"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

Acc. Nr: AP0036618 Abstracting Service: CHEMICAL ABST. 4/70 Ref. Code: UR0366

Z

78301e Chemistry of dienes and their derivatives. III. Addition of tert-butyl chloride to 2,3-dichloro-1,3-butadiene. Synthesis of 1-alkoxy-2,3-dichloro-5,5-dimethyl-2-hexenes. Mkryan, G. M.; Kazaryan, R. A.; Zakaryan, R. P.; Kaplanyan, E. E. (Yses. Nauch.-Issled. Proekt. Inst. Polim. Prod., USSR). *Zh. Org. Khim.* 1970, 6(1), 25–6 (Russ). The reaction of $H_2C:CClCCl:CH_2$ with *tert*-BuCl at −20° in the presence of $AlCl_3$ gave good yields of $Me_3CCH_2CCl:CClCH_2Cl$ (I). When $ZnCl_2$ was used as the catalyst the reaction rate was slower and only 22% I was obtained. Oxidn. of I with $KMnO_4$ gave $(CO_2H)_2$ and $Me_3CCH_2CO_2H$. The reaction of I with ROH (R is Me, Et, Pr, Bu, or amyl) in alk. soln. gave 78.6–89.9% $Me_3CCH_2CCl:CClCH_2OR$ and ≤1%, $Me_3CCH:CClCCl:CH_2$.

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ACS

REEL/FRAME 19721472

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR UDC 621.646.4

BIRMAN, A. I., ZAKATOV, V. P., KOLOYDENKO, A. L., MASHBITS, A. V., and POTEPALOV, Yu. N., Central Scientific Research Institute of Large-Scale Automation and Special Design Office for Automation in Petroleum Refining and the Petrochemical Industry

"Pneumatic Long-Term Memory Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 28, 1971, p 199

Abstract: USSR Authors' Certificate No 315183 (Cl. G 06g 5/00), filed 4 January 1970, issued 21 September 1971, covers a pneumatic long-term memory device containing an oscillator and a cathode follower and two pulsating capacitances with a control and a working cavity in each, connected to the oscillator through contacts. In order to reduce temperature error, the control cavities of the capacitances, filled with a liquid with a low coefficient of temperature expansion, are interconnected through a contact; the working cavity of one capacitance is connected with the cathode follower input and with input and reference pressure sources through contacts; and the working cavity of the second capacitance is connected via contacts to the reference pressure source and the atmosphere.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

ZAKATOVA, N. V., and SHARPATYY, V. A., Institute of Chemical Physics Academy of Sciences USSR Moscow

"Mechanism of the Radiolysis of Aqueous Solutions of DNA"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 6, Oct 71, pp 1378-1381

Abstract: The basic processes of radiolytic breakdown of DNA in aqueous solutions are: depolymerization and decoding. This study was aimed at determining whether these processes could occur simultaneously and which radiolysis products are causing them. The radiolysis products were plotted as functions of the dose in DNA solutions of varying concentrations. The concentration functions of [NH_3] and [malonodialdehyde] (MDA) are very similar, following a plateau in the initial concentration range. The yield of deamination at high concentrations of DNA depends on the amount of dissolved oxygen. Studying the postradiational effects in DNA solutions, it was determined that MDA forms during the breakdown of cytosine and thymine hydroperoxides. In dilute DNA solutions the main input into the formation of MDA is due to the reaction of radiolysis products with 2-desoxyribose radicals bound to purine bases. In general about 50% of the deamination process is due to the OH, the other 50% are accounted for by O_2^-. In the course of this it was established that radioprotectors compete effectively for OH' with the biopolymer molecules.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

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UDC 621.373.826:550.3

GERMAN, A. I., SHULYAKOVSKIY, G. Ye., CHAYANOVA, E. A., GULYAYEV, G. A., ZHURAVLEV, V. F., ZAKATOVA, T. M., and KNYAZ'KIN, V. V.

"Investigating the Effect of the Atmosphere on the Propagation of Coherent Radiation With the Wavelength of λ = 10.6 Microns"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 179-183 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D581)

Translation: Results are given of experiments on the determination of the coefficient of attenuation in coherent measurements (wave of 10.6 microns) as it passes over the uniform ground surface in a range of about 8 km. The radiation source was a stabilized laser on an OKG-15 base, operating in single mode with an output power of 1.2-1.5 W. The radiation was modulated with a 1080 Hz frequency. A diagram of the relative angular distribution of the radiation was given, which permitted the divergence angle of the radiation and the zone of maximum signal level to be determined. All

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USSR

GERMAN, A. I., et al., V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl., "Nauka," 1972, pp 179-183

further measurements were made in this zone. The value of the attenuation factor is within the limits of 0.05-0.08 km^{-1} for clear weather, in the interval of 0.08-0.2 km^{-1} for light fog and drizzles, and in the range of 0.5-0.6 km for heavy downpours. The proposed method for relative measurements of the attenuation factor gives a measurement error one-half that obtained in the absolute method.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ABSORPTION OF AMMONIA FROM UREA PRODUCTION WASTE GASES -U-

AUTHOR-(05)-STRIZHEVSKIY, I.I., ZAKAZNOV, V.F., LEBEDEV, V.V., SIDORINA, I.YU., MELNIKOV, B.P.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,102

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

DATE PUBLISHED--26JAN70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMMONIA, UREA PRODUCTION, GAS ABSORPTION, FLAME EXTINCTION, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1743 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136984

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

2/2 019 UNCLASSIFIED

CIRC ACCESSION NO--AA0136984 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NH SUB3 IS ADSORBED FROM WASTE GASES CONTG. A COMBUSTIBLE H-O MIXT. BY WASHING OFF NH SUB3 UNDER PRESSURE IN AN ABSORBER WITH SIMULTANEOUS NEUTRALIZATION OF THE REMAINING DANGEROUSLY EXPLOSIVE MIXT. NEUTRALIZATION IS CARRIED OUT BY FILLING THE ENTIRE VOL. OF THE ABSORBER WITH A GRANULATED FILLING WITH DIMENSIONS OF FLAME EXTINGUISHING CANALS THAT SIGNIFICANTLY INCREASE THE CRIT. DIAMS. OF FLAME EXTINGUISHING IN CONCRETE CONDITIONS. A RASCHIG RING WITH DIAM. SMALLER THAN OR EQUAL TO 10 MM UNDER INITIAL ATM. PRESSURE IN THE ABSORBER OR A CORUNDUM FRACTION OF 1-2 MM UNDER AN INITIAL PRESSURE OF SMALLER THAN OR EQUAL TO 18 ATM IN THE ABSORBER IS USED AS THE GRANULATED FILLING. FACILITY: STATE SCIENTIFIC RESEARCH AND DESIGN INSTITUTE OF THE NITROGEN INDUSTRY.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/2 047

UNCLASSIFIED

TITLE--ELECTRICAL CONDUCTIVITY AND RADIATION OF A HIGH TEMPERATURE NITROGEN FLOW CONTAINING POLYDISPERSE MAGNESIUM AND ALUMINUM PARTICLES

PROCESSING DATE--30OCT70

AUTHOR-(05)-ZAKE, M., LEPIN, V., MELNIKOV, V.K., MILLERS, T., CIELENS, U.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, FIZ. TEH. ZINAT. SER. 1970, (2), 73-9

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ELECTRIC CONDUCTIVITY, NITROGEN, MAGNESIUM, ALUMINUM, GAS FLOW, METAL POWDER, NITRIDE, OXIDE, HIGH TEMPERATURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1339

STEP NO--UR/0371/70/000/002/0073/0079

CIRC ACCESSION NO--AP0121832

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

2/2 047 UNCLASSIFIED

CIRC ACCESSION NO--AP0121832 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC. COND., RADIATION, AND CHEM. COMPN. OF THE PRODUCTS FORMED FROM THE REACTION OF A HIGH TEMP. N FLOW WITH POLYDISPERSE PARTICLES OF MG AND AL AT 1200-3300DEGREESK WERE STUDIED. THE COND. OF THE N FLOW WITH MG AND AL PARTICLES STARTS INCREASING AT GAS TEMPS. OF 1600-1800 AND 2000DEGREESK, RESP. MG PARTICLES CHANGE THE ELEC. COND. OF THE FLOW WITH A DEPENDENCE SIMILAR TO THE EXPONENTIAL TYPE, WHEREAS AL PARTICLES SHOW A DEPENDENCE WITH A MAX. AT 2100 PLUS OR MINUS 100DEGREESK. THE CHARACTER OF THE CHANGE IN THE ELEC. COND. IS EXPLAINED ON THE BASIS OF EXISTING IDEAS ABOUT THE MECHANISM OF THE CHEM. REACTIONS OF MG AND AL WITH O. THE INTEGRAL RADIATION OF THE FLOW IS DETD. MAINLY BY THE CONCN. OF THE PARTICLES. THE PRINCIPAL PRODUCTS OF THE REACTION OF MG AND AL PARTICLES IN INDUSTRIAL N ARE OXIDES AND NITRIDES, AND THE AMTS. OF THESE COMPDS. ARE DETD. BY THE TEMP. OF THE FLOW. FACILITY: FIZ. ENERG. INST., RIGA, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC: 533.09.07

AUZINYA, L. K., ZAKE, M. V., MEL'NIKOV, V. K., and TSIYELENS, U. A.

"Phenomena of Emission from a Titanium Surface in Nonstationary Heating by an Argon-Air Current of a Low-Temperature Plasma"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR -- Seriya Fizicheskikh i Tekhnicheskikh Nauk, No 4, 1973, pp 53-62

Abstract: Earlier papers by the authors of the present article (e.g., M. V. Zake, et al, Izv. AN LatvSSR, ser. fiz. i tekhn. nauk, No 2, 1970, p 81) have established that the electrical conductivity and radiation characteristics of high-temperature, gas-dispersed currents with titanium particles are determined chiefly by the phase and chemical transformations of the particles. Since there is a need for more detailed study of the mechanisms involved, the processes are studied in the present paper on stationary models under low-temperature plasma conditions. The results are given of a combined study of electron emission and radiation from the surface of titanium plates under nonstationary heating by an argon-air current of a low-temperature plasma. For these experiments, a special measuring device was prepared, consisting basically of plane-parallel electrodes, with the titanium plate as cathode and a

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC: 533.09.07

AUZINYA, L. K., et al, Izvestiya Akademii Nauk Latviyskoy SSR -- Seriya Fizicheskikh i Tekhnicheskikh Nauk, No 4, 1973, pp 53-62

water-cooled copper plate as anode. Curves are plotted for the change in intensity of radiation from the surface of the titanium as a function of the heating time and of the temperature, for the changes in emission current as a function of the temperature, and for the work function of the surface as a function of the temperature. The results of the work function determination show that the kinetic emission at various stages of surface oxide formation must not be neglected in computations of the electrical characteristics of sputtering currents with metal particles.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC: 533.09.07

AUZINYA, L. K., LIYEPINYA, V. E., ZAKE, M. V., MEL'NIKOV, V. K., MEL'NIKOV, Vl. K., UNGURS, I. A., and TSIYELENS, U. A.

