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

2/2 020 UNCLASSIFIED PROCESSING DATE---30OCT70

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),0,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),0,DICARBAUNDECABORANE (13), M. 348-50DEGREES. SIMILARLY WAS PREPD. CS SALT OF 6,(M,FLUOROPHENYL),0,DICARBAUNDECABORANE(13), M. 176-8DEGREES.

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

UNCLASSIFIED

USSR UDC 576.858.9(T2).098.396.07

KALININ, V. N., SURKOV, V. V., and TIKHONENKO, T. I., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, and Chair of Virology, Biology and Soil, Faculty Moscow State University

"Isolation, Purification, and Concentration of Internal T2 Bacteriophage Protein"

Moscow, Voprosy Meditsinskoy Khimii, Vol 17, No 4, 1972, pp 422-426

Abstract: Two methods were employed to isolate and purify internal T2 bacteriophage protein. The 1st employed chromatography on phosphorylated cellulose. Ultraviolet absorption spectra of the proteins obtained indicated contamination by DNA. Proteins were also contaminated with phosphocellulose degraded by the alkaline buffer with which the proteins were eluted. Because these contaminants could not be removed, another method was tried, employing electrophoresis in polyacrylamide gel with a homemade instrument. After 18 hours of electrophoresis, the resulting protein had a typical protein absorption spectrum. The protein appeared as 2 fractions, both with a sedimentation constant of 1.34S. Whether or not these are two different proteins is not known. Protein obtained by the second method is fully usable for physicochemical and biological research.
1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--NEUTRON DIFFRACTION STUDY OF ZIRCONIUM NITRIDE HYDRIDE -U-

AUTHOR-(05)-BYKOV, V.N., GOLOVKIN, V.S., LEVDIK, V.A., KALININ, V.P., MIRON, N.F.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 376

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--NEUTRON DIFFRACTION, ZIRCONIUM NITRIDE, HYDRIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0899 STEP NO--UR/0070/70/015/002/0376/0376

CIRC ACCESSION NO--AP0116409

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0116409

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZRN SUB0.36 H SUB0.80 WAS STUDIED BY NEUTRON DIFFRACTION TO DET. THE LOCALIZATION OF N AND H ATOMS AND THE EFFECT OF N ON THE DISTRIBUTION OF H ATOMS IN THE HYDRIDE LATTICE. THE CLOSEST AGREEMENT BETWEEN THE EXPTL. AND CALCD. DATA WAS OBTAINED FOR THE P6AR3M1 MODEL. THE N ATOMS ARE LOCATED ON THE OCTAHEDRONS EVERY OTHER LAYER AND H ATOMS ON ALL TETRAHEDRONS, BUT THE NO. OF H ATOMS IN THE LAYERS CONTG. N ATOMS IS 4 TIMES SMALLER THAN IN THE N FREE LAYERS.

UNCLASSIFIED

USSR

SHEVCHENKO, A. S., ANDRIYEVSKY, R. A., KALININ, V. P., and LYUTIKOV, R. A., Moscow

"Study of the X-Ray and Pycnometric Density of Interstitial Phases on a Zirconium Base"

Kiev, Academy of Sciences Ukr SSR, Poroshkovaya Metallurgiya, No 1, Jan 70, pp 89-91

Abstract: The results of an investigation of the X-ray (γ r) and pycnometric (γ_p) density of nitrides, carbides, hydrides, and carbo- and nitrohydrides of zirconium in a homogeneous field are presented. The density was measured on a vacuum pycnometer using ethyl alcohol. The measurement error was about 0.5%, and the scattering of experimental data on γ_p not more than $\pm$ 0.02 g/cm^3. Electrolytic zironium powder was used as the primary material. It was saturated with high purity nitrogen at 1300-1800°C for the production of nitrides. The hydrogen saturation was accomplished at 700-900°C, and the carbides were produced by a two-step synthesis of zirconium powder with graphite of spectral purity in a 10^{-6} mm mercury column vacuum at 1700-2000°C with intermediate pulverization.

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USSR

SHEVCHENKO, A. S., et al, Poroshkovaya Metallurgiya, No 1, Jan 70, pp 89-91

The ternary compounds were synthesized from Zr - ZrN and Zr - ZrC mixtures in a hydrogen medium at 900-1000°C. The variation in lattice parameters with the composition of the zirconium carbides and nitrides is presented in a table. On the basis of the results obtained it can be assumed that the defects of carbides, hydrides, and carbo- and nitrohydrides result from the incompleteness of the nonmetallic sublattice. In zirconium nitrides with a high content of nonmetallic impurities, the discrepancy between γ_r and γ_p may be due to the defect of the metallic sublattice, which disappears with increased material purity. Orig. art. has: 1 table and 13 references.

2/2

USSR

UDC 669.083.4

S

REZNYAKOV, A. A., ISAKOVA, R. A., YESYUTIN, V. S., NESTEROV, V. N., NECHIPORENKO, G. I., MOROZOV, I. F., ZHUKOV, P. I., ZAVADSKAYA, N. F., and KALININ, V. Ya.

"Increasing the Effectiveness of Vacuum Refining of Selenium"

K

Moscow, Tsvetnyye Metally, No 1, Jan 70, pp 54-57

Abstract: Data were obtained which confirm the results of previously conducted laboratory investigations regarding the possibility of producing high-quality commercial Se in a single operation. At 450° and a vacuum of 0.6 mm Hg, the output of the apparatus was 2 t/m^2 per day. The yield of high-quality Se was 80%; highly volatile fractions and mother liquor accounted for 15 and 5%, respectively. During prolonged operation of the apparatus the disks overgrown with shelliness, which formed as the result of the precipitation of metal selenides suspended in Se. An investigation of the filtration of fusion and vapors of Se showed that it is possible to produce high-quality commercial Se in a single operation. The process has been introduced into Se production.

1/1

USSR

UDC 535.581.3

KOLODEYEV, I. D., KALININ, V. YA., SUDOVTSOV, A. I., SHEVCHENKO, T. G.

"Setup for Studying Cryogenic Electromechanical Instruments and Devices"

Moscow, Pribory i Tekhnika Eksperimenta, No 5, 1972, pp 247-248

Abstract: An experimental device with a metal laboratory cryostat designed for studying superconducting electromechanical devices in liquid helium is described. The arrangement differs from those already known in the apparatus for operation of the investigated instruments and the cryostat in the neck of which there is a container with liquid N_2 acting as a heat shield over a helium bath. The application of this shield has permitted a significant reduction in the heat flux to the coolant and a 3 to fourfold increase in the possible time of the experiment without increasing the liquid helium flow rate. Prolonged operation of the device demonstrated that the germanium photodiodes and optical fiberglass light guides remain reliable for multiple repetitions of the filling of the cryostat with liquid helium and evaporation of it after completion of the experiment. The liquid helium level is signalled electronically by a light indicator. An audio signal is also used for the emergency level. The cryostat characteristics are as follows: helium tank volume 7 liters, volume of helium

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USSR

KOLODEYEV, I. D., et al., Pribory i Tekhnika Eksperimenta, No 5, 1972, pp 247-248

admitted to the cryostat 4.5 liters, inside diameter of the helium tank 130 mm, the reservoir for liquid N_2 holds 1.5 liters, and the evaporation of the He in the static mode is 0.45-0.5 liters/hour. A complete section view of the device is included.

2/2

USSR

UDC 621.385.632

KALININ, YU. A., KATS, A.M., RYKSHIN, B.V.

"Investigation Of The Dependence Of The Gain And Efficiency Of A TWT On The Radius Of The Electron Flow"

Elektron. tekhnika. Nauchno-tekhn.sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 8, pp 29-36 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A176)

Translation: The structure of the electron flow in a traveling-wave tube is investigated by photoregistration methods and a diaphragm with an aperture. A connection between the gain and efficiency of the device and the structure of the electron flow is experimentally established. The experimental results obtained are equal to the theoretical. 8 ref. S

1/1

USSR

UDC 621.385.032.26:621.385.63

BOROVKOV, YU. I., KALININ, YU. A., KATS, A.M.

"Investigation Of The Structure Of An Electron Beam In A Dynamic Regime By The Method Of An Iris With A Small Hole"

V sb. Vopr. elektron. tekhniki (Problems Of Electronics Technology--Collection Of Works), Saratov, 1970, pp 155-160 (from RZh--Elektronika i yeye primeneniye, No 6, June 1970, Abstract No 6a22)

Translation: A method is described for the use of an iris with a small hole for an analysis of the structure of an electron beam traveling-wave tube in a dynamic regime. Measurements were conducted in the flight channel and also in the collector area. The possibilities of the method are evaluated. Some experimental results are presented. Summary.

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USSR

UDC 621.385.032.26:621.385.5

RADYUK, O.M., MURAV'YEV, A.A., KALININ, YU.A.

"Evaluation Of The Effect Of Changes Of The Regimes Of A Gun On The Behavior Of An Electron Beam"

V sb. Vopr. elektron. tekhniki (Problems Of Electronics Technology--Collection Of Works), Saratov, 1970, pp 56-61 (from RZh--Elektronika i yeye primeneniye, No 6, June 1970, Abstract No 6A132)

Translation: It is shown that in a traveling-wave tube with periodic magnetic focusing, shrinkages (osedaniye) of the current of the gun in the decelerating system bear a local character. The shrinkage density of the current does not always depend on the over-all current of the shrinkage. Local shrinkages of the current are shifted in the system during change of operating conditions of the traveling-wave tube. Summary.

1/1

USSR

UDC: 621.373:530.145.6:621.317.17

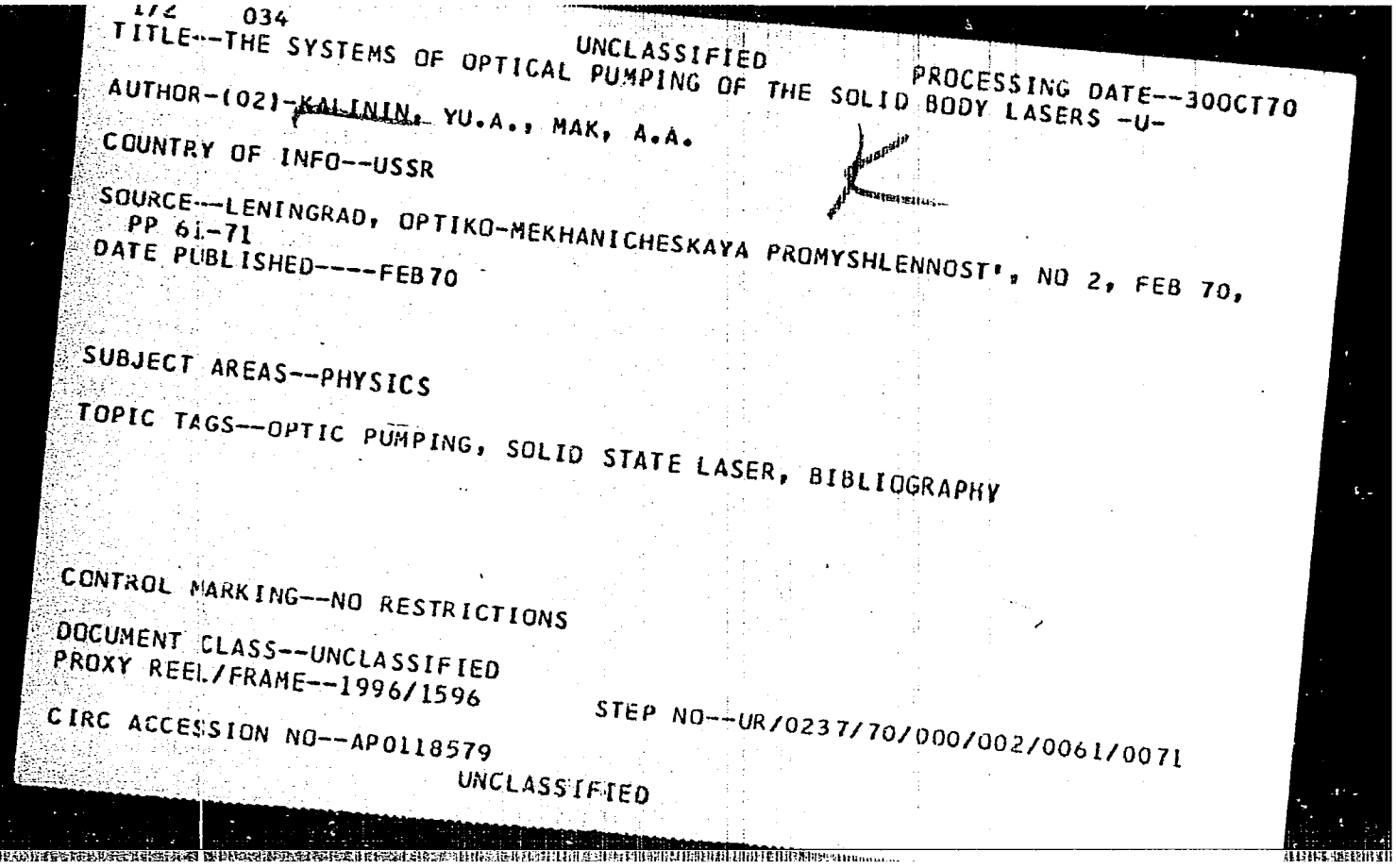
VALITOV, R. A., KALININ, Yu. A.

