1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ROLE OF CARBENIUM IONS DURING THE ALKYLATION OF BENZENE BY CYCLOPROPANE HYDROCARBONS -U-

AUTHOR-(03)-STOLYAROV, B.V., SIDEROV, V.A., IOFFE, B.V.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 369-72

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYLATION, BENZENE, CYCLOPROPANE, PHOSPHORIC ACID, ALUMINUM CLHORIDE, CATALYST, BUTANOL, PHENOL, CHEMICAL REACTION RATE, CHEMICAL REACTION MECHANISM, ISOMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0571 STEP NO--UR/0020/70/191/002/0369/0372

CIRC ACCESSION NO--AT0126316

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0126316

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALKYLATION OF C SUB6 H SUB6 IN THE PRESENCE OF 96PERCENT OR 80PERCENT H SUB2 SO SUB4, POLYPHOSPHORIC ACID, OR ALCL SUB3 IN MENO SUB2 WAS RUN WITH CUM. CYCLOPROPANE AND WITH VERY PURE CYCLOPROPANES WITH 1-ME, 1,1,ME SUB2, OR 1,2,ME SUB2 SUBSTITUENTS, AS WELL AS ETHYLCYCLOPEOPANE AND 1,1,2,TRIMETHYLCYCLOPROPANE. THE REACTION RESULTS OBTAINED IN 40-80DEGREES INTERVAL WERE TABULATED AND COMPARED WITH ALKYLATIONS RUN WITH PROH, 2,BUTANOL, 2,METHYL,2, BUTANOL, 3,PENTANOL AND 2,2DIMETHYL,3,BUTANOL. THE COMPN. OF THE ALKYLBENZENES WAS TABULATED OVER A RANGE OF EXPTL. CONDITIONS; ON THE WHOLE THE OCMPN. WAS SIMILAR FOR HYDROCARBON (CYCLOPROPANE) OR ALC. SOURCE OF THE ALKYLATING GROUP. THE ONLY MATERIAL DIFFERENCES WERE FOUND BETWEEN THE RUNS WITH CYCLOPROPANE OR METHYLCYCLOPROPANE ON THE ONE HAND, AND WITH PROH OR 2,BUTANOL ON THE OTHER. ELEVATION OF TEMP. OR INCREASED DURATION MERELY INCREASED THE YIELDS OF ALKYLBENZENES, BUT NOT THE RATIOS OF INDIVIDUAL PRODUCTS. IN ALL REACTIONS WITH CYCLOPROPANE THE PRODUCTS WERE COMPOSED OF PRPH, ISO-PRPH AND 2-20PERCENT MEETCHPH; ETHYLCYCLOPROPANE SIMILARLY GAVE PRODUCTS WITH 8-10PERCENT TERT,AKYLBENZENE; ALKYLATIONS WITH CYCLOPROPANE HYDROCARBONS GAVE APPRECIABLE AMTS. OF PRODUCTS WITH BOTH FEWER AND MORE C ATOMS IN THE SIDE CHAIN THAN NORMALLY EXPECTED. THE INITIAL PRODUCTS APPEAR TO BE CARBO CATIONS FROM CYCLOPROPANES WHICH THEN CAN ISOMERIZE BY TRANSFER OF THE POS. CHARGE DOWN THE CHAIN PRIOR TO ALKYLATION PROPER. ETHYLCYCLOPROPANE GAVE 3 ISOMERS OF PENTYLBENZENES TO CONFIRM THIS MECHANISM. FACILITY: LENINGRAD. GOS. UNIV. IM. ZHDANOVA, LENINGRAD, USSR.

UNCLASSIFIED

Acc. Nr: AP0053420 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0366

110853z Preparation of cyclopropane hydrocarbons by the catalytic decomposition of 2-pyrazolines. Isidorov, V. A.; Ioffe, B. V.; Stolyarov, B. V. (Leningrad. Gos. Univ., Leningrad, USSR). *Zh. Org. Khim.* 1970, 6(2), 398–9 (Russ). The pyrolysis of Δ^2-pyrazolines (I), contg. 3,5,5-Me_2, 4-Et, 3,5-Me_2, 4,5-Me_2, or 5,5-Me_2 substituents, at 400° gave ≤68% total products contg. cyclopropanes and ≤56% (based on product wt.) olefins. At 300°, the product distribution was the same, but the total yields were 10–25% lower. Heating I in diethylene glycol at 230–60° gave NH_3(g), but no hydrocarbons. CPJR.