"Method of Complex Experimental Investigations of Thermophysical Processes in a Chemically Active Coaxial Plasma Jet With Ti Particles"

Riga, Izvestiya Akademii nauk Latviyskoy SSR, No 2, 1972, pp 60-68

Abstract: Very little attention is now being given to low-temperature plasma jets with dispersed particles. Consequently, the purpose of this paper is to give the results of complex experimental investigations into the coaxial jet of a low-temperature argon plasma with dispersed particles of Ti. Measurements are made of the gas-dynamic parameters of a single-phase jet, variations in the chemical composition of the dispersed particles from the characteristics of the two-phased jet are studied, the spectral and integral characteristics of energy losses through radiation are obtained, and the electrical conductivity of the jet flux is investigated. The experimental equipment, a diagram of which is given, consists of arc heaters, a coaxial nozzle, a device for introducing powders into the jet, and measuring instruments. Of the features of these experiments,

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR UDC: 533.09.07

AUZIKYA, L. K., et al, Izvestiya Akademii nauk Latviyskoy SSR, No w, 1972, pp 60-68

the most interesting is the chemical conversion of the Ti into compounds containing large quantities of nitrogen in the form of nitrides and oxynitrides.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC 615.372:576.851.551:577.23

GOLSHMID, V. K., and ZAKGEVM, D. A., Moscow Institute of Vaccines and Sera imeni Mechnikov

"Determination of the Size of Specific Molecules in Preparations of Tetanus Toxins and Toxoids"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71, pp 91-93

Abstract: In view of the fact that the purity of sera and vaccines depends on proper selection of the method of purification, and since according to some investigators, tetanus toxoids form polymers with sedimentation constants from 10.1 to 110 S when the concentration of proteins in the initial toxin solution is about 1%, an investigation was conducted to determine whether such polymers are formed when the toxins are prepared by standard industrial methods. The tests were done on toxins and toxoids of Kolle strains No 154 and 471 grown on casein. Toxicity was tested on white mice. Results obtained by gel-filtration revealed the presence of the tetanus toxin monomer with a molecular weight of 67,400, the tetanus toxin dimer with MW 140,000, and the tetanus toxoid dimer with MW 149,000; the respective Stokes' radii

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

GOLSHMID, V. K., et al, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71, pp 91-93

were 30, 48, and 51 angstroms. There were no polymers in the preparation. These findings may be useful in the selection of the most suitable purification method.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

Adsorption

USSR

UDC 66.074.396.22

SHRAMBAN, B. I., KSENZENKO, V. I., ZAKGEYM, A. YU., Moscow Institute of Fine Chemical Technology imeni. M. V. Lomonosov

"Sorption of Hydrogen Fluoride by AB-17 x 8 Anion-Exchange Resin from the Gas Phase"

Ivanovo, Izvestiya vysshikh uchebnykh zavedeniy, khimiya i khimicheskaya tekhnologiya, Vol XV, No 7, 1972, pp 1112-1114.

Abstract: A study was made of the sorption of HF by AB-17 x 8 anion-exchange resin from wet gases under laboratory conditions to obtain a mathematical description of the process. The Hartley plan with a nucleus quarter-replica type 2^{6-2} was used. The experiments were performed under dynamic conditions with the following independent variables: x_1 -- $\log C_{HF}$ where C_{HF} is the initial HF concentration in the gas, mg/ℓ ; x_2 -- experimental temperature, °C; x_3 -- moisture of the gas, %; x_4 -- gas velocity, m/sec; x_5 -- log d where d is the grain diameter of the ion-exchange resin in the tested fraction, mm; x_6 -- height of the ion-exchange resin layer, mm. The coding conditions and experimental matrix are presented in table form. The regression coefficients were calculated on a computer and the Student criterion was used to eliminate some of them. The regression equation obtained agrees with the

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

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SHRAMBAN, B. I., et al., Izvestiya vysshikh uchebnykh zavedeniy, Khimiya i khimicheskaya tekhnologiya, Vol XV, No 7, 1972, pp 1112-1114

theoretical effect of the wetness of the gas and the grain size of the resin on sorption. The absorption mechanism is explained according to the following formulas:

$$HF+ROH \rightleftarrows RF+H_2O,\quad RF+HF \rightleftarrows RHF_2,\quad RHF_2+nHF \rightleftarrows RHF_2\cdot(HF)_n,$$

where n is the index indicating the number of moles of HF not sorbed by the ion-exchange mechanism.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC 615.372:576.851.5517.012

GOLSHMID, V. K., and ZAKGEYM, D. A., Moscow Institute of Vaccines and Sera imeni Mechnikov

"Separation of the Toxic Component of Incompletely Detoxified Tetanus Toxin on DEAE-Cellulose"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971, pp 109-113

Abstract: Fractionation of partly neutralized tetanus toxins on DEAE cellulose showed that this is a promising method of decreasing the residual toxicity of the toxins. The tetanus toxins and toxoids under study were dissimilar in physical and chemical properties and were extracted with DEAE cellulose at fairly wide concentrations of the buffer solution, although the conditions of elution of these preparations with the ion exchanger were different. The substances responsible for the toxicity and antigenic activity of the toxins were mostly (over 90%) eluted with the buffer at 0.05 M concentration of sodium chloride. The bulk of the antigenic substance of the crude toxoids was extracted at 0.2 M concentration of sodium chloride, only a slight amount at 0.3 and 0.5 M NaCl. The differences in degree of sorption on the DEAE cellulose of the specific antigens of tetanus toxins and toxoids were due to differences in their electric charge.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--THE TECHNIQUE OF ISOLATING TETANUS HEMOLYSIN AND STUDY OF SOME OF ITS PROPERTIES -U-

AUTHOR-(02)-GOLSHMID, V.K., ZAKGEYM, D.A.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 5, PP 116-118

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TETANUS, GEL, FILTRATION, TOXIN, HEMOLYSIN, ERYTHROCYTE, HEMOGLOBIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0209 STEP NO--UR/0219/70/069/005/0116/0118

CIRC ACCESSION NO--AP0120907

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

2/2 027 UNCLASSIFIED

CIRC ACCESSION NO--AP0120907 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GEL FILTRATION ON COLUMNS WITH SEPHADEX G-100 WITH THE RATIO OF THE HEIGHT TO THE DIAMETER FROM 25 TO 1 TO 87.5 TO 1 ENABLED TO ISOLATE TETANUS HEMOLYSIN AND NEUROTOXIN. THE ADMINISTRATION OF PURIFIED TETANUS HEMOLYSIN TO RABBITS DID NOT CAUSE MANIFESTATIONS OF TETANUS, BUT RESULTED IN A REDUCTION OF THE QUANTITY OF ERYTHROCYTES AND HEMOGLOBIN IN THE BLOOD. THE SEDIMENTATION COEFFICIENT OF HEMOLYSIN COMPRISED 3.22S, THE MOLECULAR WEIGHT ACCORDING TO GEL FILTRATION DATA, 55,000-60,000. THE PH OPTIMUM, TEMPERATURE COEFFICIENT AND INFLUENCE OF SOME CHEMICAL SUBSTANCES ON THE ACTIVITY OF HEMOLYSIN WERE DETERMINED. FACILITY: MOSCOW INSTITUTE OF VACCINES AND SERA.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC 669.168:669.162.2

RYABCHIKOV, I. V., GARYAYEV, S. G., PODOL'SKIY, T. V., ALEKSANDROV, A. P., and ZAKHARCHENKO, E. V.

"Silicothermal Method for Obtaining Ferrosilicocalcium and Magnesium Alloys Based on It"

Moscow, Stal', No 2, Feb 71, pp 134-136

Abstract: This paper describes experiments performed in making alloys of ferrosilicocalcium and magnesium by the silicothermal method, which has the advantages of permitting the mechanization and automation of alloying processes in closed furnaces. The experiments were performed in an electric furnace of 1200 kVA power and a closed furnace of the SKB-6063 type at voltages of 60-85 and 89 volts respectively, and a current of 6.5 and 13 kA. The furnace charge was 65-75% ferrosilicates, lime, calcined dolomite, baryte ore, silicoaluminum production slag, and fluorspar. The experimental alloys showed that the concentration of magnesium and calcium in the melt depends primarily on the proportion of the charge components, the order in which they are loaded into the furnace, the electrical specifications, and the amount of electrical energy consumed per ton of charge. 1/2

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

RYABCHIKOV, I. V., et al, Stal', No 2, Feb 71, pp 134-136

A diagram showing a device for introducing the magnesium into the molten metal is given.

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USSR

UDC 546.824-31'42'1539.23:537.226

BULGAKOV, N. A., DUDKEVICH, V. P., BONDARENKO, V. S., ZAKHARCHENKO, I. N., and FESENKO, YE. G., Rostov State University

"Structure and Certain Dielectric Properties of Strontium Titanate Thin Films Produced by Cathode Sputtering"

Moscow, Neorganicheskiye Materialy, Vol 9, No 10, Oct 73, pp 1833-1834

Abstract: Strontium titanate (ST) films, 1-12 microns thick, were produced on titanium substrates by cathode sputtering. From this experimental work the optimum mode of ST film formation was selected: 900 v, 80 ma, residual air pressure of 0.6 mm Hg, distance between anode and cathode -- 12 c, distance between cathode and substrate -- 6 mm, and coating rate -- 0.2 micron/hour. It was determined that the dielectric strength of ST films in a constant filed amounts to about 500 kv/cm which is higher than for volume ceramic samples for which this value does not exceed 100 kv/cm. One figure, three bibliographic references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

ZAKHARCHENKO, N. Ye.

UDC 551.5:947.08:[971.3]

HYDROMETEOROLOGISTS OF LATVIA IN THE SERVICE OF THE NATIONAL ECONOMY OF THE REPUBLIC

[Article by Head of the Administration of the Latvian SSR Hydrometeorological Service N. Ye. Zakharchenko; Moscow, Meteorologiya i Gidrologiya, Russian, No. 12, 19[illegible], submitted 14 July 1972, pp 121-126]

The development of scientific research at the Latvian SSR Hydrometeorological Service and the hydrometeorological servicing of the national economy of Latvia are reported.

In spite of the significant dimensions and apparent uniformity of its geographic conditions, the Latvian landscape is distinguished by variety. Its territory is cut by a dense river network. More than 20,000 rivers with a total extent of more than 50,000 km carry their water to the Baltic Sea. The swamp area is about 10 percent of all the dry land, forests make up 41 percent, and there are more than 3,000 lakes. The comparatively low Kurzemskaya highlands in the west and Vidzemskaya highlands in the east of the republic are separated by the Zemgal'skaya lowland. The characteristic features of the geographic conditions, natural resources and also the all-union distribution of productive forces are determining the multibranch development of the Latvian economy the basic areas of which are agriculture, fishing, hydroelectric power, shipping, forestry and logging. In the republic, air, railroad and motor vehicle transportation and the chemical and lumbering industries have received wide development.

The specific requirements of each branch of the economy imposed on hydrometeorology, the necessity of the scientifically based distribution of productive forces, determination of the structure of the national economy and large-scale economic measures are requiring knowledge of the regional hydrometeorological conditions.

Accordingly, the necessity for organizing hydrometeorological observations and operations, the necessity for information about the actual and expected hydrometeorological conditions, warnings of dangerous and especially dangerous hydrometeorological phenomena, regional research and generalization of natural observations -- these create the prerequisites for the formation of a state hydrometeorological service.

JPRS 58133
27 Feb 73

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC 539.32+537.311.33

BRYUKHANOV, A. A., VASYLIV, V. I., and ZAKHARCHENKO, I. G.,
Odessa State Pedagogical Institute; Chair of Physics.

"Texture and Anisotropy of Titanium Sheet Properties"

Ordzhonikidze, Tsvetnaya Metallurgiya, No 2, 1973, pp 161-163

Abstract: The correspondence between data of roentgenostructural analysis, the measuring of elastic properties, and the anisotropy of electric resistance was experimentally investigated on Ti sheet brand VTI-1. Ti sheet was found anisotropic both in relation to electric resistance and also in relation to Young modulus, while ρ and E have minimum values in the direction of rolling and maximum values in cross sectional direction. The experimentally determined dependences of Young modulus E and of the specific electric resistance on the direction in the sheet plane of titanium VTI-1 are in agreement with two functions, indicating that the curves $\rho(\beta)$ and $E(\beta)$, where β angle between the projection of the [0001] axis on the investigated plane and the direction of measuring, change monotonously in simultaneously passing through maximum and minimum. The symmetry of $\rho(\beta)$ and $E(\beta)$ curves relative to the rolling direction of the Ti sheet indicates that the hexagonal prism of the crystal, during rolling, must incline to the right and to the left relative to the rolling direction. The measuring of anisotropy of the specific electric resistance and of the Young modulus more exactly defines the x-ray structural analysis results. One figure, three formulas, seven bibliographic references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC: 518.5:681.3.06

ZAKHARCHENKO, O. Ye., KOSTYUK, E. N.