"A Wide-Band Calorimetric Meter for the Average Power of a Laser of the Straight-Through Type"

Dokl. Nauchno-tekhn. seminara. "Metrol. v radioelektron." Tezisy. Ch. 1 (Reports of the Scientific and Technical Seminar on Metrology in Radio Electronics. Summaries, Part 1), Moscow, 1970, pp 101-106 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7D249)

Translation: The authors describe the circuit and discuss the results of preliminary studies of the model of a calorimetric measuring device for the average emission power of a straight-through laser. A. K.

1/1



1/2 034 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE SYSTEMS OF OPTICAL PUMPING OF THE SOLID BODY LASERS -U-

AUTHOR-(02)-KALININ, YU.A., MAK, A.A.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, OPTIKO-MEKHANICHESKAYA PROMYSHLENNOST', NO 2, FEB 70, PP 61-71

DATE PUBLISHED----FEB70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--OPTIC PUMPING, SOLID STATE LASER, BIBLIOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1596 STEP NO--UR/0237/70/000/002/0061/0071

CIRC ACCESSION NO--AP0118579

UNCLASSIFIED

2/2 034 UNCLASSIFIED

CIRC ACCESSION NO--AP0118579 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW IS GIVEN OF WORKS DEALING WITH DESIGN AND STUDY OF THE SYSTEMS OF OPTICAL PUMPING OF THE SOLID BODY LASERS. THE MERITS AND SHORTCOMINGS OF BASIC DESIGNS OF THE PUMPING SYSTEMS IN USE AT PRESENT ARE DISCUSSED.

UNCLASSIFIED

USSR

UDC 621.385.632

GERASIMENKO, Yu. A., KALININ, Yu. A., KATS, A. M., KUDRYASHOV, V.P.

"Change Of Phase And Amplitude Of The Output Signal In A TWT During A Pulse"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 6, pp 86-94 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10A158)

Translation: The mechanism is considered of changes during a pulse, of the phase and amplitude of the output signal of a TWT resulting from ionization of residual gases by an electron beam. It is shown that the magnitude of the changes depends on the pressure of the residual gases and parameters of the TWT. An approximate calculation is given for the changes of phase and amplitude of the output signal in a pulse. Experimental results are presented. Summary.

1/1

UNCLASSIFIED PROCESSING DATE--03JUL70

TITLE--INVESTIGATION OF THE ANOMALOUS RESISTANCE OF A PLASMA DURING TURBULENT HEATING -U-

AUTHOR--KOLININ, YU.G., KINGSEP, A.S., LIN, D.A., RYUTOV, V.D., SKORYUPIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKIY FIZIKI, 1970, VOL 58, NR 1, PP 68-75

DATE PUBLISHED--------70

26
5
31

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TURBULENT HEATING, PLASMA PHYSICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1973/1070 STEP NO--UR/0056/70/058/001/0069/0075

CIRC ACCESSION NO--AP0038029
UNCLASSIFIED

Acc. Nr: AP0038029

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 68-75

INVESTIGATION OF THE ANOMALOUS RESISTANCE OF A PLASMA DURING TURBULENT HEATING

Yu. G. Kalinin, A. S. Kingsep, D. N. Lin, V. D. Ryutov, V. A. Skoryupin

The dependence of plasma resistance on initial conditions of the experiment during turbulent heating by a current is investigated. The plasma resistance decreases approximately as $n^{-1/2}$ with variation of the concentration between 10^{13} cm^{-3} and 10^{14} cm^{-3}. The resistance does not depend on the magnitude of the confining magnetic field when the strength of the latter varies between 5 and 21 kOe. The ratio of the current velocity to the ion beam velocity is calculated on basis of the experimental results. It changes from 1.5 to 10 on variation of the concentration from 10^{14} cm^{-3} to $5 \cdot 10^{11}$ cm^{-3}. The dependences obtained and turbulent heating are explained by assuming excitation of ion-acoustic instability in the plasma by a current.

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REEL/FRAME
19731070

14

USSR

UDC: 621.378.325

GORLANOV, A. V., KALININA, A. A., LYUBIMOV, V. V., ORLOVA, I. B., PETROV, V. F.

"Investigation of the Possibilities for Making Telescopic Laser Amplifiers With High Amplification Factors"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 17, No 4, Oct 72, pp 617-622

Abstract: Based on the theory of unstable resonant cavities, an investigation is made into the feasibility of attaining high amplification factors ($\sim 10^5$) in telescopic laser amplifiers. It is shown that when a single GOS-1001 light source is used, a three-pass amplifier is optimum, while the optimum number of passes is two for an amplifier using two such light sources. An amplification factor of approximately 160 000-200 000 is achieved (for a weak signal).

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USSR

UDC 576.851.48.095.38:576.851.315

POKROVSKAYA, M. P., EPSHTEYN-LITVAK, R. V., VIL'SHANSKAYA, F. L., RAKHMOVA, N.G. POSPELOVA, V. V., KUDRYAVTSEV, N. G., SIL'VERSTOVA, T. N., KALININA, A. M., and SYAIUK, V. F., Moscow Institute of Epidemiology and Moscow Municipal Sanitary Epidemiological Station

"In vitro Antagonistic Activity of E. coli (Strain M-17) and B. bifidum (Strain 1) Against El Tor Cholera Vibrios"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972, pp 54-59

Abstract: The antagonistic activity of E. coli (strain M-17) and B. bifidum (strain 1) against 11 El Tor cholera vibrio strains (Inaba serotype 6 and Ogawa serotype 5) was studied in mixed cultures in vitro. During the first 6 hours of combined cultivation of E. coli and a cholera vibrio strain both microbial species grew, but the number of live vibrios began to decrease after 24 hours and after 48 hours almost all were dead. B bifidum had a similar inhibiting effect on vibrio growth. In the presence of both antagonistic strains, all the vibrios died within 48 hours without reproducing in the initial period of cultivation. It is suggested that the antagonistic activity of the two strains under study might be duplicated in an intestinal biocenosis and that a preparation made from these microorganisms (a combination of colibacterin and

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USSR

POKROVSKAYA, M. P., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972, pp 54-59

bifidumbacterin) should, in principle, be an effective means of treating vibrio carriers and correcting the change in intestinal microflora observed in cholera.

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1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--THERMODYNAMIC STUDY OF SOLID PHASE DIOPSIDE FORMATION REACTIONS -U-

AUTHOR--(03)-BASOVA, N.S., ZHUNINA, L.A., KALININA, A.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 164-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMODYNAMIC ANALYSIS, SILICATE, CALCIUM, MAGNESIUM, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0845 STEP NO--UR/0363/70/006/001/0164/0165

CIRC ACCESSION NO--AP0118021

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118021

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMODYNAMIC POSSIBLITY OF DIOPSIDE FORMATION FROM VARIOUS STARTING COMPONENTS WAS INVESTIGATED. THE EQATIONS ARE SET UP SHOWING THE TEMP. DEPENDENCIES OF THE FREE ENERGY. THE UPPER TEMP. LIMIT WAS 1600DEGREESK. THE DELTA F VALUE OF THE DIOPSIDE FORMATION REACTION FROM ALK. EARTH CARBONATES AND QUARTZ GRADUALLY DECREASES WITH INCREASING TEMP., AND AT 1200-1600DEGREESK IT ACQUIRES NEG. VALUES, CHARACTERIZING THE POSSIBILITY OF THE REACTION TAKING PLACE IN THE DIRECTION OF THE DIOPSIDE FORMATION. THE ACTIVATION ENERGY OF THE PROCESS IS SIGNIFICANTLY GREATER THAN THAT OF THE DIOPSIDE FORMATION REACTION FROM METASILICATES OF CA AND MG. FACILITY: INST. KHIM. SILIKATOV IM. GREBENSHCHIKOVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--KINETICS OF THE CRYSTALLIZATION OF LITHIUM DISILICATE FROM SIMPLE AND COMPLEX GLASSES -U-

AUTHOR--(02)-FILLIPOVICH, V.N., KALININA, A.M.

K

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 351-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LITHIUM SILICATE GLASS, GLASS CRYSTALLIZATION, METAL OXIDE, NUCLEATION, SPHERULITE, REACTION KINETICS, LITHIUM COMPOUND, CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0503 STEP NO--UR/0363/70/006/002/0351/0356

CIRC ACCESSION NO--AP0107108

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0107108

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF LOW TEMP. HEAT TREATMENT AND OF CHEM. COMPN. ON CRYSTN. KINETICS OF LI DISILICATE FROM GLASSES OF THE COMPN. 26LI SUB2 O.X(MGO, CAO).(1-X)SIO SUB2 (WHERE O IS SMALLER THAN OR EQUAL TO X IS SMALLER THAN OR EQUAL TO 10 MOLE PERCENT) AT VARIOUS RATIOS OF THE ALKALI EARTH METAL OXIDES WAS STUDIED. RESULTS OF THIS WORK SHOW THAT THE EFFECT OF PRECRYSTN. HEAT TREATMENT IN THE INVESTIGATED GLASSES CONSISTS IN THE FOLLOWING: SLIGHTLY NOTICEABLE CRYSTALLITES NUCLEATE AND SLOWLY GROW DURING THE PROCESS AT 450DEGREES; THESE THEN AT 600DEGREES GROW RAPIDLY, AND NEW CRYSTALLITES FOR ALL PRACTICAL PURPOSES DO NOT NUCLEATE. AN INCUBATION PERIOD FOR THE NUCLEATION OF THE CRYSTALS IS OBSERVED IN ACCORDANCE WITH THE CLASSICAL THEORY FOR THE NUCLEATION OF A NEW PHASE. THE PRECRYSTN. HEAT TREATMENT HAS PRACTICALLY NO EFFECT ON THE GROWTH RATE OF THE SPHERULITES. COMPLICATING THE CHEM. COMPN. OF THE GLASS RESULTS IN A SIGNIFICANT CHANGE IN THE GROWTH RATE AND IN A SHARP DECREASE IN THE NUCLEATION RATE OF THE SPHERULITES. THE GROWTH RATE OF THE SPHERULITES IS APPROX. EQUAL IN GLASSES WITH EQUAL LI SUB2 O CONTENT. THE CAPABILITY OF THE INVESTIGATED GLASSES TO METASTABLE SEGREGATION HAS NO SIGNIFICANT EFFECT ON THE NUCLEATION RATE OF THE SPHERULITES.

UNCLASSIFIED

USSR UDC 620.17:669.71'5'721:620.176.251.1

BARANOV, N. S., KALININA, A. P., STEPANOV, G. A., and SHLYAMNEVA, I. A.

"Dependence of Mechanical Properties of Alloys in the System Al-Zn-Mg on Aging Modes"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1970, pp 32-34

Abstract: Results are presented from an investigation of the influence of heat treatment and preliminary natural aging modes before artificial aging on the mechanical properties of alloys in the Al-Zn-Mg system at 20° and -196°C. It is concluded that the heat treatment modes for alloys in the Al-Zn-Mg system which will be used at low temperatures can be selected so as to provide satisfactory properties at +20°C, since the properties at -196°C vary directly with the properties at +20°C. Artificial aging at 100°C for four hours followed by 7-9 hours at 150°C, with subsequent natural aging for 24 hours or more results in rather high strength properties and satisfactory plastic properties at -196°C.