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REEL/FRAME
19830444

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USSR

DUBOVITSKAYA, R. K., KULAKOVSKAYA, V. P., ROMANOVSKAYA, L. M., SAVCHENKO, T. A., STOLYAROV, G. K., FEDOROV, A. T., FEL'DMAN, L. S.

Sistema Avtomaticheskoy Obrabotki Dannykh na Baze Yazyka KOBOL (Automated Data Processing System Based on COBOL), Moscow, Statistika Press, 1971, 280 pp

Translation of Foreword [pp 3-4]: In the improvement of the efficiency of national production, the most important role belongs to further introduction of computers into the sphere of economics. Progress in this area is determined to a great extent by the presence of automatic data processing systems for economics information based on algorithmic languages available to a broad circle of people dealing in the given area.

The automatic data processing system described in this book for the Minsk-22M computer (SAOD) is based on a Russian version of COBOL (Common Business Oriented Language), the business information processing language which is wide-spread abroad. The given system was developed at the Minsk design office of the plant imeni S. Ordzhonikidze with the participation of the mathematics institute of the Belorussian SSR Academy of Sciences, and it is the first system using COBOL for [illegible] Soviet computers in the development of the language and [illegible] the working group of algorithmic [illegible] ([illegible]) of the Commission on Multifaceted

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UBOVITSKAYA, R. K., et al., Sistema Avtomaticheskoy Obrabotki Dannykh na Baze Yazyka KOBOL, Moscow, Statistika Press, 1971, 280 pp

Cooperation of the Academies of Sciences of the Socialist Countries were used.

The book is devoted to a description of the SAOD system and its components from the point of view of the user. The system consists of writing the program in the initial language, preparing the programs and data for computer input, translation and checkout of the working program during computations by the finished working program and also during special system servicing procedures.

Accordingly, the book contains information required by programmers and computer operators, a description of the equipment for preparing the data, and data required by people responsible for organizing the operation of the SAOD system as a whole. In addition, the book can be useful to developers of programming and data processing systems. It is assumed that the reader is acquainted with the principles of automatic programming and the application of computers in data processing problems.

When using the book as a practical guide, the reader should also be acquainted with the following materials on the software system for the Minsk-22 computer:

1. [illegible] for the Minsk-22 computer in the [illegible]. No 1. Standard

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JBOVITSKAYA, R. K., et al., Sistema Avtomaticheskoy Obrabotki Dannykh na Baze azyka KOBOL, Moscow, Statistika Press, 1971, 280 pp

Programs Library. Minsk, Mathematics Institute of the Belorussian SSR Academy of Sciences, 1968.

2. Software of the Minsk-2 (22) computer in the T mode. No 3. Symbolic coding system. Minsk. Mathematics Institute of the Belorussian SSR Academy of Sciences, 1969.

The authors consider it necessary to note that the success in using SAOD, just as any modern automatic data processing system, depends to a great extent on the clarity of organization of the operations with respect to its utilization within the framework of the general enterprise control system.

In addition to the authors, the following people participated in the development of the system at various stages: V. I. Gorbatsevich, M. L. Gruzdova, V. A. Doroshek, L. A. Kozyabo, M. Ye. Nemenman, L. I. Panchina, V. N. Pionov, M. S. Presman, V. M. Skripnikova, et al.

The authors express their sincere appreciation to all who were of assistance in preparing this paper for publication, and they will be grateful to the readers and users of the ASOD system for comments, remarks, and suggestions.

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USSR

UDC 535.37:546.841

STOLYAROV, K. P., GRIGOR'YEV, N. N. and SOLOV'YEV, L. A.

