleic physiology	1971 (42)

Dubrov and Koshelova (41) are associated with the Laboratory of Cell Biophysics at the Institute. Reference 52 above is of special interest since it presents an investigation of combined stresses, i.e., radiation and vibration. In addition to the above articles, five of the twenty-five (34-38) were authored by persons already identified with the Institute of Biophysics, Pushchino. Reference 55 associates the authors of the article, L. V. Soshenikina, V. L. Mignushina, and A. M. Kuzin, with the Department of Radiobiology at the Institute.

(21)

UNCLASSIFIED

USSR

UDC 615.33.014.45.07

MALYSHEVA, E. S., GANEMAN, M. G., KHIRICH, I. V., Moscow Factory of Medical Preparations No 2

"A More Rapid Method of Controlling Sterility of Seed Material in the Production of Antibiotics"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, May 1971, pp 41-43

Abstract: Before the culture medium is inoculated, it is subjected to a period of aeration and agitation at 37°C to stimulate the growth of any contaminating aerobic microorganisms to the point at which they can be detected by existing techniques. This process is shown to significantly reduce the time necessary to detect such contamination and to be more efficient than existing techniques. The authors discount the possibility of significant contamination arising from anaerobic microorganisms in view of the fact that antibiotics are produced under aerobic conditions which do not favor the growth of anaerobic organisms.

1/1

USSR

UDC 532.59:536.242

GANCHEV, B. G., KOZLOV, V. M., LOZOVETSKIY, V. V.

"Study of Descending Flow of Liquid Film on Vertical Surface and Heat Transfer to Film"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol. 20, No. 4, Apr. 71, p. 674-682.

Abstract: A theoretical and experimental study is presented of the measurement of local values of mean film thickness along the length of the film, and theoretical dependences are found for its determination in the laminar-wave ($Re_\delta < 400$) and turbulent ($Re_\delta > 400$) areas. Empirical formulas are derived for calculation of local values of the thickness of a continuous liquid layer. The velocity field in a continuous layer is determined and it is shown that the mean velocity is determining for flows of this type. The local heat transfer coefficient to the initial liquid film is studied experimentally. The experimental conditions show that α increases as the film flows down over a channeled surface. A formula is produced which describes the experimental points well.

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- 50 -

1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--HYDRODYNAMICS OF FALLING LIQUID FILMS ON VERTICAL SURFACES -U-
AUTHOR--(04)-GANCHEV, B.G., KOZLOV, V.M., LOZOVETSKIY, V.V., NIKITIN, V.M.
COUNTRY OF INFO--USSR G
SOURCE--IZV. VYSSH. UCHEB. ZAVED., MASHINOSTR. 1970, (2), 75-80
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HYDRODYNAMIC PROPERTY, SURFACE FILM, DISTILLED WATER, METAL
TUBE, SURFACE WAVE, THERMAL MEASURING INSTRUMENT, FLOW PROBE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1639 STEP NO--UR/0145/70/000/002/0075/0080
CIRC ACCESSION NO--AT0133544
UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--20NGV70
CIRC ACCESSION NO--AT0133544
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF FALLING DISTD.
H SUB2.0 FILMS ON THE OUTER SURFACE OF A VERTICAL STEEL TUBE. THE MAX.,
MIN. AND AV. THICKNESS OF THE FILM, THE FREQUENCY AND AMPLITUDE OF WAVES
ON ITS SURFACE AND ITS RATE OF FALL WERE MEASURED BY USING AN ELEC.
MICROPROBE COMBINED WITH AN OSCILLOGRAPH AND A THERMAL ANEMOMETER WITH A
W WIRE.

UNCLASSIFIED

USSR

UDC 612.21+612.014.464

CANDEL'SMAN, A. B., Institute of Physical Culture imeni P. F. Lesgaft, Leningrad

"External Respiration of Man Breathing Different Gaseous Mixtures During Physical Exercise"

Leningrad, Fiziologicheskii Zhurnal SSSR, No 12, 1971, pp 1,793-1,798

Abstract: Various indexes of external respiration were studied in athletes who ran 2,000 m at altitudes 1,700 to 2,100 m above sea level and in aqualungists who swam 500 m under water breathing mixtures of helium and oxygen and argon and oxygen. The speed of the runners in the mountains was found to be much slower than at sea level. There was a decrease in the minute volume and oxygen consumption as well as a significant decrease in carbon dioxide release relative to oxygen consumption. In the swimmers, a direct relationship was noted between the density of the mixture breathed, minute volume, oxygen consumption, carbon dioxide release, and performance. The greater the density of the mixture, the more pronounced the decrease in minute volume, oxygen consumption, carbon dioxide release, and the slower the speed.

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USSR

UDC 614.48(075.8)

CANDEL'SMAN, B. I.

Dezinfektsionnoye Delo (Disinfection), Moscow, "Meditsina," 1971, 392 pp

Translation: Annotation: Disinfection is the third edition of a textbook for sanitary feldshers. It has been widely recognized by teachers and practitioners of disinfection.

This issue, like the previous one, joins together all the branches of disinfection and the forms of organization of disinfection work within the health service system.

It contains a systematic presentation of the information required by the antiepidemic and disinfection work of sanitary feldshers at therapeutic-prophylactic and sanitary epidemiological institutions.

The current edition is reworked to a considerable extent and supplemented with due regard for the contemporary state of theoretical questions and the practice of using new methods and means of disinfection, based on recent scientific research.

1/8

USSR

GANDEL'SMAN, B. I., *Dezinfektsionnoye Delo (Disinfection)*, Moscow, "Meditsina," 1971, 392 pp

The substantial experience in using new forms of organization and carrying out disinfection measures for a wide range of infectious diseases, including the most dangerous ones, is also described.

The textbook is intended for students in the sanitary feldsher departments of medical schools.

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GANDEL'SMAN, B. I., Dezinfektsionnoye Delo (Disinfection), Moscow,
"Meditsina," 1971, 392 pp

Workers and Their Training

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Subject Index

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CSO: 1840-W

- END -

1/2 044 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ELECTRONIC ENERGY SPECTRA AND THE EQUATION OF STATE OF SOLIDS AT
HIGH PRESSURES AND TEMPERATURES -U-
AUTHOR--(03)-VOROPINOV, A.I., GANDELMAN, G.M., PODVALNYY, V.G.
COUNTRY OF INFO--USSR
SOURCE--USP. FIZ. NAUK 1970; 100(2), 193-224
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ALUMINUM, IRON, SILVER, TITANIUM, POTASSIUM, CALCIUM, LEAD,
BIBLIOGRAPHY, HIGH PRESSURE EFFECT, PHYSICAL PROPERTY, QUANTUM
MECHANICS, TEMPERATURE EFFECT, ELECTRON ENERGY, SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/2001 STEP NO--UR/0053/70/100/002/0193/0224
CIRC ACCESSION NO--AP0118960
UNCLASSIFIED

2/2 044

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118960

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW WITH 37 REFS. THE QUANTUM MECH. THEORY, CALC. DATA ON ELECTRON ENERGY SPECTRUM, AND THE EQUATIONS OF STATE ARE DISCUSSED WHICH CAN BE USED TO CALC. THE CHANGE IN PROPERTIES OF CRYST. SOLIDS AT ANY PRESSURE AND TEMPS. BELOW 100,000DEGREES K. CALC. DATA ON THE PROPERTIES OF AL, FE, AG, TI, V, K, CA, AND PB ARE GRAPHED AND TABULATED FOR VARIOUS PRESSURES AND TEMPS.

UNCLASSIFIED