"Standard Program for Solution of a System of Ordinary Differential Equations by the Adams Method With Iterations (Successive Approximation by Euler's Criterion). In M-20 Computer Codes"

V sb. Mat. obespecheniye avtomatizir. sistem proyektir. elektro- i radiotekhn. ustroystv. Vyp. 1 (Software in Systems for Automated Design of Electrical and Radio Equipment--collection of works, No 1), Kiev, 1970, pp 207-231 (from RZh-Matematika, No 11, Nov 71, Abstract No 11V848)

Translation: The paper describes the mathematical formulation of a problem, the method of solution, blocks of a standard program in M-20 computer codes, and the sequence of operation with the program. V. Mikheyev.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC: 581.5:681.3.06

KOSTYUK, E. N., ZAKHARCHENKO, O. Ye.

"Standard Program for Solving a System of Ordinary Differential Equations by the Adams Method With Iterations (Dispersal by Euler's Formula). In M-20 Computer Codes"

V sb. Mat. obespecheniye avtomatizir. sistem proyektir. elektro- i radio-tekhn. ustroystv (Software for Automating Systems for Design of Electronic and Radio Equipment), vyp. 1, Kiev, 1970, pp 207-231 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V848)

Translation: The paper describes mathematical formulation of the problem, the method of solution, the elements of the standard program in M-20 computer codes, and the sequence of operation with this program. V. Mikheyev.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC: 621.372.412

VOROB'YEV, Yu. V., ZAKHARCHENKO, V. N., TRETYAK, O. V.

"Investigation of Birefringence at Piezoresonence in GaAs Crystals"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 11, Nov 72, pp 2349-2353

Abstract: An alternating electric field was used to excite piezoresonance in gallium arsenide crystals placed between two polaroids. The light flux passing through the crystal and polaroids was found to be modulated by a frequency equal to that of the mechanical oscillations, or else double or quadruple this vibration frequency, depending on the amplitude of the oscillations and the mutual orientation of the polaroids. The results are analyzed on the basis of present concepts concerning the linear electro--optical effect and photoelasticity. The distribution of elastic stresses in the crystal is found for various excitation frequencies. The ratio between primary and secondary electro-optical effects in gallium arsenide is determined. The Q of the piezoelectric resonator is measured with respect to the percentage modulation of the oscillations excited by the resonance frequency field modulated by a low frequency signal. It is shown that modulation of the light beam passing through the crystal is due to nonhomogeneity of the specimen.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC: 621.315.592

AGEKYAN, V. T., ZAKHARCHENYA, B. P., IL'IN, V. V., SEYSYAN, R. P., STEPANOV, Yu. A., and SHIRYAPOV, I. P.

"Exciton Magnetic Absorption in SnO_2 Monocrystals"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1924-1930

Abstract: This article is in the nature of a recapitulation of experimental work on the absorption spectra of various materials in a magnetic field, with the accent on prior papers published by the authors named above. Recent experiments in the spectroscopic examination of germanium testifying to the exciton origin of magnetic absorption oscillations are cited. The authors of the present paper, however, list a number of reasons for using SnO_2 in such experimentation for a magnetic field of more than 10 kOe, arguing that it is uniquely suited for clarifying the role of Coulomb interaction in magnetic absorption oscillation spectra. Referring to an experiment described in an earlier paper they published (Agekyan, V. T., et al, PTE, 2, 182, 1972), using a pulse electromagnet, a liquid helium cryostat, an ISSh-500 pulse lamp, and a DFS-8 spectrograph, they reproduce the basic result of that

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

AGEKYAN, V. T., et al, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1924-1930

UDC: 621.315.592

experiment -- a plot of the positions of absorption maxima in the SnO_2 spectrum as a function of the magnetic field intensity.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC 621.315.592

SEYSYAN, R. P., ABDULLAYEV, M. A., ZAKHARCHENYA, B. P.

"Exciton Structure of the Fundamental Absorption Edge and Oscillating Magneto-absorption in Gallium Arsenide Crystals"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 408-410

Abstract: A study was made of the structure of the fundamental absorption edge in "pure" gallium arsenide and obtaining the oscillating magnetoabsorption spectrum in it. The applicability of the conclusions of the role of exciton states in the formation of the spectrum drawn earlier when studying germanium crystals [R. P. Seysyan, et al., FTP, No 2, 1266, 1968; R. P. Seysyan, Author's Review of Candidate's Dissertation, Leningrad, 1969] was investigated. Epitaxial n-type GaAs crystals having a free carrier concentration on the order of $n \approx 10^{14}$ cm^{-3} and $\mu_{77°K} = (60-100) \cdot 10^3$ cm^2/volt-sec were used in the investigation. A figure is presented showing the absorption coefficient as a function of the photon energy for GaAs crystals at different temperatures in the coordinates $(Kh\nu)^2$-$h\nu$ rectifying the root dependence on energy characteristic of direct allowable transitions. In addition to the first sharp peak observed previously in gallium arsenide at low temperatures, a weak peak ~3.5 milli-electron volts from the other is observed. One obvious peak not observed

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

SEYSYAN, R. P., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 408-410

earlier was found at room temperature. At energies exceeding the energy of the first peak by 40-50 millielectron volts, the experimental points lie on the straight lines

$$(Kh\nu)^2 = A^2(T)[h\nu - \varepsilon_g(T)],$$

where $A_{4.2°K} \simeq A_{77°K} \simeq 1.12 \cdot 10^5$, $A_{300°K} \simeq 1.02 \cdot 10^5$ electron volts$^{1/2}$/cm, and ε_g is 1.430 $\pm$ 0.001 electron volts at 300° K, 1.513 $\pm$ 0.001 electron volts at 77° K and 1.521 $\pm$ 0.001 electron volts at 4.2° K. The data are compared with experiments performed by various authors earlier.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--POLAROGRAPHIC DETERMINATION OF NITRATE ION IN PHOSPHORIC ACID AND ITS SALTS -U-

AUTHOR-(03)-TRUKHACHEVA, V.A., ZAKHARCHUK, N.F., YUDELEVICH, I.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. SIB. OTD. AKAD. NAUK SSSR, SER. KHIM. NAUK 1970, (1), 157-60

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NITRATE, PHOSPHORIC ACID, POLAROGRAPHIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/1002 STEP NO--UR/0289/70/000/001/0157/0160

CIRC ACCESSION NO--AP0138030

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

2/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138030

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A 1-G SAMPLE WAS MIXED WITH 6 ML OF H SUB2 SO SUB4, 1 ML OF A SOLN. OF 2,6,XYLENOL IN HOZC (1.2208 G IN 100 ML), AND 3 ML H SUB2 O, AND HEATED ON THE WATER BATH FOR 15 MIN. THE SOLN. COOLED, TRANSFERED TO THE POLAROGRAPHIC CELL, AND FREED OF O BY N BUBBLING, AND THE CATHODIC WAVE WAS RECORDED FROM MINUS 0.3 TO MINUS 0.7 V VS. MERCURIC SULFATE ELECTRODE. CL DOES NOT INTERFERE. THE SENSITIVITY WAS 10 PRIME NEGATIVE 4PERCENT, THE VARIATION COEFF. WAS LESS THAN 6PERCENT. FACILITY: INST. NEORG. KHIM., NOVOSIBRISK, USSR.

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6-73

ZAKHARENKO, A.K.

II-7. DISTRIBUTION OF THE RELATIVE SUPERSATURATION OF THE VAPOR PHASE ALONG THE DEPOSITION ZONE WHEN GROWING MONOCRYSTALLINE FILMS OF $A^{II}B^{VI}$ COMPOUNDS UNDER CONDITIONS CLOSE TO EQUILIBRIUM

[Article by G. A. Kravchin, A. K. Zakharenko, V. V. Tokmakov, A. V. Vanyukov, Moscow; Novosibirsk, III Simpozium po Protsessam Rosta i Sintezu Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 17]

An experimental method of determining the deviation of the system from the equilibrium state during growth of monocrystalline films of $A^{II}B^{VI}$ compounds under conditions close to equilibrium has been developed. The method takes into account the interaction of two processes which are opposite in direction and which take place during growth of the films -- deposition and etching.

The ratio of the maximum possible deposition rate $|v_{dep}|$ to the etching rate $|v_e|$ is taken as the relative supersaturation of the vapor phase $|\gamma|$; that is, $\gamma = v_{dep}/v_e$. The resultant growth rate of the film $|v_g|$ is equal to the difference in the deposition and etching rates. Consequently, $\gamma = 1 + v_g/v_e$.

Thus, in determining the magnitude of the relative supersaturation of the vapor phase at any point of the deposition zone it is necessary first to obtain the temperature dependence of the etching rate for the specific technological growth process.

The given method was used when studying the mechanism of formation of monocrystalline films of $A^{II}B^{VI}$ compounds for the gas transport method of growth.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

Industrial

USSR

UDC 621.791.1

ZAKHARENKO, I. D., Novosibirsk

"Critical Conditions for Explosive Cladding"

Novosibirsk, Fizika goreniya i vzryva, Vol 8, No 3, 1972, pp 422-427

Abstract: A study is made of the significance of the thermal processes and thermophysical properties of materials in the mechanism of the formation and destruction of a welded joint in the case of explosive cladding of homogeneous materials. Experiments were performed on laboratory specimens of St. 3 150 × 70 mm. The results are plotted to define the welding range of St. 3+ St. 3 for a thickness of 5.5 + 5.5 mm. Three regions on the curves are discussed: I characterized by low collision rates of the plates and failure to obtain joining, II where joining takes place and III where joining again fails to take place. The existence of the III region is explained and the upper limit of welding of homogeneous materials are calculated. A hydrodynamic pressure model of the process is described, and the time of arrival of tensile stresses in the weld is calculated. Under other equal conditions for the materials, the upper welding limit will be higher (the welding zone will be broader) in materials with higher thermal conductivity and heat capacity inasmuch as the weld solidification time will be less for them. With a proportional increase

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USSR

ZAKHARENKO, I. D., Fizika goreniya i vzryva, Vol 8, No 3, 1972, pp 422-427

in thickness of the welded plates the upper welding limit will shift downward inasmuch as the weld solidification time is proportional to the square of the thickness, and the welding time is proportional to the thickness.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

ZAKHARENKO, N. I., and BERNASOVS'KA, E. P., Kiev Scientific Research Institute of Epidemiology, Microbiology, and Parasitology, Kiev

"The Nitrogenous Base Composition of DNA of Leptospira Strains Belonging to Different Serum Groups"

Kiev, Mikrobiologicheskiy Zhurnal, Vol 33, No 6, Nov/Dec 71, pp 753-754

Abstract: The DNA nucleotide composition was determined of the following strains of Leptospira: two pathogenic strains (pomona and bataviae), two saprophytic strains (standard strain DSh and strain Voda isolated from the water of a pond), and two strains (kazachstanica and semaranga) which require further systematization. The nucleotide composition of the DNA isolated by the phenol method was determined by ascending paper chromatography. The quantitative determination of nucleotides was carried out spectrophotometrically. The content of guanine (G), adenine (A), cytosine (C), and thymine (T), the DNA specificity coefficient (G+C)/(A+T), the (G+T)/(A+C) ratio, and the purine/pyrimidine base ratio were determined. All Leptospira strains were of a pronounced AT type. (G+C)/(A+T) was 0.6, 0.6, 0.51, 0.54, 0.61, and 0.57 for BSh, Voda, pomona, bataviae, kazachstanica, and semaranga, respectively. Determinations were also carried out of DNA of serological