"Luminescent Titrimetric Micromethod of Determining Thorium"

Leningrad, Vestnik Leningradskogo Universiteta, No 1, Feb 72, pp 130-134

Abstract: It is known that morin in weak acid solutions forms, with thorium ions, a complex compound like the compounds of that reagent with the ions of aluminum, scandium, gallium, etc., this compound being luminescent in ultraviolet beams of yellow-green light. Based on their own and other published data, the authors studied conditions for the luminescent photometration of a thorium-morin complex with use of oxalic acid and selection B at pH of 1.5 to 3.0. Sensitivity of titration of 1 μg of thorium in 2 ml of solution was determined. The interval of determined concentrations of thorium with solutions of oxalic acid amounts to 1 - 40 μg/2 ml; in the case of selection B, it is 1 - 100 μg/2 ml. Relatively large amounts of the rare earths, lead ions, calcium, uranyl and iron (III) atoms do not hinder the process of the titration; the presence of sulfate ions does so.

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USSR

UDC 666.1.056:678.84:678.643

SIL'VESTROVICH, S. I., STOLYAROV, M. I., GURIKOVA, L. M., STOLYAROVA, G. V., SHCHEREDINA, Ye. A., KOSHELKINA, O. N.

"Protective Effect of Polymer Coatings on Glass Surfaces"

Moscow, Steklo i Keramika, No 11, 1972, pp 12-15.

Abstract: The authors performed studies to determine the influence of protective organosilicon and other organic polymer coatings on industrial glass: sheet glass 1.5 mm thick and electric vacuum type S-49-2 glass (rods 5 mm in diameter). Coatings 1-25 μ thick were applied with the polymers in solution in toluene, acetone, ethyl alcohol, styrene and in a mixture of solvents. Polymers of this type reduce transparency only slightly in thin coatings, although aging may cause addition reductions in transparency. The polymer coatings tested approximately doubled the strength of the sheet glass surface, producing maximum effect with a coating thickness of 5-10 μ. Strong polymers and polymers with good adhesion to the glass produce the best effect. The protective effect is retained when the glass is exposed to high humidities for extended periods of time.

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USSR

UDC 539.3

KORNISHIN, M. S., STOLYAROV, N. N., DEDOV, N. I.

"Large Bends of Plates Rectangular in Plane and of Hollow Shells of Nonlinearly Elastic Material"

V sb. Issled. po teorii plastin i obolochek. No. 9 (Studies in the Theory of Plates and Shells. No. 9 -- Collection of Works), Kazan', Kazan' University, 1972, pp 157-168 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V108)

Translation: Equations of the theory of hollow shells made of nonlinearly elastic material are given considering large bends and the compressibility of the material. An algorithm based on the finite differences method is given for solving the problem of the bending of plates and shells that makes it possible to take into account both the joint and individual effect of geometric and physical nonlinearities. The results of a calculation of the bending of a plate and shell pinched along the edge are presented. A comparison of the geometrically nonlinear solution with the geometric and physically nonlinear solution shows that the effect of physical nonlinearity of the material on the magnitude of the load is approximately 30% and the effect on the magnitude of the stress is approximately 38%. 6 ref. N. V. Kolkunov.

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USSR

UDC 533.6.08:621.375.826

YERSHOV, O. A., YERSHOVA, T. I., STOLYAROVA, N. N., and YARIN, L. P.

"A Laser Anemometer for Measuring Airflow Velocities"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol 24, No 5, May 1973, pp 888-890

Abstract: A description of a laser anemometer is presented, together with some results of measurements of mean and fluctuating velocities in a free turbulent jet. It is shown that the experimental data are in good agreement with theory and with results obtained by other methods. This testifies to the effectiveness of the proposed system of a laser anemometer, and to the possibility of its use for measuring the characteristics of turbulent streams. 2 figures. 5 references.