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1/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--USE OF A FACTOR PLANNING METHOD FOR THE STUDY AND OPTIMIZATION OF A CATALYTIC PROCESS -U-

AUTHOR-(05)-BLANDIN, YU.V., KALININA, E.V., KUDRYAVTSEV, B.M., MUSHENKO, O.V., PLOTITSINA, L.V.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(3), 42-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYDROGENATION, FATTY ACID, ALCOHOL, CHEMICAL PLANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1487 STEP NO--UR/0065/70/015/003/0042/0045

CIRC ACCESSION NO--AP0112441

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112481

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD WAS APPLIED TO THE DIRECT HYDROGENATION OF SYNTHETIC FATTY ACIDS TO ALCS., BY USING THE FEED SPACE VELOCITY, BOTTOM REACTOR TEMP., MOLE RATIO OF FEED TO H, AND CONTENT OF FATTY ACIDS ASOVE C SUB16 IN THE FRACTION AS VARIABLES. THE OPTIMIZATION CRITERION WAS THE HIGHER PRODUCTIVITY OF THE PLANT, WHICH WAS 0.175 HR PRIME NEGATIVE1, 246DEGREES, AND RATIO 1:50, RESP. THE PRODUCTIVITY WAS THUS INCREASED BY 35PERCENT OVER THAT OBTAINED UNDER CONDITIONS SUGGESTED BY THE ALL UNION SCIENTIFIC RESEARCH INSTITUTE FOR PETROCHEMISTRY (0.13 HR PRIME NEGATIVE1).

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002201210005-8"

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--USE OF A STEP BY STEP DYNAMIC EXPERIMENT FOR DETERMINING THE OPTIMUM CONDITIONS OF A CATALYTIC PROCESS -U-

AUTHOR-(05)-BLANDIN, YU.V., KALININA, E.V., KUDRYAVTSEY, B.M., MAYOROV, D.M., MOROZOV, G.A.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERARAB. NEFTEKHIM. (MOSCOW) 1970, (2), 32-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYSIS, HYDROGENATION, FATTY ACID, CHEMICAL REACTOR, CHEMICAL PRODUCT PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0567 STEP NO--UR/0318/70/000/002/0032/0034

CIRC ACCESSION NO--AP0119485

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0119485
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD WAS APPLIED TO DIRECT HYDROGENATION OF FATTY ACIDS TO ALCS. USING FACTORIAL PLANNING BY MEANS OF A PILOT PLANT. THE MAX. PRODUCTIVITY, TAKEN AS OPTIMIZATION CRITERION, WAS OBTAINED AT 240DEGREES AT THE REACTOR BOTTOM INTAKE STOCK SPACE VELOCITY 0.3 ML-HR AND INTAKE STOCK H RATIO 1:700.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--3,4,BENZOPYRENE LEVEL IN SUNFLOWER AND COTTONSEED OILS -U-

AUTHOR-(05)-GRIGORENKO, L.T., DIKUN, P.P., KALININA, I.A., MIRONOVA, A.N., RZHEKHIN, V.P.

COUNTRY OF INFO--USSR

SOURCE--PRIKL. BIOKHIM. MIKROBIOL. 1970, 6(2), 142-50

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BENZENE DERIVATIVE, AROMATIC POLYCYCLIC HYDROCARBON, CARCINOGEN, VEGETABLE OIL, SMOKE, FOOD TECHNOLOGY, FOOD ANALYSIS, THIN LAYER CHROMATOGRAPHY, FLUORESCENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0109 STEP NO--UR/0411/70/006/002/0142/0150

CIRC ACCESSION NO--AP0135606

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135606

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYCYCLIC HYDROCARBONS WERE DETD. BY MODIFICATION OF A METHOD USED IN THE ANAL. OF SMOKED AND OTHER KINDS OF FOODS, CONSISTING OF SAPON. OF 50 G OIL WITH 25 G KOH AND 100 ML 96PERCENT ETOH 1-2 HR OVER BOILING, SEPN. OF THE NONSAPOND. FRACTION BY THIN LAYER CHROMATOG. ON AL SUB2 O SUB3 IN AN ASCENDING CURRENT OF ET SUB2 O, FOLLOWED BY QUANT. AND QUAL. FLUORESCENCE ANAL. THE 3,4-BENZOPYRENE CONTENT IN SUNFLOWER OIL OF VARIOUS ORIGINS VARIED WIDELY, BUT WAS MOSTLY 1-5 MU G-KG OIL. IT WAS ALSO FOUND IN COTTONSEED OILS. FACILITY: ALL UNION RES. INST. FATS, USSR.

UNCLASSIFIED

USSR

UDC 621.181.5:669.15.293-196

KALININA, L. T., KRIVOSHEYEV, V. A., and RUDNITSKAYA, V. I., Dnepropetrovsk Metallurgical Institute

"Phase Transformations in Additionally Alloyed Chrome-Nickel Roll Cast Iron in Isothermal Holdings"

Kiev, Metallofizika, No 32, 1970, pp 98-100

Translation: Curves of an isothermal decomposition of austenite in chrome-nickel roll cast iron alloyed with niobium (2.9% C, 0.4% Si, 0.8% Mn, 0.15% P, 0.02% S, 0.8% Cr, 3.9% Ni) were obtained. The mechanism of formation of anomalous structures in cast iron during high supercooling was examined.

It was established that during low supercooling (600-450°C) niobium lowers the stability of austenite, and during high supercooling (350-200°C), increases it.

The study made reveals a picture of the phase transformations in chilled cast iron alloyed with 0.3% niobium under isothermal conditions, which is important to know for the selection of the optimum conditions for cooling rolls in molds.

Bibliography: 7 entries, 2 illustrations

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1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--CAST IRON -U-

AUTHOR-(03)-MAYORNIKOV, A.V., KALININA, L.T., DEMIDOVICH, N.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,891

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

DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CAST IRON, CHEMICAL PATENT, CHEMICAL COMPOSITION, CARBON, SILICON, MANGANESE, CHROMIUM, COPPER, PHOSPHORUS, SULFUR, IRON, WEAR RESISTANT METAL, MAGNESIUM, METAL HARDNESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1831 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132096

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0132096

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CAST IRON WITH INCREASED STRENGTH, HARDNESS, AND WEAR RESISTANCE HAS THE FOLLOWING COMPN.: C 3.1-3.4, SI 4.3-4.8, MN 4.9-5.3, CR SMALLER THAN 0.1, CU 0.5-0.8, MG 0.04-0.06, P SMALLER THAN OR EQUAL TO 0.1, S SMALLER THAN OR EQUAL TO 0.01PERCENT, AND FE THE REMAINDER. FACILITY: DNEPROPETROVSKIY ORDENA TRUDOV KRASNOGO ZNAMENI GORNYY INSTITUT IM. ARTEMA.

UNCLASSIFIED

USSR UDC 532.7

NIKOLAYEV, N. I., KALININA, M. D., and CHUVILEVA, G. G., Scientific Research Physico-Chemical Institute imeni L. Ya. Karpov, Moscow

"Effect of the Concentration of the External Electrolyte Solution on the Diffusion of Counter Ions within Cationites"

Moscow, Zhurnal Fizicheskoy Khimii, Vol XLIV, No 12, Dec 70, pp 3110-3114

Abstract: Current attempts to explain observed variations in the mobility of ions in ionites by the sinuosity of the ion diffusion route alone are adequate in the case of the self-diffusion of water, the diffusion of an inert substance, or even the diffusion of co-ions; however, this approach will not explain the sharp shift in diffusion coefficients within the ionite phase of an external electrolyte.

The authors determined systematically the diffusion coefficients in the cation KU-2, with varying content of divinylbenzene, during the exchange of copper ions with hydrogen and sodium ions.

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USSR

NIKOLAYEV, N. I., et al., Zhurnal Fizicheskoy Khimii, Vol. XLIV, No 12, Dec 70, pp 3110-3114

It was found that the interdiffusion coefficients rise as the concentration of the external equilibrium solution increases. This is explained on the basis of a model of a friable quasi-crystal. Graphs are included to illustrate the experimental data.

2/2

USSR

UDC 576.858

SKARLAT, I. V., KALININA, NO., GINEVSKAYA, V. A., and AGOL, V. I., Moscow State University imeni M. V. Lomonosov and Institute of Poliomyelitis and Virus Encephalitides, USSR Academy of Medical Sciences, Moscow

"Synthesis of Virus-Specific Proteins in Cells Infected with Encephalomyocarditis Virus"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 3, Jan 71, pp 713-716

Abstract: Protein synthesis was studied in cells of ascites carcinoma Krebs-II, infected with encephalomyocarditis virus. The cells were infected with C^{14}-labled virus and then subjected to electrophoresis. Comparison studies involving incubation of infected and noninfected cells were conducted. Two virus-specific peptides formed in the infected cell correspond in electrophoretic mobility to structural proteins isolated from mature virus. No evidence of the low-molecular-weight, minor peptide entering into the composition of the virus particle was detected in an extract of the infected cells. The data found confirmed the hypothesis that a high-molecular-weight pepetide (or peptides) is the primary product of the translation of RNA. This high-molecular-weight peptide subsequently splits up into functionally active proteins. In later stages of virus particle formation, it is

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USSR

SKARIAT, I. V., et al., Doklady Akademii Nauk SSSR, Vol 196, No 3, Jan 71, pp 713-716

possible that the peptides are split into even smaller fragments. It is assumed that proteases participate in the breakdown of the primary polypeptide, which gives specificity to this process. Further studies are required to elucidate this point.

USSR

UDC 541.183.12

TUNITSKII, N. N., KALININA, M. D., POPKOV, YU. M., NIKOLAYEV, N. I., Scientific Research Physico-Chemical Institute imeni L. Ya. Karpov, Moscow, State Committee for Chemistry

"Ion-Exchange Kinetics on Ion-Exchange Resins in Solutions of Medium Concentrations"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 3, 21 Jul 70, submitted 6 Jan 70, pp 649-652

Abstract: A simple equation is introduced for the mean desorption time and experiments are described, on the basis of which the dependence of the diffusion coefficients of ions in a cationic ion-exchange resin on the concentration of the solution can be calculated. The steady flow method was used for calculation of the mean desorption time. The calculations were tested in an experiment of self-diffusion of sodium and copper ions on a cation-exchange resin of 0.6 mm particle diameter in the swollen state. It was found that the self-diffusion coefficients of Na^+ and Cu^+ increase with increasing concentration of the surrounding solution.

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USSR UDC 612.822.1

ALYUKHIN, YU. S., and KALININA, M. K., Laboratory of Temperature Regulation, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR

"Brain Tissue Respiration During Hypothermia"

Leningrad, Fiziogicheskiy Zhurnal SSSR imeni I. M. Sechenov, No 1, 1970, pp 19-25

Abstract: Oxygen consumption by the brains of nonanesthetized white rats was determined by shifts in venous outflow and by analysis of blood gases at brain temperatures of 20, 27 and 37° C, while the animals breathed air or a hypoxic mixture. The brain venous blood pO_2 was measured at the same time. Oxygen consumption decreased as a result of cooling in direct proportion to the drop in temperature. The blood pO_2 decreased during hypothermia but even the lowest brain tissue pO_2 remained close to the normal level. During deep hypothermia (20° C), oxygen consumption by the brain was independent of both the brain venous blood pO_2 (in a range of 9-32 mm Hg), and the lowest brain tissue pO_2 (in a range of 5-28 mm Hg). During moderate hypothermia (27° C) a slight oxygen insufficiency developed, due to the brain's increased need for oxygen.