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USSR

ZAKHARENKO, N. I., and BERNASOVS'KA, E. P., Mikrobiologicheskiy Zhurnal, Vol 33, No 6, Nov/Dec 71, pp 753-754

variants of the semaranga and pomona strains obtained by prolonged passaging through media that contained homologous immune serum. (G+C)/(A+T) increased to 0.72 and 0.63 for the semaranga and pomona variant, respectively, because of replacement of AT by GC pairs.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

DEMIKHOVS'KA, A. A., ZAKHARENKO, N. I., ZARYTS'KYY, A. M., and MEDNYK, M. R., Kiev Scientific Research Institute of Epidemiology, Microbiology, and Parasitology, Kiev

"Comparative Study of the Nucleotide Composition of DNA of Salmonella typhi Strains of Different Phage Types"

Kiev, Mikrobiologicheskiy Zhurnal, Vol 33, No 6, Nov/Dec 71, pp 751-752

Abstract: The nucleotide composition of DNA of S. typhi of the phage types A, F_1, D_1, D_6, C_1, and Imperfect (of an unknown phage type) was studied. Isolation of DNA was carried out by the Kirby-Georgiyev phenol method modified by Demikhovs'ka. The nucleotide composition was determined chromatographically. The content of guanine (G), adenine (A), cytosine (C), and thymine (T) and the DNA specificity coefficient GC/AT were determined. There were no significant differences in the content of individual nucleotides between strains of the same phage type. The content of GC [G + C] was 53.4, 52.7, 55.2, 56.7, 55.1, and 54.6 percent for A, F_1, D_1, D_6, C_1, and Imperfect, respectively. GC/AT was 1.15, 1.13, 1.23, 1.32, 1.23, and 1.20 for A, F_1, D_1, D_6, C_1, and Imperfect, respectively. Statistically valid differences were established only for D_1 and D_6, the DNA guanine content of which differed from that found for the

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USSR

DEMIKHOVS'KA, A. A., et al., Mikrobiologicheskiy Zhurnal, Vol 33, No 6, Nov/Dec 71, pp 751-752

other phage types. This was reflected in the high GC/AT value for D_6. One may assume that the differences shown by D_1 and D_6 were due to the presence of the corresponding phages (d_1 and d_6) in the nuclear apparatus of S. typhi of these phage types.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/2 013

UNCLASSIFIED

TITLE--A STUDY OF GASLESS VARIANT OF S. PARATYPHI B AND ITS EPIDEMIOLOGICAL SIGNIFICANCE -U-

PROCESSING DATE--16OCT70

AUTHOR-(04)-KRASYUK, L.S., ZARITSKIY, A.M., DEMIKHOVSKAYA, A.A., ZAKHARENKO, N.I.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5, PP 69-71

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SALMONELLA PARATYPHI, EPIDEMIOLOGY, RIVER WATER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0092

STEP NO--UR/0016/70/000/005/0069/0071

CIRC ACCESSION NO--AP0114488

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

2/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114488

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED 23 STRAINS OF PARATYPHOID B MICROBES WHICH FAILED TO FORM ANY GAS ON THE MEDIA WITH CARBOHYDRATES AND MULTIATOMIC ALCOHOLS. THESE STRAINS WERE ISOLATED FROM THE PATIENTS INFECTED BY DRINKING RIVER WATER. BIOCHEMICAL ACTIVITY AND PATHOGENICITY OF THESE STRAINS FAILED TO CHANGE AFTER PASSAGE ON NUTRIENT MEDIA AND THROUGH THE ORGANISM OF MICE FOR 3 YEARS (OBSERVATION PERIOD). IN STUDYING THE NUCLEOTIDE COMPOSITION OF DNA OF GAS FORMING AND GASLESS VARIANTS OF S. PARATYPHI B THE AUTHORS FAILED TO FIND ANY STATISTICALLY SIGNIFICANT DIFFERENCES BETWEEN THE COEFFICIENTS OF THEIR SPECIFICITY AND ALSO BETWEEN THE CONTENT OF INDIVIDUAL NITROGEN BASES. APPARENTLY, THE CAUSE OF THE CHANGES OF BIOCHEMICAL PROPERTIES OF S. PARATYPHI B RESULTING FROM THE STAY OF THE MICROBE IN WATER SHOULD BE SOUGHT IN ALTERATION OF THEIR ENZYMATIC COMPOSITION. FACILITY: KIEV INSTITUT EPIDEMIOLOGII MIKROBIOLOGII I PARAZITOLOGII.

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ZAKHARENKO, S. YE.

Zakharenko, S. Ye.

ORG: None

Deceased 1967

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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/FRAME--2000/1697 STEP NO--UR/0394/70/008/002/0120/0122

CIRC ACCESSION NO--AP0125318

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

2/2 011 UNCLASSIFIED

CIRC ACCESSION NO--AP0125318 PROCESSING DATE--30OCT70

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 POTATO 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.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC 771.537:621.33

ZAKHARENKOV, B. F., Candidate of Sciences, PAVLYUCHUK, V. A., Candidate of Sciences, and FILIMONOV, R. P.

"Equipment for Measuring the Wiener Spectra of Photographic Noises"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 9, Sep 73, pp 62-63

Abstract: A block diagram is presented of an installation for measurement of the Wiener spectra of photographic noises. This device was constructed on the basis of articles published by the authors in Numbers 2 and 3, 1972, of the same journal. The equipment is described in detail, together with the manner of its operation. This unit is also suitable for the measurement of average regular values of the transmission factor, and for the measurement of mean-square fluctuations of values of the transmission factor of the analyzed specimens. 1 figure. 2 references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC 620.193.4:669.295

TSINMAN, A. I., PISCHIK, L. M., BRUSENTSOVA, V. M., ZAKHARENKOVA, L. Ye.

"Influence of Water and Oxidizers on Electrochemical and Corrosion Behavior of Titanium in Acetic-Acid Media"

Moscow, Zashchita Metallov, No 5, Sep-Oct, 1972, pp 567-569.

Abstract: Studies of the corrosion of titanium in aqueous solutions of acetic acid were performed using type VT-1 titanium. Titanium is not passivated in water-free acetic-acid solutions. The corrosion rates in 1 n. acetic-acid solutions of sodium acetate, determined by extrapolation of the linear sectors of the anode and cathode curves, indicate that titanium has good corrosion resistance in water-free acetic-acid solutions when no oxidizers are present, even at the boiling point. When the water content is over 0.02% in boiling acetic-acid solutions, titanium can be passivated. In the presence of water, titanium is spontaneously passivated in deactivated acetic-acid solutions. Addition of oxidizers to boiling solutions containing less than 0.1% water may shift the potential of titanium to the area of anode activation of the surface. With high water concentrations, titanium is stable in acetic-acid solutions both with and without oxidizers.

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USSR

UDC 669.15'24-194:539.2191.3

ZEMSKIY, S. V., GRIGORKIN, V. I., ZAKHARENKOVA, V. I., and KUKUSHKINA, V. N., Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin, Lipets Branch of the Moscow Institute of Steel and Alloys

"Diffusion of Carbon in Ferro-Nickel Steels of Different Composition"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 10, 1972, pp 115-118

Abstract: The diffusion of carbon was investigated on welded pairs of ferro-nickel steel with a Ni content corresponding to extreme concentrations possible in inverse martensitic transformation of low-carbon (0.06% C) steels with 10% Ni and medium-carbon (0.38% C) steels with 18% Ni. The diffusion pairs were prepared from cubic steel specimens into which the radioactive isotope C^{14} was introduced. A method was developed of determining the diffusion coefficients of inclusion admixtures in the three-component system with distinct diffusion coefficients in each half of the welded specimen. The coefficients of carbon diffusion were specified in alloys with 0.38% C and 9, 18, and 27% Ni and in alloys with 0.006% C and 5, 10, and 15% Ni. The temperature dependences of the diffusion coefficient of carbon in Fe-Ni alloys in γ-solid solution were determined. Four figures, ten formulas, five bibliographic references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC: 669.15-194:621.785.2

GRIGORKIN, V.I., KOROTUSHENKO, G.V., KAZADZHAN, L.B., and ZAKHARENKOVA, V.I., Lipetsk Branch, Moscow Institute of Steel and Alloys

"Stabilization of Residual Austenite and the Irreversible Friability in Chrome and Nickel Steels"

Moscow, Izvestiya VUZ -- Chernaya Metallurgiya, No 8, 1971, pp 150-152

Abstract: The results are given of an investigation into the effects of chromium, nickel, and carbon individually on the kinetics of austenite stabilization in steels with various combinations of C, Cr, Ni, Si, Mn, and Ti. There are seven such alloys, and a table of the chemical composition of each is given. The alloys were made in an induction oven, were homogenized for 20 hours at 1200° C, and were forged into ingots weighing 10 kg, which were then roasted. Stabilization kinetics were investigated in dilatometric specimens which were supercooled until the formation of 70% martensite and were then once more heated to 230-450° C and held at that temperature for an hour. The austenization temperature was 980° C. The amount of austenite and martensite were estimated from the curve plotted on a Kantor dilatometer. It was found that the degree of austenite stabilization increased

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USSR

UDC: 669.15-194:621.785.2

GRIGORKIN, V. I., et al, Izvestiya VUZ--Chernaya Metallurgiya, No. 8, 1971, pp 150-152

with an increase in the quantity of martensite; hence a structure of 70% martensite and 30% austenite was chosen for the initial analysis. The degree of residual austenite stabilization was determined from the formula $Q = (n - n')/n$, where Q is the degree of stabilization, expressed in % form, n is the quantity of residual austenite, fixed before the temperature stabilization, and n' is the quantity of residual austenite converted to martensite when cooled to room temperature after the temperature stabilization. Experiments made to check the assumption that the interconnection between the stabilization of the residual austenite and the friability can be attributed to the same cause are described. The nature of this cause is not completely clear. Curves are given for the degree of stabilization of the residual austenite as a function of the tempering temperature for the various steel alloys.

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USSR UDC 612.015.32+612.273

ZAKHAREUSKI, A. S., TAMARYNA, N. Z., and LYSTSOVA, G. V.

"Carbohydrate-Phosphorus Metabolism in Hypoxia and Under the Influence of N,N-diethylaminoethylamid of p-Chlorophenoxyacetic Acid"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Biologicheskikh Nauk, No 1, 1971, pp 88-92

Abstract: Hypoxia was induced in white rats by ligation of the trachea. The rats were then frozen in liquid nitrogen, and the brain and liver were extracted and examined for adenosine triphosphate content, creatine phosphate, inorganic phosphorus, lactic acid, glucose, and glycogen. The examinations established that under the influence of hypoxia, the brain and liver content of adenosine triphosphate, creatine phosphate, glucose, and glycogen is decreased, and that of lactic acid and inorganic phosphorus is increased. The prophylactic administration of N,N-diethylaminoethylamid of p-chlorophenoxyacetic acid (IEM-455), an antihypoxia preparation synthesized in the Laboratory of the Synthesis of Medicinal Preparations at the Institute of

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ZAKHAREUSKI, A. S., TAMARYNA, N. Z. and LYSTSOVA, G. V., Izvestiya Akademii Nauk BSSR, Seriya Biologicheskikh Nauk, No 1, 1971, pp 88-92

Experimental Medicine of the Academy of Medical Sciences USSR by N. A. Zakharova, in a dose of 1/4 LD_{50} at different periods prior to the development of hypoxia prevented to a considerable degree the development of the carbohydrate-phosphorus metabolic disorders normally induced by hypoxia.

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USSR UDC 669.295.05

VASYUTINSKIY, N. A., LYSTSOV, A. I., ZAKHAREVICH, A. A., and SIDORENKO, A. P.