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USSR UDC 591.112.2

AVAZBAKIYEVA, M. F., and RYMZHANOV, K. S., Kazakh State University imeni S. M. Kirov

"Electrocardiogram of Dogs Exposed to Progressive Hypoxia"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Biologicheskaya, No 1, 1970, pp 60-62

Abstract: Electrocardiograms were recorded in 18 dogs while they were exposed to steadily increasing hypoxia (elevation to simulated altitudes of 1000-9000 m above sea level). At 1000 and 2000 m, no changes were detected in excitability and conduction of excitation in the myocardium. At 3000-6000 m, the EKG showed a decrease in the voltage of the P and R waves. The PQ and QRS intervals were more or less unchanged. The Q-T interval was slightly shortened, while the systolic index grew. The voltage of the S and T waves decreased. At 5000 m, the positive T wave became isoelectric in a number of cases, but at 6000 m changed to negative. The PQ and QRS waves remained almost unchanged, while the Q-T interval decreased. The systolic index increased up to 6000 m, but decreased at 7000-9000 m. At the same time, the voltage of the P and R waves decreased to 1/2

Acc. Nr: AP0044181 Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskiy Zhurnal, 1970, Vol 56, Nr 1, pp 19-25

BRAIN TISSUE RESPIRATION IN HYPOTHERMIA

By Yu. S. Alyukhin and M. K. Kalinina

From the I. P. Pavlov Institute of Physiology, USSR Ac. Sci., Leningrad

The venous outflow method and blood gas analysis were used to investigate brain oxygen uptake in un-anaesthetized rats at brain temperatures 37°, 27° and 20° C under conditions of breathing normal air or hypoxic gas mixture, containing 6% O_2. The simultaneous determination of brain venous pO_2 was made by means of a polarographic electrode. The modification of Krogh—Erlang's formula was used to calculate the lowest pO_2 of the brain tissue. It was shown that brain oxygen uptake in hypothermia decreases linearly with temperature fall. Although the blood pO_2 in hypothermia falls, the lowest brain tissue pO_2 remains at the normal level. Nevertheless at brain temperature 27° some oxygen deficiency is possible because of a relative increase of the brain oxygen need. At brain temperature 20° the brain oxygen uptake remains unchanged even when the brain venous pO_2 falls up to 9 mm Hg, and the lowest brain tissue pO_2 — up to 5 mm Hg. The causes of this independence and of the related increased resistance of hypothermic animals to hypoxia are discussed.

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2 MT

USSR UDC 615.212.4.015:/612.557-06:612.592.1

BYSTROVA, L. N., and KALININA, N. A., Laboratory of General Pathophysiology of the Division of General Pathology, Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"Characteristics of the Action of Antipyretics on the Thermal Regulation Reactions and the Course of Fever in Animals Adapted to Cold"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, May/Jun 73, pp 72-73

Abstract: In experiments on rabbits adapted to temperatures of 2-4° for 7-14 days, administration of pyrogenal to the animals induced a more pronounced fever reaction than that in non-adapted controls. The antipyretic action of pyramidon on the cold-adapted rabbits with induced fever was also more pronounced vs. that on non-adapted controls to which pyrogenal had been administered. The thermal regulation centers of the rabbits adapted to cold had apparently a heightened sensitivity to the action of both pyrogens and antipyretics similar to that which had been established for rabbits with hyperthyreosis.

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USSR

KALININA, N. A.

"Hierarchy in Systems of Symbolic Action"

Vychisl. Mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Technology -- Collection of Works], No 3, Khar'kov, 1972, p 70 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V656, by the author).

Translation: Two problems are studied, concerning the organization of symbolic action systems -- the problem of hierarchy and the problem of the purpose of such systems.

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USSR

KALININA, N. A.

"The ANALITIK Systems Program"

Vychisl. Mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Technology -- Collection of Works], No 3, Khar'kov, 1972, pp 33-37 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V693, by the author).

Translation: A brief description is presented of the language, data structure and algorithms of analytic transforms in the ANALITIK experimental programming system for the AIST-0 computer.

UDC 575.24:576.851.5

USSR

PROZOROV, A. A., KALININA, N. A., and SHILINA, V. N., All-Union Scientific Research Institute of Genetics and Selection of Industrial Microorganisms, Moscow

"Investigation of Bacillus subtilis Mutants With Aetered Capacity to Form Competent Cells"

Moscow, Genetika, Vol 7, No 12, 1971, pp 83-93

Abstract: A total of 110 almost completely incompetent mutant strains were separated from the parent strain Bacillus subtilis SB-25. Most of them lacked the competence-inducing factor, were incapable of spontaneous autolysis as a result of the absence of the lytic enzyme and because of a restructured cell wall, and displayed altered sporulation. In some mutants with inhibited autolysis, the transformation capacity was partly restored after addition to the culture of a small quantity of lysozyme. The competence of a few mutants was increased as a result of a higher concentration of the competence factor. In several mutants, the causes of their inhibited competence could not be elucidated. Evidence indicates that the competence factor is not identical with the autolytic enzyme and that the role of autolysis in the process of transformation cannot be reduced to the secretion of the competence factor.

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UDC 612.544-06:576.851.252.097.29

USSR

GRAMENITSKAYA, Ye. S. and KALININA, N. A., Department of General Pathology, Institute of Experimental Medicine, Academy of Medical Sciences SSSR, Leningrad

"Mechanism of Action of Staphylococcus Toxin on the Heat Exchange of the Organism"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, May/June 70, pp 65-66

Translation: It has been shown in previous work that in cases of chronic diphtheria intoxication, a discrepancy in the data of direct and indirect calorimetry (with a predominance of actual heat production) is observed. Introduction of minimal doses of diphtheria toxin (DT) into the lateral ventricle of the brain also caused a breakdown in overall metabolism and in the metabolism of liver mitochondria, which are typical for diphtheria intoxication.

Since staphylococcus toxin, when administered intravenously, also produces intensified heat production, which is inadequate according to the calculated oxygen requirement, it was of interest to examine how intraventricular introduction of this toxin would affect metabolism when any peripheral action was excluded.

Method. A total of 45 calorimetric tests were run on rabbits weighing 2.6-3 kg. Staphylococcus toxin was intravenously administered in a dose of 0.1 ml/kg. For intracerebral administration, the rabbits were first given a cannula in the

USSR

GRAMENITSKAYA, Ye. S. and KALININA, N. A., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, May/Jun 70, pp 65-66

lateral ventricle. In this case, the toxin was administered in amounts of 0.01 ml in a volume of 0.1 cm^3, diluted with 0.8% physiological saline.

Rectal temperature was measured with an electrothermometer, with the probe inserted 3 cm into the rectum or in a calorimeter with a thermocouple. Heat exchange was determined in a calorimeter of the LITMO system. The overall gas volume was determined according to Pashutin.

Results and Discussion. As in previous studies in our laboratory, the body temperature rose within 15-30 min of intravenous administration of staphylococcus toxin. The maximum rise was achieved within 3-4 hours (an average of 1.3°). When the toxin was administered intracerebrally, within the first 1.5 hours (on the average), a slight drop in body temperature was observed (on the average of 0.3°C) which was followed by an average increase of 1°C.

Study of heat exchange in animals after intravenous administration of staphylococcus toxin confirmed that together with the temperature effect, a sufficiently pronounced excess ($p < 0.05$) of actual heat production takes place beyond the one calculated according to the required oxygen. With intracerebral administration of the toxin, no significant differences were observed in the direct and indirect heat

GRAMENITSKAYA, Ye. S., and KALININA, N. A., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, May/Jun 70, pp 65-66

measurement.

Thus, it is clear that, contrary to the effect of diptheria toxin, during intoxication with Staphylococcus toxin, the direct effect of the toxin on paraventricular brain structures does not play an essential role in the development of excess heat production with respect to the level of gas exchange. The observed disturbances in heat exchange when the toxin is administered intravenously are a result of apparently one or another peripheral mechanism.

The development of initial hypothermia upon intracerebral administration of Staphylococcus toxin, which is absent when a number of vaccines purified of bacterial and endogenic pyrogens are introduced by this route, substantiates the assumption of its toxic effect on the temperature-regulating brain structures.

It is possible that this also explains the lag in body temperature rise when the toxin is administered in this manner. Nevertheless, it is impossible to exclude completely intermediate mechanisms (for instance, a leukocyte reaction) in the development of fever during the local effect of Staphylococcus toxin on the brain. This problem requires further study.

USSR

UDC 613.632+615.917-057]:547.241

KALININA, N. I.

"Toxicity of the Organophosphorus Plasticizers Tributyl Phosphate and Di(2-Ethylhexyl) Phenyl Phosphate"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 8, Aug 71, pp 30-33

Abstract: The toxic effects of these two plasticizers (TBP and DEPP) were studied on rabbits, rats, and guinea pigs. When applied to the skin, they cause poorly healing ulcers. Absorption of these compounds through the skin or prolonged inhalation of their vapors causes severe disorders of the central nervous system (greatly increased excitability), liver (decreased albumin concentration and reduced elimination of bromosulfalein from blood), and kidneys (reduced elimination of NPN and hematuria). Additional disorders observed in chronic intoxication include loss of body weight, decrease in the concentration of proteins in blood, and histological changes in the brain, liver, and kidneys. However, even after intravenous or intraperitoneal injections of lethal doses, inhibition of cholinesterase is too small (35-43%) to account for the death. The compounds probably exert their toxic effects by setting

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USSR

KALININA, N. I., Gigiyena Truda i Professional'nyye Zabolevaniya, No 8, Aug 71, pp 30-33

stored acetylcholine free. Nevertheless, with normal use, these compounds cannot produce acute intoxication, by virtue of their low volatility. TBP should be classified as a moderately toxic and DEPP as a slightly toxic compound. The latter may be recommended for wider industrial use.

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ACC. NR: AP0036439 Ref. Code: UR 0213

PRIMARY SOURCE: Okeanologiya, 1970, Vol 10, Nr 1, pp 20-29

B. A. SHULYAK, S. M. ANTSYFEROV, S. P. KAZAKOV, N. K. KALININA
V. I. LAZAREV

THE DIFFERENTIAL CHARACTERISTIC OF THE ASYMMETRY OF ORBITAL VELOCITIES OF THE INFINITE-LENGTH WAVE STREAM

Summary

The experimental methods to study phase and orbital velocities of gravity waves in a ring-shaped channel are discussed. Data are presented on the differential characteristic of the asymmetry of orbital velocities for both the ring-shaped and the linear channels. A good coincidence with the formulae of Stockes and Longuet-Higgins has been obtained for the bottom layer only at the phase points $\theta_1=\frac{\pi}{2}$ and $\theta_2=\frac{3}{2}\pi$. The experimental data for other phase points and in particular for $\theta_3=\pi$, disagree with the theory.

D.h.

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19721285

USSR

UDC 621.391.81+523.503

KALININA, N.N.

"To The Problem Of Determining The Height Of The Reflecting Point Of A Meteor Trail"

V sb. Rasprostraneniye UKV v gornoy mestnosti (Propagation Of Ultrashort Waves In Mountainous Region--Collection Of Works), Frunze, Izd-vo "ILIM," 1971, pp 67-70

Abstract: On the basis of the known formula of T.S. Kaiser for the atmospheric pressure at the point of maximum vaporization of a meteoric body and the density distribution of a standard atmosphere at a height, the author derives a formula for determining the characteristic height (height of the point of maximum ionization of the weakest meteor which is detected by a given apparatus), valid only for large meteoric particles moving with sufficiently large velocities. In the process, with an exponent n for the meteor velocity, the ionization coefficient in the formula receives a value equal to 3. In the case of particles with small masses, for which there is substantial braking, the author uses the finished formula of G.I. Hawkins and R. V. Jouthworth in order to determine their characteristic height h_m after having determined the value of the constant in this formula. For the

USSR

KALININA, N. N., Rasprostraneniye UKV V gornoy mestnosti (Propagation Of Ultrashort Waves In Mountainous Region--Collection Of Works), Frunze, Izd-vo "ILIM," 1971, pp 68-70

transition value of the electron density a = 0.75 . 10^{14} el/m, the velocity of the meteor U = 40 km/sec and the zenith angle of the meteoric radiant z = $27^{\circ}5$, both formulas cited gave one and the same value h_m = 96 km equal to that observed, which proved thereby to be the limit for a given velocity. It is also shown that with an increase of the velocity, the limiting value of the height h_m is displaced with respect to height to the side of an increase and with respect to stellar magnitude -- to the side of a decrease. 1 fig. 12 ref.

2/2

Electromagnetic Wave Propagation

USSR UDC 621.391.81

KALININA, N.N.