"Certain Features of Chlorinating Lump Titanium Slag"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 41-47

Translation: It is established that during chlorination of lump titanium slag, a solid, gas-proof layer of rutile is formed which slows down the chlorination reaction. The kinetic curves of chlorinating lump titanium slag are characterized by the presence of an autocatalytic period. It is suggested that the cause of the autocatalysis is the increase in the reaction surface through the development of microcracks in the lumps of titanium slag. Three illustrations and eight bibliographic entries.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC 669.295.046.43

VASYUTINSKIY, N. A., LYSTSOV, A. I., ZAKHAREVICH, A. A., and SIDORENKO, A. P.

"Some Specifics of Chlorination of Chunk Titanium Slag"

Sb. tr. Vses. n.-i. i proyektn. in-t titana, [Collected works of All-Union Scientific-Research and Planning Institute for Titanium], 6, 1970, 41-47, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No.1 G179 by the authors).

Translation: During chlorination of chunk Ti-slag, a dense, gas-impermeable layer of rutile is formed, which retards the chlorination reaction. The kinetic curves for chlorination of chunk titanium slag show an autocatalytic period. It is assumed that the reason for the autocatalysis is an increase in the reaction surface resulting from development of microfissures in the chunks of Ti-slag. 3 figures; 8 biblio. refs.

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USSR UDC: 621.317.733.011.4

AGAPOVA, N. A., ZAKHAREVICH, Yu. I.

"An Instrument for Measuring Capacitance on High Frequencies"

Elektron. tekhnika. Nauchno-tekhn. sb. Kontrol'no-izmerit. apparatury (Electronic Technology. Scientific and Technical Collection. Monitoring and Measuring Equipment), 1970, vyp. 2(20), pp 45-48 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A376)

Translation: The authors study one of the possible circuit designs for an automatic digital bridge used for measuring the capacitance of condensers. The bridge combines the method of discharge balancing with the method of scanning balancing. Problems of speed and stability of operation are considered. A block diagram of a working model of the instrument is given. Resumé.

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USSR

UDC: 519.2

YEZHOV, I. I., ZAKHARIN, A. M.

"Concerning a Class of Controllable Random Walks With a Boundary"

Kiev, Upravlyayemyye sluchayn. protsessy i sistemy--sbornik (Controllable Random Processes and Systems--collection of works), 1973, pp 205-221 (from RZh-Kibernetika, No 5, May 73, abstract No 5V100 by the authors)

Translation: Various schemes for control of whole-number Markov processes are considered. The problem is solved for a linear and a nonlinear object by using the stochastic principle of the maximum. The resultant solution corresponds to a local criterion -- maximizing the derivative of a functional at the elapsed time. A comparison is made with a terminal equation for the same conditions. Examples are given.

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USSR UDC 547.244+547.241

KAZANTSEV, A. V., ZHUBEKOVA, M. N., and ZAKHARKIN, L. I.

"Synthesis and Some Conversions of Substituted o-Carboranylphenylchlorophosphines and Bis(o-Carboranyl)chlorophosphines"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2027-2033

Abstract: Described are the synthesis and conversions of the phosphorus derivatives of o-carboranes, including substituted o-carboranylphenylchlorophosphines (I), o-carboranylphenylphosphines, bis(o-carboranyl)-chlorophosphines II, bis(o-carboranyl)phosphines, o-carbonylphenylphosphinic and thiophosphinic acid chlorides (III) and esters of o-carbonylphosphinous acids (IV). The rearrangements of compounds I, II, III and IV are presented, the reactions of all intermediate compounds described and the considerable differences in stability, reactivity and other properties are given.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/2 018 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--THE INFLUENCE OF NICOTINE ON THE ORIGIN OF AUDIOGENIC CONVULSIONS IN ANIMALS OF DIFFERENT AGE -U-

AUTHOR--ZAKHARIYA, YE.A., ZAPADNYUK, V.I.

COUNTRY OF INFO--USSR

SOURCE--BYUULLETIN'EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 3, PP 24-25

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RAT, MOUSE, ACOUSTIC EFFECT, DRUG EFFECT, AKLALOID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0847 STEP NO--UR/0219/70/069/003/0024/0025

CIRC ACCESSION NO--AP0052281

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

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CIRC ACCESSION NO--AP0052281

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN RATS AND MICE NICOTINE INCREASES THE CONVULSIVE RESPONSE, THIS LEADING TO INTENSIFICATION AND ACCELERATION OF AUDIOGENIC CONVULSIONS. THE DEGREE OF MARKEDNESS OF CONVULSIVE RESPONSE WAS MOST PRONOUNCED IN YOUNG AND IMMATURE AND OLD RATS AND MICE. GUINEA PIGS ARE RESISTANT TO THE EFFECT OF SOUND STIMULI.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR UDC 612.35.014-482

ZAKHARIYEVA, Z. and BYRZEVA, L., I. P. Pavlov Higher Medical Institute, Plovdiv, Bulgaria

"Sensitivity of the Liver to Whole-Body Irradiation"

Moscow, Meditsinskaya Radiologiya, No 3, 1972, pp 58-64

Abstract: Whole-body irradiation of rabbits produced functional changes in the liver whether the animals were exposed once to a single dose of 1000 r or to daily doses of 25 r for 30 days. Seven days after the animals received 1000 r, total proteins, serum cholinesterase and glutamic-oxalacetic transaminase activities decreased. On day 15, the total proteins regained the original level, glutamic-oxalacetic and glutamic-pyruvic transaminase activities and content of beta lipoproteins increased while cholinesterase activity remained low. In the animals irradiated for 30 days, total proteins decreased (mainly because of the albumins, although the gamma globulins increased somewhat) as did cholinesterase activity, but the level of transaminase activities rose sharply. The fixation and clearance functions of the liver were more impaired in the chronically irradiated animals.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR UDC 542.61:546.799.3

ZAKHARKIN, B. S., ZEMLYANUKHIN, V. I., and SHEVCHENKO, V. B.

"Amine Extraction of Neptunium (IV) from Nitrate Solutions"

Leningrad, Radiokhimiya, Vol 12, No 4, 1970, pp 577-584

Abstract: The authors investigated the extraction properties of amines of v ious structures with respect to the nitrate of tetravalent neptunium using the isotope Np-239. Specimens were prepared by irradiating uranium dioxide. After irradiation and aging, the uranium dioxide powder was dissolved in 1.5 M nitric acid. Neptunium was isolated from the solution by amine extraction. The nature of the gamma spectrum and rate of decay were used to check purity. Primary aliphatic, secondary aliphatic and aliphatic-aromatic, and tertiary aliphatic-aromatic and aliphatic amines were used. Basically, 0.1 M solutions of the amines in m-xylene were prepared. To form monoitrates of the amines, the organic solutions were treated with nitric acid in equimolar quantities. The neptunium was stabilized in the tetravalent state by ferrous nitrate in hydrazine or by hydrazine alone with the application of heat in a 4-6 M nitrate solution for one hour at 80°C. The distribution coefficients of neptunium were studied during re-extraction, thus eliminating possible errors due to inextractable forms. Mixing of phases was done for five minutes at 20±2°C. Diffusion coefficients were calculated from the ratio of the peaks 1/2

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ZAKHARKIN, B. S., et al., Radiokhimiya, Vol 12, No 4, 1970, pp 577-584

corresponding to the gamma line of Np-239 at 87 Kev. The accuracy of the method for a single determination is ±0.30% with 0.95 reliability. From three to five determinations were made. The variation in the extraction properties of the amines studied is explained from the standpoint of the basicity of the amines as well as the polarity of the salts which they form.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--STABILITY OF SOLUTIONS OF AMINES TO SEPARATION INTO TWO PHASES -U-

AUTHOR-(02)-ZEMLYANUKHIN, V.I., ZAKHARKIN, B.S.

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(1), 76-85

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--URANIUM, NEPTUNIUM, PLUTONIUM, AMINE, CHEMICAL SEPARATION, ORGANIC SOLVENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1465 STEP NO--UR/0186/70/012/001/0076/0085

CIRC ACCESSION NO--AP0135136

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

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UNCLASSIFIED

CIRC ACCESSION NO--AP0135136 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMATION OF A 2ND PHASE IN TRIOCTYLAMINE (I) DILUENT SYSTEM USED IN THE EXTN. OF URANYL, NP PRIME4POSITIVE, AND PU PRIME4POSITIVE FROM AQ. NITRATE SOLNS. IS CAUSED BY A DECREASE IN THE SOLY. OF SOME DILUENTS AS A RESULT OF THE FORMATION OF AMINE NITRATE, WHICH HAS A STRONG TENDENCY TOWARDS POLYMN. ADDN. OF OCTANOL (E.G., TO THE I KEROSINE SYSTEM) INCREASES THE SOLY. AND PREVENTS FORMATION OF A 2ND PHASE; FOR INSTANCE, IN THE CASE OF 10-20PERCENT I SOLNS. IN KEROSINE, THE AMT. OF OCTANOL TO BE ADDED TO PREVENT FORMATION OF A 2ND PHASE IS 0.05 MOLE FOR EACH 0.1 MOLE OF HNO SUB3 IN THE ORG. PHASE. THE LIMITS OF FORMATION OF A 2ND PHASE IN THE ABOVE SYSTEMS ARE SHOWN GRAPHICALLY; IN THE ABSENCE OF U, NP, OR PU, NO 2ND PHASE IS FORMED IN I SOLNS. IN CCL SUB4, XYLENE, AND POLYALKYLBENZENE EVEN IF THEY CONTAIN HNO SUB3, BUT THE INTRODUCTION OF U, NP, OR PU CAUSES SEPN. OF A 2ND PHASE.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC 621.317:621.317.727

POPOV, A. S., YESIKOV, YU. S., ZAKHARKIN, B. V.

"Wide-Band Phase Converter"

Sb. nauch. soobshch. Radiotekhn. fak. Dagestan. un-t (Collection of Scientific Reports. Radio Engineering Department. Dagestan University), 1970, No 1, pp 124-128 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10A181)

Translation: A study was made of the problem of using RC-circuits in a phase conversion circuit from the point of view of obtaining a constant output voltage in a wide-frequency band. Application of emitter followers with low input impedance and a negative feedback circuit (an amplifier with a dynamic load, k = 1,000) permit variation of the phase of the supplied voltage from units of degrees to 150-160° in a wide-frequency band and operation on a low-impedance load. In conclusion, a practical phase converter scheme and its technical specifications are presented.

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USSR UDC 547.244

KAZANTSEV, A. V., ZHUBEKOVA, M. N., ZAKHARKIN, L. I., Kazaganda Pedagogical Institute

"Synthesis of m-Carboranylphosphinous and Phosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul 72, pp 1570-1571

Abstract: It was shown that m-carboranylphosphinous acid can by synthesized by reacting lithium-m-carborane with bis(diethylamino)chlorophosphine in an ether-benzene solution with subsequent treatment of the resultant bis(dimethyl amino)-m-carboranylphosphine with dry hydrogen chloride and moist air. m-Carboranylphosphonic acid was synthesized from bis(diethyl amino) m-carboranyl phosphine.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC 543.422.27:547.1'127

FEDOROV, L. A., KYSKIN, V. I., and ZAKHARKIN, L. I., Institute for Organometallic Compounds, Academy of Sciences SSSR

"Nuclear Magnetic Resonance Studies of the Methylmercury Derivatives of 1-Phospha-7-; 1-Phospha-12-; 1-Arsa-7-; and 1-Arsa-12-carbaclosododecaboranes (11)"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 536-538

Abstract: From data based on the cleavage of the C-C bond, the electron affinity of keto-borane increases in the following order: m-carborane ($m\text{-}B_{10}H_{10}C_2H_2$) < m-carboarsa borane ($m\text{-}B_{10}H_{10}AsCH$) < m-carbophosphaborane ($m\text{-}B_{10}H_{10}PCH$). It has also been shown in NMR spectra that the spin-spin interaction constants $J_{Hg^{199}-CH_3}$ of the metal derivatives of carboranes change to the electron affinity of the carborane group connected with the mercury atom. m- and p-carbophospha- and m- and p-carboarsa-boranes were prepared in the following way: $m\text{-}, p\text{-}B_{10}H_{10}ECH \xrightarrow{RLi} m\text{-}, p\text{-}B_{10}H_{10}ECLi \xrightarrow{CH_3HgBr} m\text{-}, p\text{-}B_{10}H_{10}ECHgCH_3$ where E = P, As; R = n - C_4H_9, C_6H_5. The ortho forms could not be

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FEDOROV, L. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 536-538

prepared by this method. The measured spin-spin coupling constants $J_{Hg^{199}-C-H^1}$, are given below.