"Effect Of Mountainous Obstacles On The Power Of The Signal Received And The Duty Cycle During Meteoric Propagation Of Ultrashort Waves"

V sb. Rasprostraneniye UKV V gornoy mestnosti (Propagation of Ultrashort Waves in Mountainous Region--Collection of Works), Frunze, Izd-vo "ILIM," 1971, pp 54-66

Abstract: For the particular case when a mountainous obstacle occurs as an opaque screen in the form of a wedge it is shown with the use of methods well known to physical optics of computation of a diffraction field (by "reflecting" and "four-ray" treatment) that the presence of mountains in the path of meteoric propagation of ultrashort waves of the meter band on a mountainous route causes a change of power of the signal received and of the duty cycle. Formulas are given for determination of their coefficients of diffraction attenuation. Using the actual Frunze--Dushanbe route as an example, the approximate losses are determined of the total duty cycle (for all the permissible region) on the mountainous route in comparison with a level route of the same length. It is found that the largest part of the losses of the total duty cycle occurs because of diffraction phenomena in the mountains, and an

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USSR

KALININA, N. N., Rasprostraneniye UKV V gornoy mestnosti (Propagation of Ultrashort Waves in Mountainous Region--Collection of Works), Frunze, Izd-vo "ILIM," 1971, pp 54-66

insignificant part because of the effect of "shading" by them of part of the permissible region. The author thanks K.V. Kostylev for some computed data. 4 fig. 1 tab. 4 ref.

2/2

USSR UDC 669.187.5

CHERNYAVSKAYA, S. G., KALININA, N. YE., SULIMENKO, A. V., and DOMORATSKIY, V.A.

"Cold Brittleness of 1Kh16N4B Steel"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 1(79), Jan/Feb 73, pp 38-39

Abstract: The critical brittleness temperature for 1Kh16N4B steel produced by electroslag melting was -100°C and -80°C in the longitudinal and transverse directions, respectively (rods 150 mm in diameter were studied). The critical brittleness temperature for the same type of steel produced by electric arc smelting was -80 and -60°C in the longitudinal and transverse directions, respectively. A decrease of the critical temperature in the first case by 20°C is attributed to a higher steel purity with respect to sulfur, phosphorus, and gases.

USSR

UDC 533.6:532.526

KALININA, S. V., and KORNILOV, V. I. (Novosibirsk)

"Influence of the Sweepback Angle and the Unit Reynolds Number Upon the Boundary-Layer Transition at Supersonic Velocities"

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 1, 1073, pp 159-162

Abstract: Experimental research, conducted at the Institute of Theoretical and Applied Mechanics of the Siberian Department of the Academy of Sciences, USSR, on the combined influence of the sweepback angle and the unit Reynolds number upon the position of the boundary-layer transition on a swept wing within a wide range of the values of $(U/\nu)_\infty$ at M_∞ of 3 and 4 showed that with an increase of the sweepback angle, the position of the boundary-layer transition rapidly shifts to the leading edge of the wing. The obtained results agree satisfactorily with the data of other authors. As also on a flat plate, on straight wings the Re^* number increases continuously with an increase of the unit Reynolds number $(U/\nu)_\infty$. At large sweepback angles $\chi \geqslant 40^\circ$, the tendency for the Re^* number to rise decreases substantially. 6 figures. 1 table. 5 references.

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USSR UDC 533.6:532.526

KALININA, S. V., and KORNILOV, V. I. (Novosibirsk)

"Influence of the Sweepback Angle and the Unit Reynolds Number Upon the Boundary-Layer Transition at Supersonic Velocities"

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 1, 1073, pp 159-162

Abstract: Experimental research, conducted at the Institute of Theoretical and Applied Mechanics of the Siberian Department of the Academy of Sciences, USSR, on the combined influence of the sweepback angle and the unit Reynolds number upon the position of the boundary-layer transition on a swept wing within a wide range of the values of $(U/\nu)_\infty$ at M_∞ of 3 and 4 showed that with an increase of the sweepback angle, the position of the boundary-layer transition rapidly shifts to the leading edge of the wing. The obtained results agree satisfactorily with the data of other authors. As also on a flat plate, on straight wings the Re^* number increases continuously with an increase of the unit Reynolds number $(U/\nu)_\infty$. At large sweepback angles $\chi \geq 40^\circ$, the tendency for the Re^* number to rise decreases substantially. 6 figures. 1 table. 6 references.

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USSR

UDC 621.385.632

POLYAKOV, O. S., KALININA, T. I.

"Suppression of Temporary Harmonics in Traveling-Wave Tubes with the Aid of a Filter-Diplexer"

V sb. Vopr. elektron. tekhniki (Problems of Electronic Technology--Collection of Works), Saratov, 1970, pp 70-73 (from RZ--Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A137)

Translation: A method is considered for reduction of the level of harmonics based on use of filter loads when the high-frequency channel [trakt] contains a load in conjunction with a filter-diplexer. With the input matched in a wide band, the filter assures attenuation less than 0.5 db in 25 percent of the frequency band and greater than 20 db outside of its scope, with a level of power going through in a steady regime greater than 500 watt. The filter-diplexer is a combination of band-pass and band-elimination filters. The filter-diplexer which was developed assures a decoupling $\geqslant$ 20 db between the input and output at frequencies corresponding to the 2-3 harmonics of the corresponding signal. Use of such a filter-diplexer in the power load of a TWT of continuous operation reduces the level of the higher harmonics to 13--50 db. The stability of operation of a TWT on a filter load is noted. 1 ill. 3 tab. 6 ref. G.B.

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USSR

UDC 632.954.4

RASKIN, M. S., and KALININA, Ye. A.

"Herbicide Entry From the Soil Into Plants With Presprouting Application"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 6, 1972, pp 53-56

Abstract: Investigation was conducted to determine zones of herbicide absorption in beans, oats, and corn, using the following predetermined optimal dosages of the indicated herbicides: .2 mg. of trysben 200 or dianat and .01 mg. of tordon, for beans; 5 mg. of trysben, 10 mg. of dianat, .5 mg. of tordon and 3 mg. of simazine, for oats; 20 mg.of trysben or dianat and 1 mg. of tordon, for corn. All were added to 1 kg. of absolutely dry soil, then placed in wax paper cups so that the root system was in a larger cup and the upper plant was isolated in a cup above it. Tests were conducted in a greenhouse at 20-23° with alternating light and darkness for 12 hours each. Soil mossture was maintained at 60% of absolute saturation. It was determined that dianat, trysben 200, and simazine, when applied through the soil before sprouting, entered the monocotyledons oats and corn only through the roots; no herbicide penetrated the sprouts going through toxic soil layers. The herbicides entered the dicotyledon beans mainly through the roots, but partially also through the hypocotyl and cotyledons.

1/1

USSR

UDC 632.954:543.9

ABRAMOVA, K. A., PANASYUK, T. D., and KALININA, Ye. A.

"Determination of Tardon 22-K in Soil and in Plants by the Biological Method"

Moscow, Khimiya v Sel'skom Khozyaistve, No 4, 1973, pp 58-60

Abstract: The content of tardon 22-K (3,5,6-trichloro-4-aminopicolinic acid) in soil and in plants was determined by the change of the area of smooth margin leaf of bean plants. The sensitivity of this test is 0.003-0.004 mg/kg for the determination of the content of tardon in soil; in plants the sensitivity depends on the volume of the composted sample. It has been established that the concentration of tardon in the straw of winter wheat was several fold higher than in the soil.

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ENERGY CHARACTERISTICS OF THE ENRICHMENT OF AIR WITH OXYGEN -U-

AUTHOR-(02)-BRODYANSKIY, V.M., KALININA, YE.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., ENERG. 1970, 13(1), 60-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, ATMOSPHERIC SCIENCES

TOPIC TAGS--AIR, OXYGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1543 STEP NO--UR/0143/70/013/001/0060/0064

CIRC ACCESSION NO--AP0125169

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125169

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ENERGY CHARACTERISTICS OF 2 LOW TEMP. RECTIFICATION METHODS FOR THE ENRICHMENT OF AIR WITH O WERE COMPARED BY USING A ENERGY CONCN. DIAGRAM OF THE N-O MIXT. THE INDIRECT METHOD IS BASED ON THE PRODUCTION OF AN ENRICHED AIR WITH A HIGHER O CONCN. THAN NEEDED AND THE DILN. OF THE ENRICHED AIR TO THE CONCN. NEEDED. THE DIRECT METHOD IS BASED ON THE DIRECT PRODUCTION OF ENRICHED AIR WITH THE REQUIRED O CONCN. FOR PRODUCING ENRICHED AIR 30-50 VOL. PERCENT O, THE INPUT OF WORK IS SIGNIFICANTLY LESS IN THE CASE OF THE DIRECT METHOD THAN IN THE CASE OF THE INDIRECT METHOD. WITH CONCNS. LARGER THAN 50 VOL. PERCENT O, THE WORK INPUT OF BOTH METHODS IS NEARLY THE SAME. FACILITY: MOSK. ENERG. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR UDC 616-036.867-053.9

KHVILIVITSKAYA, M. I. and KALININA, Ye. V. Leningrad Scientific Research Institute for Work Capacity and Organization of the Work for Invalids

"Work Rehabilitation of Aged and Senile Persons"

Moscow, Sovetskaya Meditsina, Vol 33, No 7, Jul 70, pp 65-67

Abstract: It is generally agreed that suitable employment has a beneficial effect on the general physical and mental state of old persons (men aged 60-69 and women aged 55-64) and the senile. The requirement for suitable employment raises a number of questions which should be resolved as soon as possible. A study of aged and senile persons has revealed that, in spite of the gradual deterioration of all organs which is associated with old age, the desire to be active usually remains strong. Most old people who continue to work prefer to continue in the jobs in which they are experienced, regardless of whether intellectual pursuits or manual work in industry or agriculture is involved. Nonetheless, the total work load should be reduced as strength declines. Such an approach will offer work opportunities to those aged individuals who seek but cannot find employment. One possibility is to establish a special work category for the aged, analogous to that for certain disabled persons. Another alternative would be to build special workshops adjacent to homes for the aged with the objective of having short distances between home, job, and eating facilities, and to arrange for both short and extended rest periods during the working day.
1/1

USSR UDC 669.293:669.018.2+537.311.3:669.787

YERMAKOVA, M. P., KALININA, Z. G., and NESTERENKO, A. G.

"Study of the Effect of Small Quantities of Oxygen on the Properties of Niobium"

Elektron. tekhnika. Nauchno-tekhn. sb.. Materialy (Electronics Engineering. Collection of Scientific and Technical Works: Materials), 1970, vyp. 5, pp 6-9 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I762 by authors)

Translation: A procedure was devised for introducing small quantities of O into Nb by the anodizing method. Data were obtained on the effect of small O concentrations (0.001-0.1%) on the hardness, microhardness, and electrical resistance of Nb. The results make it possible to determine the O concentration of Nb by simply measuring the physical properties of the metal.

USSR

UDC: 669.245:620.183

KALININA, Z. M., VERTIY, I. G., KHISMATULLINA, N. S., LONGINOV, M. F., SERGEYEVA, L. V., FILATOV, B. A., ARTEMOVA, S. P., Chelyabinsk

"Influence of Magnesium on the Structure of Heat-Resistant Nickel-Based Alloys"

Izvestiya Akademii Nauk SSSR, Metally, No 4, Jul-Aug 73, pp 193-196.

Abstract: The influence of magnesium on the structure of nickel alloys was studied under the assumption that magnesium is concentrated primarily along the grain boundaries and in areas of other defects of the crystalline lattice. Assuming that a very slight concentration of magnesium could produce an excess of magnesium at these defect locations and thus hinder the separation of carbides and other excessive phases in these locations, facilitating their more even distribution through the entire volume of the alloy, the authors turned primary attention to the study of the influence of magnesium on the form, dispersion and nature of distribution of excess phases in the solid solution. It was found that the optimal addition of magnesium to heat resistant nickel-based alloys decreases dendritic liquation, makes the excess phases finer and facilitates their more even distribution. This

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Kalinina, Z. M., Vertiy, I. G., Khismatullina, N. S., Longinov, M. F., Sergeyeva, L. V., Filatov, B. A., Artemova, S. P., Izvestiya Akademii Nauk SSSR, Metally, No 4, Jul-Aug 73, pp 193-196.

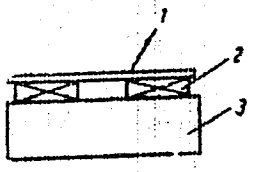
increases the technological plasticity and long-term strength of the metal. Excess alloying or enrichment of alloys with magnesium from the slag and lining in the furnace cause an increase in local chemical heterogeneity, in turn causing the appearance of new excess phases, decreasing the melting point of the metal in the area of these phases and reducing technological plasticity.

AA0044748 Kalinkin, G.N.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 2/70

243974 RECEIVER FOR ACOUSTIC SIGNALS. When an acoustic signal is applied to the diaphragm (1), eddy currents are generated in it. Their interaction with the magnet (3) magnetic field generates an e.m.f. in the coil (2). As the diaphragm mass is small, the receiver reproduces without distortion the shape of the applied signal within a wide frequency range.



20.10.67 as 1191772/18-10. BAKSHEEV.A.F.et alia. KUIBYSHEV PETROLEUM IND.RES.INST.(3.10.69) Bul 17/ 14.5.69. Class 42s. Int.Cl.H 06b.

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19771511

AA0044748

AUTHORS: Bashkeyev, A. F., Yerusalimskiy, I. N., Kalinkin, G. N., Kudashev, N. V., Laptev, V. V., Sakharov, Yu. I., Fedoseyev, A. N., Tslav, L. Z.

Kuybyshevskiy Nauchno-Issledovatel'skiy Institut Neftyanoy Promyshlennosti

9/2

19771512

USSR

UDC 681.3.055

KALINKIN, I. P., SELEZNEV, G. D., and TRIFONOVA, L. S.

"A Counting Device Which Retains Information When Power is Interrupted"

USSR Author's Certificate No 364112, klH 03 k 23/10, filed 16 Aug 71, published 21 Mar 73 (from RZh Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, abstract No 11 A364 P)

Translation: A counting apparatus which retains information during power interrupts is proposed, containing a single pulse generator, flipflops, memory elements, and a delay line. To extend the logical capabilities, inhibit and assembly circuits are included, with the output of the single pulse generator connected to one of the regulating inputs of the flipflops and through one of the delay lines to the inputs of the read elements of the memory and to one of the inputs of the assembly circuit.

The other input of this last circuit is connected to the "command reading" bus, with the output of the assembly circuit connected through a second delay line to the signal inputs of the inhibit circuits; the controlling inputs of the latter are connected to the outputs of the flipflops, while the outputs of the inhibit circuits are connected to the inputs of the memory elements, the outputs of which are connected to the secondary regulating inputs of the flipflops. One illustration. 1/1

KALINKIN, I. P.

JPRS 5928

6.73

V-12. EPITAXY OF FILMS OF CHALCOGENIDE COMPOUNDS OF CADMIUM IN A QUASI-CLOSED SPACE

[Article by Yu. F. Vashovskiy, I. P. Kalinkin, K. K. Muzyl'yeva, V. B. Aleksovskiy, Leningrad; Novosibirsk, III Simpozium po Prostranstvennym Reshetkam i Sintezu Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 631]

A study was made of the epitaxial growth of sulfide, selenide and telluride compounds of cadmium on mica substrate by condensation from the gas phase in a quasi-closed space in the temperature range of T_s = 30-700°C, T_{true} = 400-750°C.

1. The film morphology and structure, the phase composition of the films as a function of T_s and T_{true} were investigated. The growth regions of the cubic, hexagonal and mixed (cubic plus hexagonal) monocrystalline films were investigated. It was demonstrated that in the quasi-closed volume it is possible to synthesize epitaxial films at low substrate temperatures. Under conditions close to thermodynamic equilibrium, films grow the electrophysical properties of which are close to the properties of single crystals.

2. The dependence of the growth rate (w) of the epitaxial films on T_s ($w = f(T_s)$ for T_{true} = const is of a complex nature and is satisfactorily explained beginning with the theory of the growth kinetics of semiconductor films developed by L. N. Aleksandrov.

3. The proposed method of synthesizing the films permitted quantitative tracing of the effect of the excess pressure of each of the gas phase components (cadmium, sulfur, selenium, tellurium) on the epitaxy of the cadmium chalcogenide films. A study was made of the interrelation between a) $P_E = f(P_{Cd})$ for T_s = const, T_{true} = const) and the gas phase composition and the film morphology.

1/2 030 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--GROWTH AND STRUCTURE OF SINGLE CRYSTAL FILMS OF CADMIUM AND ZINC CHALCOGENIDES -U-
AUTHOR-(05)-MURAVYEVA, K.K., KALINKIN, I.P., SERGEYEVA, L.A., ALESKOVSKIY, V.B., BOGOMOLOV, N.S.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 434-40

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--MICA, CADMIUM, ZINC, SINGLE CRYSTAL FILM, VAPORIZATION, THERMAL EFFECT, MOLECULAR WEIGHT, SINGLE CRYSTAL GROWTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1898 STEP NO--UR/0363/70/006/003/0434/0440

CIRC ACCESSION NO--AP0115717

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0115717

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY CONDENSATION AT 10 PRIME NEGATIVE4 MINUS 10 PRIME NEGATIVE5 MM HG, SINGLE CRYSTAL FILMS OF CD AND ZN CHALCOGENIDES ON MICA (MUSCOVITE), GE (N AND P TYPE), GAAS (N AND P TYPE), AND CDS WERE STUDIED. AT AN EPITAXIAL TEMP. OF 250-300DEGREES THERE EXISTS A RELATION BETWEEN THE MOL. WT. OF THE CHALCOGENIDES AND THE DIFFERENCE BETWEEN THE TEMPS. OF THE VAPORIZER AND THE SUBSTRATE. THE CONDITIONS OF THE PREPN. OF SINGLE CRYSTAL FILMS DEPEND BUT WEAKLY ON THE NATURE OF THE INVESTIGATED SUBSTRATES. THE PHASE COMPN. OF THE FILMS PREPD. DEPENDS ON EPITAXIAL TEMP., CONDENSATION RATE, NATURE OF THE ORIENTING SUBSTRATES, AND CONSTRUCTION OF THE VAPORIZER.

FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

K

UDC: 537.311.33:548.55

MURAV'YEVA, K.K., KALINKIN, I.P., SERGEYEVA, L.A., ALESKOVSKIY, V.B., BOGOMOLOV, N.S., Leningrad Technological Institute imeni Lensovet, Leningrad, Ministry of Higher and Secondary Specialized Education RSFSR

"Investigation of Growth and Structure of Single Crystalline Films of Cadmium and Zinc Chalcogenides"

Moscow, Neorganicheskiye Materialy, Vol 6, No 3, 1970, pp 434-440

Abstract: The method of condensation in a vacuum of 10^{-4} - 10^{-5} mm Hg is used to grow single crystalline cadmium and zinc chalcogenide films on mica (muscovite), germanium (n- and p-types), GaAs (n- and -p-types) and CdS. It is demonstrated that with an epitaxial temperature of 250-300°C, there is a dependence between the molecular weight of the chalcogenides and the difference between the temperatures of evaporator and substrate. The single crystalline film production conditions depend little on the nature of the substrates investigated. The phase composition of the films produced depends on the epitaxial temperature, condensation rate, type of orienting substrates and evaporator design. Single crystalline films of CdSe of perfected structure with carrier mobility up to 180 $cm^2/v\text{-}sec$ were grown in a closed crucible under near-isothermal conditions.

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1/3 013 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EPITAXIAL GROWTH OF OXYCOMPOUNDS ON THE SURFACE OF SINGLE CRYSTALLINE FILMS AND SINGLE CRYSTALS OF A PRIMEII B PRIMEVI --U-

AUTHOR-(04)-SERGEYEWA, L.A., KALINKIN, I.P., ALESKOVSKY, V.B., NECHIPORENKO, A.P.

COUNTRY OF INFO--USSR

SOURCE--KISTALL UND TECHNIK, 1970, VOL 5, NR 1, PP 61-72

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EPITAXIAL GROWTH, SINGLE CRYSTAL FILM, CADMIUM COMPOUND, OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0410 STEP NO--GE/0109/70/005/001/0061/0072

CIRC ACCESSION NO--AP0121085

UNCLASSIFIED

2/3 013 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121085

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS OF ELECTRON DIFFRACTION INVESTIGATION OF THE COMPOSITION AND STRUCTURE OF AIR ANNEALED SINGLE CRYSTALLINE FILMS AND SINGLE CRYSTALS A PRIMEII B PRIMEVI (CDS, CDSE, CDTE) ARE REPORTED. A PRIMEII B PRIMEVI SINGLE CRYSTALLINE FILMS WERE GROWN BY DEPOSITION FOR VAPOUR ON ORIENTING SUBSTRATES, EITHER ON THE MICA PLANE (001) OR THE NACL (111) PLANE, WITH WURTZITE STRUCTURE (CDS SUBW.CDSE SUBW). SPHALERITE (CDS SUBS.CDSE SUBS.CDTE SUBS) OR THAT OF ROCK SALT (CDS SUBNACL). THE LATTICE DIMENSIONS A OF CDS SUBNACL SINGLE CRYSTALLINE FILMS GROWN ON MICA BY EPITAXIAL GROWTH METHOD WERE FOUND TO BE 5.6 ANGSTROM. IT WAS SHOWN THAT SINGLE CRYSTALLINE LAYERS OF OXYCOMPOUNDS PART OF WHICH POSSES FORMERLY UNKNOWN MODIFICATIONS OF THE HEXAGONAL STRUCTURE WITH THE PARAMETERS A EQUALS 3.3 ANGSTROM C EQUALS 5.25 ANGSTROM A EQUALS 5.5 ANGSTROM C EQUALS 7.0 ANGSTROM A EQUALS 5.3 ANGSTROM C EQUALS 7.0 ANGSTROM WERE FORMED ON THE SURFACE OF LAYERS OF CDS WHEN THE LATTER WERE ANNEALED. CHEMICAL ANALYSIS OF ANNEALED CDS FILMS ENABLED SINGLE CRYSTALLINE SUBSTANCES WITH LATTICE DIMENSIONS A EQUALS 3.3 ANGSTROM, C EQUALS 5.25 ANGSTROM TO BE IDENTIFIED AS POLYMORPHOUS HEXAGONAL CADMIUM OXIDE MODIFICATION. EXPITAXIAL LAYERS OF CDO SUBHEX AND CDO SUBNACL WERE ALSO OBSERVED ON SINGLE CRYSTALS OF CDS AFTER ANNEALING IN AIR. IN ORDER TO FIND OUT THE MECHANISM OF OXYCOMPOUNDS GROWTH THE EFFECT OF CERTAIN FACTORS ON THE STRUCTURE, COMPOSITION AND ELECTROPHYSICAL PROPERTIES (SPECIFIC RESISTANCE OMICRON, MOBILITY OF CHARGE CARRIERS MU) OF INITIAL AND ANNEALED FILMS WAS INVESTIGATED.