Соединение / COMPOUND	Растворитель / SOLVENT				
	CCl_4	$CHCl_3$	CH_2Cl_2	C_6H_6	Диоксан
	$J_{Hg^{199}-C-H^1}$, Hz				
m-$HCB_{10}H_{10}CHgCH_3$ [5]	136,1	138,7	140,9	140,9	145,0
m-$AsB_{10}H_{10}CHgCH_3$	136,5	139,3	141,8	141,2	145,0
m-$PB_{10}H_{10}CHgCH_3$	137,3	139,8	142,7	142,2	146,9
p-$HCB_{10}H_{10}CHgCH_3$ [5]	133,7	135,5	138,8	138,3	141,4
p-$AsB_{10}H_{10}CHgCH_3$	133,7	135,5	137,7	138,5	141,7
p-$PB_{10}H_{10}CHgCH_3$	134,4	139,5	140,9	142,6	145,1

These agree with earlier values.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR UDC 541.138.3:547.244

ZAKHARKIN, L. I., and KYSKIN, V. I., Institute of Heteroorganic Compounds, Academy of Sciences USSR

"Polarographic Reduction of Isomeric Carbaphosphaboranes ($B_{10}H_{10}PCH$) and Carbaarsaboranes ($B_{10}H_{10}AsCH$)"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 9, Sep 71, pp 2052-2053

Abstract: The authors studied the polarographic reduction on a dropping mercury electrode of all isomeric carbaphosphaboranes and carbaarsaboranes in dimethylformamide against a $(C_2H_5)_4NClO_4$ background. It was found that the polarographic reduction processes are irreversible. In the carbaphosphaforane series the electron affinity decreases in the order ortho > meta > para, in the carbaarsaborane series meta > para > ortho. Replacement of one CH group in the icosahedral skeleton of the carboranes $B_{10}H_{10}C_2H_2$ by a phosphorus or arsenic atom increases the electron affinity of the system. The authors thank S. A. SHIRONOVA and A. P. Snyakin for helping take the polarograms and for valuable consultations.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR UDC 547.241+547.244

ZAKHARKIN, L. I., and L'VOV, A. I., Institute of Heteroorganic Compounds, Academy of Sciences USSR

"Replacement of CO Group by $(C_6H_5)_3P$ in Complexes"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, p 1880

Abstract: The authors for the first time conducted a ligand replacement reaction in polyhedral metallocarboranes using the example of replacement of a CO group by $(C_6H_5)_3P$ in manganesetricarboranyl complexes as a result of irradiation of a benzene or THF solution with UV light in the presence of a slight excess of triphenylphosphine.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

USSR

UDC 543.878.547.244

ZAKHARKIN, L. I., and KYSKIN, V. I., Institute of Organoelemental Compounds, Academy of Sciences of the USSR

"On the Comparative Reactivity of Carborans ($B_{10}H_{10}C_2H_2$), Carbaphosphaborans ($B_{10}H_{10}PCH$) and Carbaarsaborans ($B_{10}H_{10}AsCH$)"

Moscow, IAN SSSR, Seriya Khimicheskaya, No 9, Sep 70, pp 2,142-2,143

Abstract: Ortho-, meta- and para-carbaarsaborans were subjected to electrophilic halogenation, exchange halogenation by polychloromethanes and photochemical chlorination at the boron atoms of the carbaarsaboran ring. The facility of electrophilic halogenation of carbaarsaboran isomers decreases in the order: ortho-<meta-<para-isomers, and the stability of the carbaarsaboran ring with respect to piperidine increases in the order: ortho- <meta-<-para-isomers. The rate of halogenation of carbaarsaboran isomers is greater than for the corresponding isomers of carboran and carbaphosphaboran, and the carbaarsaboran ring is more resistant to the effect of piperidine than the carboran and carbaphosphaboran rings. Electrophilic and exchange monohalogenation of o-carbaarsaboran produces a mixture of 8(10)-, 9- and 12-halo-o-carbaarsaborans, while photochemical monohalogenation produces a mixture of

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USSR

ZAKHARKIN, L. I., and KYSKIN, V. I., IAN SSSR, Seriya Khimicheskaya, No 9, Sep 70, pp 2,142-2,143

six possible B-chloro-o-carbaarsaborans. At 550°C in the gas phase, isomerization of o-carbaarsaboran to m-carbaarsaboran takes place with a 96% yield, while mutual conversion of meta- and para-carbaarsaborans takes place at 650°C giving an equilibrium mixture which contains 50% of the para-isomer.

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UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EQUILIBRIUM AND KINETIC ACIDITY OF P CARBORANE -U-

AUTHOR-(05)-PETROV, E.A., YAKOVLEVA, YE.A., ISAYEVA, G.G., KALININ, V.N., ZAKHARKIN, L.I.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 617-19 (CHEM)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBORANE, ISOMER, ISOTOPE EXCHANGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0694 STEP NO--UR/0020/70/191/003/0617/0619

CIRC ACCESSION NO--AT0124366

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

2/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124366

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM METALATION EX PTS. WITH P CARBORANE IN (CH SUB2 ONE) SUB2 AND CYCLO,C SUB6 H SUB11 NH SUB2 THE FOLLOWING PKA OF ISOMERIC CARBORANES WERE D4DUCED: O 233.3, M 27.9, P 30.0; FROM REACTIONS OF ISOTOPIC H EXCHANGE IN LIQ. NH SUB3 THESE WERE 19.2, 27, 29.4. THE RATE FOR THE P ISOMER HAD THE RATE CONST. K 4.2 TIMES 10 PRIME NEGATIVE6 SEC PRIME NEGATIVE1 AT 120DEGREES, AND 8.5 TIMES 10 PRIME NEGATIVE7 SEC PRIME NEGATIVE1 AT 50DEGREES.

FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DIPOLE MOMENTS OF O, M, AND P CARBAPHOSPHOBORANES B SUB10 H SUB10 PCH -U-

AUTHOR-(04)-ECHEISTOVA, A.I., SYRIKIN, YA.K., ZAKHARKIN, L.I., KYSKIN, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUCKT. KHIM. 1970, 11(3), 552

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DIPOLE MOMENT, DIELECTRIC CONSTANT, BORANE, ORGANIC PHOSPHORUS COMPOUND, ORGANOBORON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605018/B10 STEP NO--UR/0192/70/011/003/0552/0552

CIRC ACCESSION NO--AP0140798

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

2/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140798

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOL. REFRACTIVITIES, DIELEC. CONSTS., AND DIPOLE MOMENTS OF THE TITLE COMPDS. WERE DETD. THE DIPOLE MOMENTS OF THESE COMPDS. WERE COMPARED WITH THOSE OF THE CORRESPONDING ISOMERS OF B SUB10 H SUB10 C SUB2 H SUB2. FACILITY: INST. ELEMENTOORG. SOEDIN, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ELECTRONIC PROPERTIES OF (3),1,2, AND (3),1,7,DICARBOLLIDE IONS -U-

AUTHOR-(03)-ZAKHARKIN, L.I., KALININ, V.N., SNYAKIN, A.P.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(2), 341-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRON PROPERTY, NMR SPECTRUM, CARBORANE, FLUORINATED ORGANIC COMPOUND, CESIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1080 STEP NO--UR/0020/70/190/002/0341/0344

CIRC ACCESSION NO--AT0124737

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 020

CIRC ACCESSION NO--AT0124737

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM NMR CHEM. SHIFTS FOUND IN THE SPECTRA OF THE TITLE SUBSTANCES THE FOLLOWING VALUES WERE CALCD. FOR INDUCTIVE AND RESONANCE CONTRIBUTIONS OF THE IONS WITH THE INDICATED STRUCTURES: (FORMULA SHOWN ON MICROFICHE). THE PLAUSIBLE REASONS FOR THE VALUES WERE DISCUSSED BRIEFLY. HEATING 3,(P,FLUOROPHENYL),O,CARBORANE WITH ALC. KOH UNTIL H EVOLUTION HAD STOPPED AND TREATING THE EVAPD. SOLN. WITH H SUB2 O, THEN WITH CSNO SUB3 GAVE THE CS SALT OF 6,(P,FLUOROPHENYL),O,DICARBAUNDECABORANE (13), M. 348-50DEGREES. SIMILARLY WAS PREPD. CS SALT OF 6,(M,FLUOROPHENYL),O,DICARBAUNDECABORANE(13), M. 176-8DEGREES.

FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--SYNTHESIS BASED ON LITHIUM DERIVATIVES OF P CARBORANE -U-

AUTHOR-(03)-ZAKHARKIN, L.I., KALININ, V.N., ZHIGAREVA, G.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 912-14

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, ORGANOLITHIUM COMPOUND, MERCAPTAN, IODINATED ORGANIC COMPOUND, CARBOXYLIC ACID CHLORIDE, AMINE DERIVATIVE, CARBORANE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1368 STEP NO--UR/0062/70/000/004/0912/0914

CIRC ACCESSION NO--AP0135042

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

2/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135042

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO 1,12,DILITHIUM,P,CARBORANE (I), PREPD. FROM 1 G P-CARBORANE IN C SUB6 H SUB6, WAS ADDED 3.6 G IODINE, AND THE MIXT. KEPT 30 MIN TO GIVE 96PERCENT 1,12,DIIODO,P,CARBORANE, M. 218-19DEGREES; SIMILAR REACTION WITH $ GAVE 1,12,DIMERCAPTO,P,CARBORANE M. 156-8DEGREES. PASSING SO SUB2 INTO A SOLN. OF 1,LITHIUM,P,CARBORANE (II) IN C SUB6 H SUB6 GAVE P,CARBORANYLSULFINIC ACID, M. 135-6DEGREES. TREATING P,CARBORANEDICARBOXYLIC ACID WITH PCL SUB5 GAVE THE ACID DICHLORIDE, M. 98DEGREES, WHICH WITH ALCL SUB3 IN C SUB6 H SUB6 ON 20 MIN HEATING GAVE A GOOD YIELD OF 1,12,DIBENZOYL,P,CARBORANE (III), M. 149-50DEGREES, ALSO FORMED FROM I BY TREATING WITH BZCL AT 0DEGREES. III WAS REDUCED WITH LIALH SUB4 IN ET SUB2 O TO 1,12,BIS(BENZYLOXY),P,CARBORANE, M. 153DEGREES. TREATING III WITH NAOET,ETOH OVERNIGHT GAVE ETOBZ AND P,CARBORANE; ALC. KOH SIMILARLY GAVE THE LATTER AND BZOK. II AND HEHGCL IN ET SUB2 O,C SUB6 H SUB6 HEATED 1 HR GAVE 74PERCENT METHYL(P,CARBORANYL)MERCURY, M. 192-3DEGREES. II IN HEXANE MIXED WITH NOCL IN ET SUB2 O AT MINUS 75DEGREES GAVE, AFTER 3 HR, A LOW YIELD OF 1,NITROSO,P,CARBORANE,M. 174-5DEGREES. P,CARBORANECARBOXYLIC ACID CHLORIDE, PREPD. IN DRY C SUB6 H SUB6 WITH PCL SUB5, WAS TREATED WITH NAN SUB3 IN AQ. ME SUB2 CO TO YIELD P,CARBORANECARBOXYLIC ACID AZIDE, M. 57-8DEGREES, WHICH HEATED WITH CONCD. H SUB2 SO SUB4 GAVE 1,AMINO,P,CARBORANE,M.237DEGREES.

FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--REACTION OF LITHIUM O CARBORANES WITH HEXAFLUOROBENZENE -U-

AUTHOR-(02)-ZAKHARKIN, L.I., LEBEDEV, V.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 957-8.

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBORANE, ORGANOLITHIUM COMPOUND, FLUORINATED ORGANIC COMPOUND, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1304 STEP NO--UR/0062/70/000/004/0957/0958

CIRC ACCESSION NO--AP0134978

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

2/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134978

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF O,RCB SUB10 H SUB10 CLI WITH C SUB6 F SUB6 GAVE 60-5PERCENT 1,4,O,RCB SUB10 H SUB10 CC SUB6 F SUB4 CB SUB10 H SUB10 CR,O (ONLY ISOMER) IN A REACTION RUN IN ET SUB2 O 2 DAYS AT ROOM TEMP.: R EQUALS ME, M. 315DEGREES; AND R EQUALS PH, M. 247DEGREES. EVIDENTLY THE INITIALLY FORMED O,RCB SUB10 H SUB10 CC SUB6 F SUB5 HAS ITS P,F ATOM SO ACTIVATED BY THE SUBSTITUENT GROUP THAT THIS REACTS MORE RAPIDLY THAN DOES C SUB6 F SUB6 ITSELF. THIS WAS THE RESULT EVEN WITH A 2 FOLD EXCESS OF C SUB6 F SUB6 IN THE REACTION MIXT.

FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--REACTIONS OF LITHIUM M,CARBORANES WITH FLUORO OLEFINS -U-

AUTHOR-(02)-ZAKHARKIN, L.I., LEBEDEV, V.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 687-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--LITHIUM COMPOUND, CARBORANE, ALKENE, FLUORINATED ORGANIC COMPOUND, ORGANOLITHIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1776 STEP NO--UR/0062/70/000/003/0687/0688

CIRC ACCESSION NO--AP0123573

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123573

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BULI AND 1,METHYL,M CARBORANE GAVE THE 2,LI DERIV., WHICH IN ET SUB2O,C SUB4 H SUB4 UNDER N WAS TREATED AT MINUS 180DEGREES WITH C SUB2 F SUB4 IN AN AUTOCLAVE, THEN HEATED 8 HR AT 100DEGREES TO YIELD A MIXT. OF 20PERCENT 1,METHYL,M,CARBORANE AND 80PERCENT 1,METHYL,2,TRIFLUOROVINYL,M,CARBORANE, B SUB15 94DEGREES; SIMILARLY WERE PREPD. 73PERCENT M,MECB SUB10 H SUB10 CCF: CFCL, B SUB15 135DEGREES; AND 50PERCENT M,MECB SUB10 H SUB10 CCF: CFCF SUB3, B SUB15 90-1DEGREES. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ACTION OF CHLORINE ON O AND M,CARBORANYLMAGNESIUM HALIDES -U-

AUTHOR-(03)-ZAKHARKIN, L.I., ZHIGAREVA, G.G., PODVISOTSKAYA, L.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 461-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBORANE, CHLORINE, ORGANOMAGNESIUM COMPOUND, BROMIDE, IODIDE, ETHANE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0842 STEP NO--UR/0062/70/000/002/0461/0463

CIRC ACCESSION NO--AP0119746

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

2/2 011 UNCLASSIFIED PROCESSING DATE--23OCT7C

CIRC ACCESSION NO--AP0119746

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING O OR M,CARBORANES WITH ETMGCL, ETMGVR, OR ETMGI IN THF GAVE C SUB2 H SUB6 AND AFTER REMOVAL OF MUCH OF THE SOLVENT AND REPLACEMENT OF IT BY C SUB6 H SUB6, THE MIXT., COOLED TO 5-10DEGREES, WAS TREATED WITH DRY CL TO YIELD MAINLY C,BROMO OR C,IODOCARBORANES. THUS, CHLORINATION OF O,CARBORANYLMAGNESIUM BROMIDE GAVE 6PERCENT 1,CHLORO,O,CARBORANE AND 94PERCENT 1,BROMO,O,CARBORANE, WHILE 1,MEHTYL,2,BROMOMAGNESIUM,O,CARBORANE GAVE 5PERCENT 1, METHYL,2,CHLORO,O,CARBORANE AND 95PERCENT 1,METHYL,2,BROMO,O, CARBORANE; O, CARBORANYL MAGNESIUM IODIDE GAVE 5PERCENT 1,CHLORO,O,CARBORANE; O,CARBORANYL,MAGNESIUM IODIDE GAVE 5PERCENT 1,CHLORO,O,CARBORANE AND 95PERCENT 1,IODO,O,CARBORANE, WHILE 1,METHYL,2,IODOMAGNESIUM,O,CARBORANE GAVE 6PERCENT 1,METHYL,2,CHLORO,O,CARBORANE AND 94PERCENT 1,METHYL,2,IODO,O,CARBORANE. FOR PREPN. OF THE C,CHLORO DERIVS. IT IS NECESSARY TO USE RMGCL FOR THE REACTIONS. THE RESULTS WERE THE SAME FO RM,CARBORANE ANALOGS.

FACILITY: INST. LEMENTOORG. SOEDIN., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

1/4 015 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--SYNTHESIS OF SOME NITROGEN CONTAINING CARBORANE DERIVATIVES -U-

AUTHOR-(03)-ZAKHARKIN, L.I., GREBENNIKOV, A.V., LVOV, A.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 106-12

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, ORGANOBORON COMPOUND, CARBORANE COMPOUND, ACETONITRILE, AMINE, UREA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1593 STEP NO--UR/0062/70/000/001/0106/0112

CIRC ACCESSION NO--AP0100208

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720008-7

2/4 015 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0100208

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING CARBORANYLACETAMIDE WITH P SUB2 O SUB5 AT 200DEGREES 2 HR GAVE 90PERCENT CARBORANYLACETONITRILE, M. 109-10DEGREES; SIMILARLY WAS PREPD. METHYLCARBORANYLACETONITRILE, M. 146-7DEGREES. THIS WITH LIALH SUB4 IN ET SUB2 O GAVE 62PERCENT METHYLCARBORANYLETHYLAMINE; PICRATE, M. 223DEGREES; HCL SALT M. 325DEGREES. SIMILARLY WAS PREPD. 50PERCENT CARBORANYLETHYLAMINE-HCL, M. 296-7DEGREES. C1CN AND HCB SUB10 H SUB10 CCH SUB2 MGBR IN ET SUB2 O IN 2 HR AT ROOM TEMP. GAVE 16PERCENT CARBORANYLACETONITRILE AND 84PERCENT CHLOROMETHYLCARBORANE. METHYLCARBORANYLACETYL CHLORIDE AND ME SUB2 NH GAVE THE DIMETHYLAMIDE, M. 97-8DEGREES, WHICH WITH LIALH SUB4 IN THF GAVE 62PERCENT N,N,DIMETHYL(METHYLCARBORANYLETHYL)AMINE; PICRATE M. 255-7DEGREES. SIMILARLY THE ACYL CHLORIDE AND NAN SUB3 GAVE THE CRUDE AZIDE WHICH HEATED IN MEPH 2 HR GAVE, AFTER FINAL 1 HR IN THE PRESENCE OF CONCD. HCL, 20PERCENT METHYLCARBORANYLAMINE-HCL, M. IS GREATER THAN 320DEGREES. REACTION OF ET CARBORANYLMETHYLACETOACETATE WITH HN SUB3 IN C SUB6 H SUB6 GAVE N AND ET ALPHA,CARBORANYLMETHYLACETAMIDOACETATE, M. 101-2DEGREES, WHICH HEATED WITH ACOH-HCL 5 HR GAVE HCB SUB10 H SUB10 CCH SUB2 CH(NH SUB2.HCL)CO SUB2 H, M. 296-7DEGREES; FREE ACID M. 210DEGREES.

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3/4 015 UNCLASSIFIED

CIRC ACCESSION NO--AP0100208 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--METHYLCARBORANYLLITHIUM (FROM METHYLCARBORANE AND BULI IN C SUB6 H SUB6) WAS TREATED WITH EPICHLOROHYDRIN AT MINUS 65DEGREES TO YIELD 79PERCENT 1,METHYLCARBORANYL,3,CHLORO,2,PROPANOL, M. 57-8DEGREES, WHICH WAS OXIDIZED WITH K SUB2 CR SUB2 O SUB7-H SUB2 SO SUB4 TO MECB SUB10 H SUB10 CCH SUB2 CUCH SUB2 CL, B SUB1.5 162DEGREES, M. 30DEGREES, WHICH WITH K PHTHALIMIDE IN ME SUB2 NCHO IN THE COLD 1 HR GAVE N,MEHTYLCARBORANYLACETYLPHTHALIMIDE, M. 194-5DEGREES, WHICH HEATED 2 DAYS WITH HCL-ACOH GAVE 1,METHYLCARBORANYL,3,AMINO,2,PROPANONE; HCL SALT M. 185-6DEGREES. SIMILARLY WAS PREPD. CARBORANYLACETONE, M. 75-6DEGREES; 2,4,DINITROPHENYLHYDRAZONE, M. 185-6DEGREES. THE KETONE AND BR IN ACOH AT 50DEGREES GAVE 1,CARBORANYL,3,BROMO,2,PROPANONE, M. 30DEGREES, WHICH WITH THIOACETAMIDE GAVE 4,(CARBORANYLMETHYL)THIAZOLE; HBR SALT M. 220DEGREES; FREE BASE M. 92-3DEGREES. SIMILAR REACTION WITH ACNH SUB2 AT 140DEGREES 1.5 HR GAVE 4,(CARBORANYLMETHYL)OXAZOLE, M. 49-50DEGREES. ET GAMMA,(METHYLCARBORANYL)ACETOACETATE AND PHNHNH SUB2 IN ACOH 1 HR GAVE 1,PHENYL,3, (METHYLCARBORANYL)METHYL,5,PYRAZOLONE, M. 187DEGREES. VERATRYLETHYLAMINE AND ET SUB3 N TREATED IN ET SUB2 O WITH CARBORANYLACETYL CHLORIDE GAVE THE CORRESPONDING AMIDE, M. 105-6DEGREES, WHICH HEATED WITH POCL SUB3 IN MEPH 2 HR GAVE 1,(CARBORANYLMETHYL)3,4,DIHYDRO,6,7,DIMETHOXYISOQUINOLINE (I), M. 141-2DEGREES; PICRATE DECOMP. 230DEGREES; HCL SALT DECOMP. 225DEGREES; OXALATE DECOMP. 164DEGREES. METHYLCARBORANYLACETALDEHYDE AND VERATRYLETHYLAMINE IN ETOH-HCL 6 HR GAVE 1,(METHYLCARBORANYLMETHYL)1,2,3,4,TETRAHYDRO,6,7,DIME THOXYISOQUINOLINE-HCL, DECOMP. 252DEGREES.