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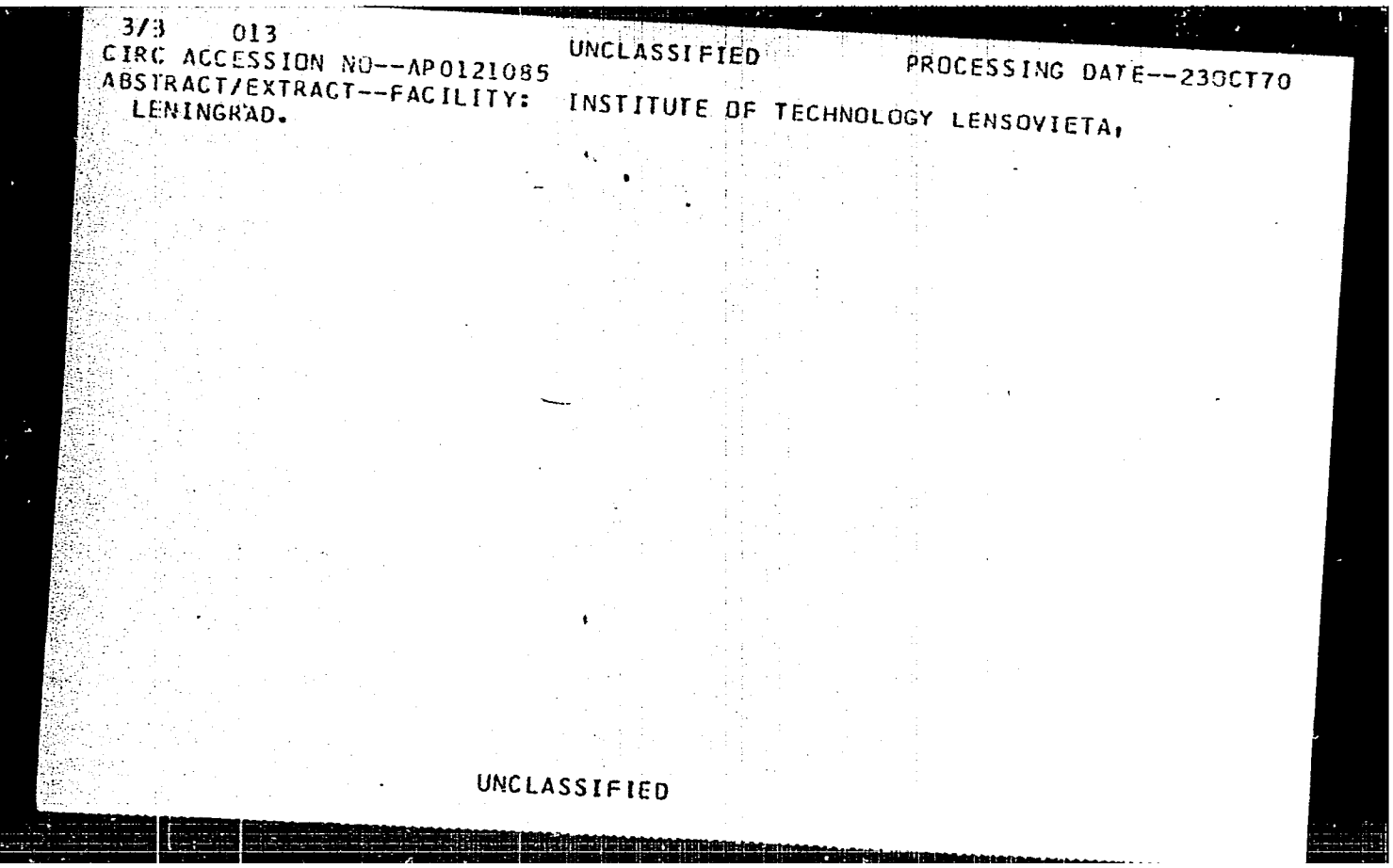

3/3 013 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0121085
ABSTRACT/EXTRACT--FACILITY: INSTITUTE OF TECHNOLOGY LENSOVIETA, LENINGRAD.

UNCLASSIFIED

KALINKIN, I.P.

JPRS 69203
6 Dec 73

XVI-2. STUDY OF THE INITIAL STAGES OF EPITAXIAL GROWTH FILMS OF CADMIUM SELENIDE ON MICA

[Article by A. I. Denisova, L. F. Kalinkin, K. K. Muravyova, V. B. Oleshovskiy, L. N. Aleksandrov, Leningrad, Novosibirsk: Nauka, Sibirsk. Otdeniye, 1972, p 221]

An electron microscope study was made of the nuclear formation and growth of epitaxial CdSe films on mica (muscovite) in a vacuum of $5 \cdot 10^{-5}$ torr at T_e = 250-290° C and T_{test} = 700-1,000° C. The results of a survey of the electron microscope pictures presented in the form of graphical relations permitted the growth kinetics to be traced and the entire course of the growth process of CdSe films on mica to be established:

a) In the nucleation stage on the substrate, two types of particles are observed: small particles with triangular faceting (the cubic phase) and larger unfaceted particles.

b) The maximum density of the nuclei of two types is determined by the thermodynamic conditions of synthesis (T_e, T_{test}); the degree of deviation from the equilibrium state inside the evaporator). The knowledge of the maximum particle density of both types under different conditions of growth permitted estimation of the activation energy of the nucleation, adsorption and diffusion.

c) The nature of the variation in altitude and transverse dimensions of the particles with time permitted establishment of the predominant effect of the surface diffusion during the growth process.

d) The growth rate in individual stages is not a constant and increases by a power law.

e) The filling coefficients for each type of particle as a function of the condensation time permitted establishment that the phase composition of the continuous film is determined by the ratio of the areas occupied by particles of each type directly before coalescence which, in turn, is determined by the synthesis thermodynamics.

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--GROWTH AND STRUCTURE OF MONOKRISTALLINE FILMS OF A PRIMEII B PRIMEVI COMPOUNDS -U-

AUTHOR-(05)-KALINKIN, I.P., MURAVYEVA, K.K., SERGEYEWA, L.A., ALESKOWSKY, V.B., BOGOMOLOV, N.S.

COUNTRY OF INFO--USSR

SOURCE--KRISTALL UND TECHNIK, 1970, VOL 5, NR 1, PP 51-59

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--SINGLE CRYSTAL FILM, SELENIDE, TELLURIDE, ZINC COMPOUND, CADMIUM SULFIDE, GERMANIUM, GALLIUM ARSENIDE, CHALCOGENIDE GLASS, EPITAXIAL GROWTH, SURFACE FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0417 STEP NO--GE/0109/70/005/001/0051/0059

CIRC ACCESSION NO--AP0121091

UNCLASSIFIED

2/2 027 UNCLASSIFIED

CIRC ACCESSION NO--AP0121091 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN VACUUM 10 PRIME NEGATIVE4-10 PRIME NEGATIVE5 TORR MONOCRYSTALLINE THIN LAYERS OF CDS, CDSE, CDTE, ZNS, ZNSE, ZNTE WERE PREPARED ON MICA, (111) SURFACES OF GERMANIUM AND GALLIUM ARSENIDE SINGLE CRYSTALS AND (0001) AND 1120) CADMIUM SULPHIDE SURFACES. THE FILM STRUCTURES AND SOME OF THEIR PROPERTIES (CONDUCTIVITY, N OR P MOBILITIES) WERE SHOWN TO DEPEND ON TEMPERATURE CONDITIONS OF FILM PREPARATION. IT WAS SHOWN EXPERIMENTALLY THAT IN THE CASE OF MONOCRYSTALLINE THIN FILMS OF ZINC AND CADMIUM CHALCOGENIDES THERE IS A CORRELATION BETWEEN EVAPORATION AND EPITAXY TEMPERATURES OF FILM PREPARATION. STRUCTURE AND PHASE COMPOSITION OF MONOCRYSTALLINE LAYERS ARE CONNECTED WITH THE NATURE OF SUBSTRATE SUBSTANCES USED (INCLUDING POLARITY OF (111) DIRECTION IN GALLIUM ARSENIDE AND (0001) DIRECTION IN CADMIUM SULPHIDE). FACILITY: INSTITUTE OF TECHNOLOGY LENSOVIETA, LENINGRAD.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--GROWTH AND ELECTROPHYSICAL PROPERTIES OF SINGLE CRYSTAL FILMS OF CADMIUM AND ZINC CHALCOGENIDES -U-

AUTHOR-(04)-MURAVEVA, K.K., KALINKIN, I.P., ALESKOVSKIY, V.B., BOGOMOLOV, N.S.

COUNTRY OF INFO--USSR

SOURCE--THIN SOLID FILMS 1970, 5(1), 7-14

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHALCOGENIDE GLASS, SINGLE CRYSTAL FILM, CADMIUM SULFIDE, SELENIDE, TELLURIDE, ZINC COMPOUND, EPITAXIAL GROWTH, ELECTRON MOBILITY, PHYSICAL PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0915

STEP NO--NE/0000/70/005/001/0007/0014

CIRC ACCESSION NO--AP0124576

UNCLASSIFIED

2/2 020 UNCLASSIFIED

CIRC ACCESSION NO--AP0124576 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EPITAXIAL GROWTH OF CDS, CESE, CDTE, ZNS, ZNSE, AND ZNTE FILMS ON MICA BY CONDENSATION IN A VACUUM OF 10 PRIME NEGATIVE4-5 TIMES 10 PRIME NEGATIVE5 TORR HAS BEEN INVESTIGATED OVER A WIDE RANGE OF TEMPS. RELATIONS BETWEEN EVAPN. TEMP. T SUBEV AND THE EPITAZIAL TEMP. T SUBEP OF SINGLE CRYSTAL FILMS (T SUBEV EQUALS A SUB1 PLUS T SUBEP AT T SUBEP IS SMALLER THAN OR EQUAL TO 310DEGREES AND T SUBEV EQUALS A SUB2 MINUS 2T SUBEP AT T SUBEP IS GREATER THAN OR EQUAL TO 320DEGREES) AS WELL AS THOSE OF THE TEMP. CONDITIONS OF GROWTH OF SINGLE CRYSTAL FILMS TO MOL. WT. OF CHALCOGENIDES HAVE BEEN OBTAINED. THE MOST PERFECT SINGLE CRYSTAL FILMS GROW AT EPITAXIAL TEMPS. OF 300-320DEGREES. THE RELATION OF THE CURRENT CARRIER MOBILITY AND SP. RESISTANCE TO THE TEMP. CONDITIONS OF THE SINGLE CRYSTAL FILM GROWTH HAS BEEN INVESTIGATED. THE FILMS OBTAINED EXHIBITED A GREAT VARIETY OF PROPERTIES, E.G. SINGLE CRYSTAL CDSE FILMS HAVE BEEN SYNTHESIZED WITH SP. RESISTANCE OF THE ORDER OF 10 PRIME5 OHM CM AND WITH A SP. RESISTANCE OF THE ORDER OF 10 PRIME1-10 PRIME2 OHM CM WITH QUITE HIGH ELECTRON MOBILITY OF 20-32 CM PRIME2-V SEC. FACILITY: LENSOVET INST. TECHNOL., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 540.48'22 + 546.48'23

KALINKIN, I. P., MURAV'YEVA, K. K., YURGEL', I. B., ALESKOVSKIY, V. B., and ANIKIN, I. N., Leningrad Technological Institute imeni Lensovet

"Production of Single-Crystal CdS and CdSe Film Under Conditions Close to Equilibrium"

Moscow, Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 9, Sep 70, pp 1564-1567

Abstract: The article suggests a method for the synthesis of single-crystal CdS and CdSe films using vacuum condensation on orienting substrates (synthetic mica (fluorphlogopite) or leucosapphire) in a wide temperature range (300-800° C) under conditions close to thermodynamic equilibrium. The structure of epitaxial films of CdS and CdSe is no less perfect than single crystals (number of dislocations 10^{-3}-10^{-5} cm^{-2}). A study was made of the effect of process parameters on the degree of structure perfection of the CdS, CdSe epitaxial films and their electrical properties. The suggested method permits the growth of single-crystal CdS and CdSe films with a wide range of properties.

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USSR

KALINKIN, I. P., et al., Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 9, Sep 70, pp 1564-1567

Conditions are described for the production of single-crystal CdSe films with a mobility of up to 180 $cm^2/v.$ sec, close to the properties of the single crystals. Perfect CdS and CdSe films with a resistivity of up to 10^7-10^9 ohms per sec were synthesized. The method of coevaporation with chalcogene gives perfect high-resistance single-crystal CdS and CdSe films with a hole mobility of 0.8-2.4 $cm^2/v.$ sec.

2/2

Acc. Nr.: AP0042566 Ref. Code: UR0293

Gamma Quanta with Energy Greater than 50 MeV in Cosmic Radiation

(Abstract: "Measurements of Fluxes of Gamma Quanta with Energies Greater than 50 MeV in Primary Cosmic Radiation on the 'Kosmos-208' Artificial Earth Satellite," by L. S. Bratolyubova-Tsulukidze, N. L. Grigorov, L. F. Kalinkin, A. S. Melioranskiy, Ye. A. Pryakhin, I. A. Savenko and V. Ya. Tufarkin; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 136-139)

The artificial earth satellite "Kosmos-208" carried a telescope of Cerenkov counters with radiators of Plexiglas and lead glass, surrounded by a scintillator for protection against the background of charged particles, for measuring the fluxes of cosmic γ-quanta with energies greater than 50 MeV. There is a dependence between the counting rate of γ-quanta and geographic latitude, probably related for the most part to imitations of γ-radiation by charged particles. The article gives the values of the total intensities of γ-quanta for the high and equatorial latitudes. The latter data, interpreted as the upper limits of the fluxes of primary γ-rays, are $(1.0\pm0.4)\cdot10^{-4}$, $(6\pm3)\cdot10^{-5}$ and $(1.0\pm1.0)\cdot10^{-5}$ $(cm^2\cdot sec\cdot sterad)^{-1}$ for $E\gamma \geqslant 50$, 90 and 146 MeV respectively. Within the limits of error these results agree with the data obtained using the artificial satellite OSO-III.