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CIRC ACCESSION NO--AP0100208 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--I HEATED IN ETOH 2 HR GAVE INNER SALT (II) OF THE DICARBAUNDECABORANE, DECOMP. 240DEGREES. THE NAHSO SUB3 ADDUCT OF(METHYL CARBORANYL)ACETALDEHYDE AND A KCN-(NH SUB4) SUB2 CO SUB3 SUSPENSION IN ET SUB2 O GAVE IN 6 HR WITH 50PERCENT AQ. ETOH AT 60DEGREES AND 1 HR AT 70-80DEGREES 30PERCENT 4,(METHYLCARBORANYLMETHYL)HYDANTOIN, M. 212DEGREES. DI-ET (CARBORANYLMETHYL)MALONATE HEATED WITH UREA IN ETONA-ETOH 15 HR GAVE 5,(CARBORANYLMETHYL)BARBITURIC ACID, M. 332-3DEGREES; MONO-NA SALT M. IS GREATER THAN 350DEGREES. THIS AND PCL SUB5-POCL SUB3 IN 4 HR AT 150DEGREES GAVE 5,(CARBORANYLMETHYL),2,4,6,TRICHLOROPYRIMIDINE, M. 146-7DEGREES.

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Acc. Nr: AP0015791 Abstracting Service: CHEMICAL ABST. 4/70 Ref. Code: NE 0000

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79136s Action of halogens upon Grignard and Iotsich reagents. Zakharkin, L. I.; Gavrilenko, V. V.; Paici, B. A. (Inst. Org. Elem. Compounds, Moscow, USSR). *J. Organometal. Chem.* 1970, 21(2), 269-72 (Eng). Chlorination of Grignard and Iotsich reagents RMgX (where X = Br, I) gives considerable amts. of RI and RBr together with RCl. Bromination of RMgI results in RI and RBr. Bromination of RMgCl leads to RBr, and iodination of RMgX(X = Cl, Br), to RI. A method is proposed for the prep. of RC:CCl by the reaction of Cl with RC:CMgCl.
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Acc. Nr: AP0049130 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR 0079

100792q Action of lithium carboranes on quaternary ammonium salts. Zakharkin, L. I.; Litovchenko, L. E.; Kazantsev, A. V. (USSR). *Zh. Obshch. Khim.* 1970, 40(1), 125–7 (Russ). To a soln. of methyl-*o*-carboranyllithium (I) in Et_2O-C_6H_6 (prepd. from 3.16 g methyl-*o*-carborane and BuLi) was added 5.7 g powd. 1-methylquinolinium iodide and the mixt. kept 1 hr at room temp. to give 82% 1-methyl-2-(methyl-*o*-carboranyl)-1,2-dihydroquinoline, m. 128–9°, which is stable in the solid state in air but develops a red color in soln. when heated. It is easily oxidized by iodine to the quinolinium iodide salt. Similarly was prepd. 76% 1-methyl-2-(*o*-carboranyl)-1,2-dihydroquinoline, m. 139–41°; and 86% 1-methyl-2-(phenyl-*o*-carboranyl)-1,2-dihydroquinoline, m. 155–7°. Dilithium-*m*-carborane gave 64% bis(1-methyl-1,2-dihydroquinoline)-*m*-carborane, m. 139.5–41°. A soln. of I and 1-methylpyridinium iodide similarly gave after brief heating 78% 1-methyl-4-(methyl-*o*-carboranyl)-1,4-dihydropyridine, m. 89–90°; similarly was prepd. 1-methyl-4-(phenyl-*o*-carboranyl)-1,4-dihydropyridine, m. 106–8°. These behaved similarly to the quinoline compds. above.

G. M. Kosolapoff

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Acc. Nr: AP0100228 Abstracting Service: CHEMICAL ABST. Ref. Code: 4R0062

111543k Synthesis of fluoroalkenyl-o-carboranes. Zakharkin, L. I.; Lebedev, V. N. (Inst. Elementoorg. Soedin., Moscow, USSR). *Izv. Akad. Nauk SSSR, Ser. Khim.* 1970, (1), 190–2 (Russ). Reaction of BuLi with 1-methyl-*o*-carborane gave the 2-Li deriv. (I), which in Et_2O-C_6H_6 added over 6–10 hr to a soln. of a fluoro olefin in Et_2O at −30 to −70°, finally in an autoclave 6–10 hr at room temp., gave the following 1-methyl-2-fluoroalkyl-*o*-carboranes: *o*-$MeCB_{10}H_{10}CCF{:}CFX$ (X shown): Cl, $b_{0.7}$ 67–72°; CF_3, $b_{0.7}$ 42–50°; and *o*-$MeCB_{10}H_{10}C$, m. 167–70°; also prepd. were *o*-$MeCB_{10}H_{10}CCF{:}CXCF_2CB_{10}H_{10}CMe$-*o*: F, m. 150–2°; and CF_3, m. 200–2°. I in Et_2O-C_6H_6 treated in autoclave with 32 g $CF_2{:}CFCl$ 8 hr at room temp. gave 2 fractions, $b_{0.7}$ 68–70°, and $b_{0.7}$ 70–2°, each of which contained trans isomers of 1-methyl-2-difluorochlorovinyl-*o*-carboranes in about 30–70 ratio according to NMR and chromatographic data. The NMR spectra of the products were reported in detail. Reaction with C_2F_4 gave only the trans isomer, while perfluoroisobutylene gave only the product of double substitution regardless of reactant proportion used. Yields were 25–63%.

G. M. Kosolapoff

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X-8. EXPERIMENTAL STUDY OF THE DISTRIBUTION OF THE ADMIXTURES IN MULTILAYERED FILM STRUCTURES OF GALLIUM ARSENIDE GROWN BY THE METHOD OF LIQUID EPITAXY

[Article by A. A. Baryhin, A. A. Zakharov, I. V. Kostyreva, N. K. Nedev, V. M. Prigorovskiy, Leningrad; Novosibirsk, III Simpozium po Protsessam Rosta i Sintezu Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 136]

This paper contains a discussion of the results of an experimental study of the admixture distribution in film structures of GaAs of the n^+-n-i, n^+-p-n^{++}, p-n-i type and others grown from the melts-solutions using forced cooling and using a temperature gradient. The conditions of epitaxial growth of the films are the following: the saturation temperature of the solution-melt is 800° to 900°C, the cooling rate is 1-5 deg/min, the temperature gradient is 2-10 deg/cm. Tin, germanium and zinc were used as the alloying admixtures. The distribution of the admixtures in the structures obtained was investigated by the known volt-farad and sonde methods and also using the chemical decoration procedure developed for gallium arsenide. The research demonstrated that depending on the conditions and the growth regimes, sharp transitions of the admixture concentration are obtained between the layers and also structures with intermediate high-resistance and low-resistance layers. It was discovered that when using the temperature gradient method, a more uniform distribution of the admixtures is obtained with respect to the thickness of the layers. The measurement results obtained by different methods agree quite well with each other.

ZAKHAROV, A.A.

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Vacuum Tubes

USSR

UDC: 621.372.413

ZAKHAROV, A. A., NAZAROVA, A. I.

"Investigation of Some Modes of Operation of the Output Resonator of a Klystron With Distributed Interaction"

V sb. Vopr. elektron. tekhniki (Problems of Electronic Technology--collection of works), Saratov, 1971, pp 3-10 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B163)

Translation: It is shown how efficiency is affected by the phase and the modulus of reflection from end plates which short the decelerating system of the output resonator in a klystron with distributed interaction. An estimate is made of the possibility of improving the electronic efficiency of a klystron with distributed interaction by selecting the electrons with maximum deceleration from the interaction space. Five illustrations, bibliography of four titles. Resumé.

1/1

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USSR

ZAKHAROV, A.B.

UDC 621.385.623

"Stability Of Output Resonators Of Klystrons With Distributed Interaction"

V sb. Vopr. elektron. tekhniki (Problems Of Electronics Technology--Collection Of Works), Saratov, 1970, pp 45-49 (from RZh--Elektronika i yeye primeneniye, No 6, June 1970, Abstract No 6A126)

Translation: The results are presented of a numerical computation of the stability of the output resonators of klystrons with distributed interaction (KDI) with respect to the working equations of the KDI with various lengths of the resonators and the parameter C = 0.1; 0.15; 0.2. Summary.

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USSR

UDC 621.385.623

SOVETOV, N.M., ZAKHAROV, A.A., SHESTOPEROV, A.N.

"On The Effect Of The Location Of The Energy Outlet On The Efficiency Of A Klystron With Distributed Interaction"

V sb. Vopr. elektron. tekhniki (Problems Of Electronics Technology-- Collection Of Works), Saratov, 1970, pp 37-44 (from R2h--Elektronika i yeye primeneniye, No 6, June 1970, Abstract No 6A127)

Translation: The process is considered of the establishment of high-frequency amplitude in the extended section of a klystron with distributed interaction, allowing for the spatial effect of the energy outlet expressed in terms of the attenuation introduced and varying with the length of the section. Equations for the excitation are formulated. The results are presented of computations with two arrangements of the energy outlet: at the end of the section and its beginning for two different lengths of the output resonator. Summary.

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V-10. STUDY OF THE KINETICS OF CHEMICAL TRANSPORT OF GALLIUM ARSENIDE IN THE $GaAs-H_2O-H_2$ (II) SYSTEM

[Article by A. A. Barybin, A. A. Zakharov, N. K. Nedev, Leningrad; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 61]

Calculation of the composition of the gas phase and selection of the thermodynamic conditions of the epitaxial growth of GaAs films offered the possibility of defining the diffusion mass transfer rate by the Lever-Mandel theory. The experimental study of the growth rate of GaAs films and comparison of it with the calculated values permitted us to find the growth resistance of the crystal caused by the finite rate of the heterogeneous processes on the surface of the source and the substrate. It turned out that under actual conditions the rate of the heterogeneous surface reactions is on the same order as the rate of diffusion mass transport. The measurements of the growth rates on the substrates with different orientation — (111), (110), (100) — gave the range of operating supersaturations $\Delta G = (0.5-1)$ kcal/mole. The greatest growth rate and the least operating supersaturations were observed on substrates with (111) orientation, and the least rate and greatest supersaturation, on substrates with (100) orientation.

ZAKHAROV, A.A.

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V-15. EXPERIMENTAL STUDY OF THE HETEROEPITAXIAL GROWTH CONDITIONS OF GALLIUM ARSENIDE FILMS ON DIELECTRIC SUBSTRATES

(Article by A. A. Barybin, A. A. Zakharov, N. K. Nedev, Leningrad; Novosibirsk, III Simpozium po Protsessam Rosta i Sintezu Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 65)

In this paper the results of an experimental study of the growth of GaAs films on monocrystalline substrates of Al_2O_3, MgO and $Y_3Al_5O_{12}$ are discussed. The films were grown by the chemical transport method in the $GaAs-H_2O-H_2$ system on substrates with the following orientation: $\alpha-Al_2O_3-(0001)$, $(11\bar{2}0)$, $(11\bar{2}2)$; MgO-(001); $Y_3Al_5O_{12}$-(100), (110), (111). The different methods and conditions of chemical treatment of the dielectric substrates were tested and processed. In the experiment it was discovered that the higher quality films were obtained on substrates with advance application of a thin layer (0.3-0.5 microns) of GaIn alloy (9:1). The optimal results were obtained at substrate temperatures of 650° to 750°C, a source temperature 10-50 degrees higher and a partial vapor pressure of water (4-20) mm Hg. The x-ray diffraction and electron diffraction analysis demonstrated that the GaAs films had in the majority of cases monocrystalline or lump structure. The best film structures are obtained on the substrate planes indicated below with the following crystallographic correspondance: $(0001)-Al_2O_3||(111)GaAs$, $(11\bar{2}0)Al_2O_3||(100)GaAs$, (001) MgO||(001)GaAs, (100) $Y_3Al_5O_{12}||(100)GaAs$, $(111)Y_3Al_5O_{12}||(111)GaAs$. The electrophysical parameters of the films are the following: n-type $n = (10^{15}-10^{16})cm^{-3}$, $\mu_n \leq (2000-2500)$ $cm^2/v\text{-}sec$.

ZAKHAROV, A.A.

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