Reel/Frame
19760544

1/2 035 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--STUDY OF X RAYS CARRIED OUT ON THE SATELLITE COSMOS 208 -U-

AUTHOR-(05)-ANISIMOV, M.M., GRIGOROV, N.L., ILLARIONOVA, N.V., KALINKIN, L.F., MELIORANSKIY, A.S.

COUNTRY OF INFO--USSR, HUNGARY

SOURCE--INTERNATIONAL CONFERENCE ON COSMIC RAYS, 11TH, BUDAPEST, HUNGARY, AUGUST 25-SEPTEMBER 4, 1969, PROCEEDINGS. VOLUME 1 ORIGIN AND GALACTIC

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, SPACE TECHNOLOGY

TOPIC TAGS--X RAY STUDY, ARTIFICIAL EARTH SATELLITE, PROPORTIONAL COUNTER, X RAY SPECTROMETER, SPACECRAFT CARRIED EQUIPMENT, COLLIMATOR/(U)COSMOS 208 SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605061/805 STEP NO--HU/2506/70/029/000/0309/0311

CIRC ACCESSION NO--AT0144429

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AT0144429

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DESIGN OF THE X RAY SPECTROMETER INSTALLED ON THE SATELLITE COSMOS 207 IS DESCRIBED. THE EFFECTIVE AREA OF HTE PROPORTIONAL COUNTERS WAS 270 SQ CM. SLOT WINDOW COLLIMATORS WITH AN OPENING ANGLE OF 32 MIN BY 18 DEG (FWHM) WERE USED. PRELIMINARY DATA CHARACTERIZING HTE OPERATION OF HTE INSTRUMENT DURING FLIGHT ARE REPORTED. FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET, MOSCOW, USSR.

UNCLASSIFIED

1/3 040 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--HIGH ENERGY ELECTRONS IN CIRCUMTERRESTRIAL SPACE -U-

AUTHOR-(04)-GRIGOROV, N.L., KALINKIN, L.F., KOGANLASKINA, YE.I., SAVENKO, I.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KOSMICHESKIYE ISSLEDOVANIYA, VOL VIII, NO 3, 1970, PP 418-422

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY, PHYSICS

TOPIC TAGS--HIGH ENERGY PARTICLE, ELECTRON FLUX, ENERGY SPECTRUM, TELESCOPE, CHERENKOV DETECTOR, SCINTILLATION COUNTER, STRATOSPHERE, PRIMARY COSMIC RAY/(U)PROTON 1 UNMANNED LABORATORY, (U)PROTON 2 UNMANNED LABORATORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0514 STEP NO--UR/0293/70/008/003/0418/0422

CIRC ACCESSION NO--AP0132714

UNCLASSIFIED

2/3 040 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132714

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPERIMENT WAS CARRIED OUT FOR DIRECT MEASUREMENT OF ELECTRON FLUXES AND DETERMINING THEIR ENERGY SPECTRUM IN CIRCUMTERRESTRIAL SPACE AT ALTITUDES 200-600 KM USING THE INSTRUMENT CARRIED ON THE SPACE STATIONS "PROTON-1" AND "PROTON-2". FIGURE 1 IN THE TEXT IS A DIAGRAM OF THE INSTRUMENT, A TELESCOPE FORMED BY SCINTILLATION AND GAS CERENKOV COUNTERS. THE DATA PRESENTED HERE INDICATE THAT BOTH IN THE STRATOSPHERE (AT ALTITUDES 25-40 KM) AND AT GREATER ALTITUDES (200-600 KM) THERE ARE CONSIDERABLE FLUXES OF ELECTRONS OF QUITE HIGH ENERGIES (E SUBE GREATER THAN OR EQUAL TO 10 PRIME7 EV). LARGE FLUXES OF "DIRECT" ALBEDO ELECTRONS IN THE STRATOSPHERE CAUSED BY THE INTERACTION BETWEEN PRIMARY COSMIC RAYS AND ATMOSPHERIC MATTER RESULT IN THE INJECTION OF THESE PARTICLES INTO CIRCUMTERRESTRIAL SPACE. CONSIDERABLE VARIATIONS IN TIME OF SECONDARY FLUXES OF SECONDARY ELECTRONS IN THE STRATOSPHERE, NOT ASSOCIATED WITH VARIATIONS IN THE INTENSITY OF PRIMARY COSMIC RAYS CAN BE REGARDED AS AN INDICATION OF THE EXISTENCE OF A "RESERVOIR" IN CIRCUMTERRESTRIAL SPACE INWHICH THERE IS AN ACCUMULATION OF ELECTRONS OF QUITE HIGH ENERGIES, THAT IS, EVIDENCE OF A RELATIVELY PROLONGED RETENTION OF THESE PARTICLES BY THE EARTH'S MAGNETIC FIELD. WHEN THE MAGNETOSPHERE IS DISTURBED THEY "LEAK" INTO THE ATMOSPHERE. HOWEVER, THERE IS AT PRESENT NO ADEQUATE CLARITY CONCERNING THE DETAILS OF THE MECHANISM OF TRAPPING OF ALBEDO HIGH ENERGY PARTICLES BY THE EARTH'S MAGNETIC FIELD, THEIR RETENTION IN THE FIELD, AND THE DIRECT CAUSES FOR THE LEAKAGE.

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002201210005-8"

3/3 040 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132714

ABSTRACT/EXTRACT--IT CAN BE POSTULATED THAT LONG TERM OBSERVATIONS AT ALTITUDES GAMMA 10 PRIME2 -10 PRIME3 KM WITH SIMULTANEOUS MEASUREMENTS WITH STRATOSPHERIC BALLOONS WILL MAKE IT POSSIBLE TO CLARIFY THE PRINCIPAL MECHANISMS OF FORMATION OF STRONG FLUXES OF HIGH ENERGY ELECTRONS IN CIRCUMTERRESTRIAL SPACE AND THEIR DUMPING INTO THE EARTH'S ATMOSPHERE.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--DISCOPUNCTURING ENZYMOTHERAPY OF LUMBAR OSTEOCHONDROSIS -U-

AUTHOR--KALINKIN, V.V.

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 6, PP 40-44

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BONE DISEASE, PROTEOLYTIC ENZYME, DRUG TREATMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0908 STEP NO--UR/9115/70/000/006/0040/0044

CIRC ACCESSION NO--AP0129973

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2/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0129973

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MATERIAL FOR THIS REPORT CONSISTS OF 128 PATIENTS WITH LUMBAR OSTEOCHONDROSIS OF SPINE TREATED BY INJECTION OF PAPAIN INTO THE DEGENERATIVELY CHANGED INTERVERTEBRAL DISCS WITH AID OF DISC PUNCTURE. THE DOSE OF PAPAIN DEPENDS ON THE MARKEDNESS OF THE DEGENERATIVE PROCESS IN THE INTERVERTEBRAL DISCS. STUDY OF THE DIRECT RESULTS OF TREATMENT REVEALED DEVELOPMENT OF REACTIONS OF VARIOUS KIND IN RESPONSE TO INJECTIONS OF PAPAIN MANIFESTED, IN THE MAIN, BY DISCALGIA. THE STUDY OF THE LATE RESULTS IN 61 PATIENTS SHOWED THAT IN 91,8PERCENT OF CASES THE EFFECT OF TREATMENT WAS POSITIVE.

FACILITY: KAFEDY NEYROKHIRURGII NOVOKUZNETSKOGO INSTITUTA USOVERSHENSTVOVANIYA VRACHEY.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--NEW HOLOGRAPHIC METHOD FOR OBTAINING GHOSTS -U-

AUTHOR-(02)-KALINKINA, I.N., KOSOUROV, G.I.

COUNTRY OF INFO--USSR

SOURCE--PRIBORY I TEKHNIKA EKSPERIMENTA, JAN.-FEB. 1970, P. 199, 200

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HOLOGRAM, OPTIC IMAGE, LIGHT POINT SOURCE, ILLUMINATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1548 STEP NO--UR/0120/70/000/000/0199/0200

CIRC ACCESSION NO--AP0106294

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106294

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OUTLINE OF A HOLOGRAPHIC TECHNIQUE FOR RECOVERY OF A COMPLETE IMAGE (GHOST) OF AN OBJECT FROM ITS PARTIAL HOLOGRAM AND A DIFFRACTION PICTURE OF ITS ENTIRETY. A POINT SOURCE OF MONOCHROMATIC LIGHT IS USED FOR THE RESTORATION OF THE MISSING PORTION OF THE ORIGINAL, RECONSTRUCTING THE CONDITIONS OF ILLUMINATION UNDER WHICH THE ORIGINAL HOLOGRAM WAS OBTAINED. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT KRISTALLOGRAFII, MOSCOW, USSR.

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Biochemistry

USSR

UDC 547.964.4+577.17

(11)

SHVACHKIN, YU. P., VDOVINA, R. G., POZNYAK, M. G., VOLUYSKAYA, YE. N., RYABTSEV, M. N., KRIVTSOV, V. F., GRACHEVA, A. K., KRASNOSHCHEKOV, S. P., NOVOSELOV, V. A., GRUZDEV, V. S., OLEYNIK, A. M., KALINKINA, Z. B., FEDOTOV, V. P., IVANOV, A. I., YUDAYEV, N. A.

"New Synthesis of Human Insulin"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 216-217

Abstract: Human insulin was synthesized on the basis of obtaining A and B chains by the solid phase method [R. B. Merrifield, J. Am. Chem. Soc., No 85, 2149, 1963; J. Stuart, et al., Tverdofazny sintez peptidov, Moscow, Mir, 1971] and subsequently combining the synthetic chains into the complete molecule of the biologically active hormone. Here, a new version of the synthesis is realized which permits exclusion of treatment of the chains with sodium in liquid ammonia which eliminates the danger of undesirable side reactions caused by this reagent [A. Marglin, et al., J. Am. Chem. Soc., No 88, 5051, 1966]. The A and B chains of human insulin were synthesized on an automated device using a spherical chloromethylated copolymer of styrene with 1% divinyl benzene as the insoluble carrier. All operations were performed in a nitrogen atmosphere. The derivatives of the L-amino acids used in the synthesis of the A and B chains are listed. The fluorohydrates of the chains were con-

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SHVACHKIN, YU. P., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 216-217

verted into S-sulfonates which exhibited no differences from the S-sulfonates of the corresponding natural chains of bull insulin. The synthetic A and B chains were recombined both with the corresponding natural chains and among each other. The resultant compounds had specific insulin activity of comparable magnitude to the previously synthesized insulin compounds [K. Lubke, et al., Adv. Enzymol., No 33, 445, 1970].

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UDC 621.791.03.756

TROITSKIY, V. A., and KALINNIKOV, S. A., Electric Welding Institute imeni Ye. O. Paton, Academy of Sciences UkrSSR

"Comparison of Sources for Electroslag Welding"

Kiev, Avtomaticheskaya Svarka, No 7, Jul 70, pp 49-53

Abstract: A method of regulating transformers, called "magnetic commutation," has been developed at the Electric Welding Institute imeni Ye. O. Paton. Adjustment is effected by means of a gear mechanism which moves the magnetic commutator or by DC magnetization. Transformers adjustable by magnetic commutation are close to nonadjustable transformers with respect to their weight and energy characteristics. Data on TShS-1000-1 (with a control) and TRS-1000-1 (adjustable by magnetic commutation) transformers show that a changeover from stepped adjustment to smooth adjustment by magnetic commutation reduced the cost of the source. Electroslag welding with currents up to 3000 amp is done with transformers of 2 types: 1) mechanically adjustable, and 2) adjustable by DC magnetization. A diagram shows that transformers with magnetic commutation by magnetization are not inferior to nonadjustable transformers with respect to their stringent external and energy characteristics. The new

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