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UDC 548.5

USSR

KARATAEV, V. V., MIL'VIDSKII, M. G.'OSVENSKII, V. B., STOLYAROV, O. G.,
Government Scientific-Research and Planning Institute for the Rare Metals Industry

"Effective Partition Coefficient of Excen Basic Components in Crystallization of Gallium Arsenide from a Melt"

Moscow, Kristallografiya, vol 18, No 4, July-August 1973, pp 830-832

Calculations were made of effective partition coefficients for Ga and As with growth of GaAs monocrystals by crucible-free zone fusion from a melt with different deviations from stoichiometry. Total impurities were less than 10^{17} cm^{-3}. The formula used in the calculations is given. When the melt is enriched in Ga, $k = 6.1 \times 10^{-3}$; when enriched in As, $k = 8.5 \times 10^{-3}$. Since crystals grow slowly (0.5 mm/min) under the conditions used, the values may be considered close to equilibrium.

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UDC 548.4

USSR

BUBLIK, V. T., KARATAYEV, V. V., KULAGIN, R. S., MIL'VIDSKIY, M. G., OSVENSKIY, V. B., STOLYAROV, O. G., KHOLODNYY, L. P., State Scientific-Research and Design Institute of the Rare Metals Industry

"Nature of Point Defects in GaAs Single Crystals as a Function of Composition of Melt Used in Growing Them"

Moscow, Kristallografiya, Vol 18, No 2, Mar-Apr 73, pp 353-356.

Abstract: The dependence is studied between the nature and concentration of point defects in GaAs monocrystals and the composition of the growth melt. During the studies, the density of specimens was determined with high precision, lattice periods and internal friction were measured. The results produced indicate that single-phase GaAs crystals can be grown from melts containing between 46.7 and 53.5 at. % As, crystals of stoichiometric composition being produced from a melt rich in As, with its concentration in the melt 50.5 at. %.

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1/3 031 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EFFECT OF IMPURITIES OF GROUP IV ELEMENTS ON THE PLASTIC PROPERTIES OF GALLIUM ARSENIDE -U-

AUTHOR-(03)-SHERSHAKOVA, I.N., OSVENSKIY, V.B., STOLYAROV, O.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 457-60

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--GALLIUM ARSENIDE, PLASTICITY, SEMCONDUCTOR MATERIAL, CRYSTAL DISLOCATION, TIN, GERMANIUM, SINGLE CRYSTAL, CRYSTAL IMPURITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0927 STEP NO--UR/0363/70/006/003/0457/0460

CIRC ACCESSION NO--AP0118094

UNCLASSIFIED

2/3 031 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118094

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STUDY OF THE INFLUENCE OF IMPURITES ON PLASTIC PROPERTIES OF SEMICONDUCTOR MATERIALS PROVIDES SUCH QUANT. CHARACTERISTICS AS THE ACTIVATION ENERGY OF THE DISLOCATION MOTION AND KINEFIC CONSTS., AND IT MAKES IT POSSIBLE TO UNDERSTAND THE MECHANISM OF THE FORMATION OF DISLOCATION STRUCTURE AND THE INTERACTION OF POINT DEFECTS WITH DISLOCATIONS IN SEMICONDUCTORS. AMONG SUCH IMPURITIES IN THE EFFECT OF SN, GE, AND SI ON GAAS WAS STUDIED. THE DYNAMIC UNIAXIAL COMPRESSION METHOD WAS USED TO STUDY THE PLASTICITY OF THESE CRYSTALS. ACCORDING TO THE THEORY, IMPURITIES OF GROUP IV CAN REPLACE EITHER THE GA OR THE AS ATOM IN THE CRYSTAL LATTICE, OR BOTH SIMULTANIOUSLY. IN THE LATTER CASE, MOST OF THE DOPING IMPURITY DOES NOT CONTRIBUTE TO CARRIER CONCN. UP TO A CONCN. OF 1 TIMES 10 PRIME17 CM PRIME NEGATIVE3 ALMOST ALL THE SI ATOMS ARE DONORS; THEREAFTER, THIS DEPENDENCE CHANGES SIGNIFICANTLY, SINCE THE FERMI LEVEL RISES AND THE SUBSTITUTION OF ATOMS OF BOTH SUBLATTICES BEGINS. THE NATURE OF THE SUBSTITUTION DEPENDS ON WHETHER THERE IS EXCESS GA OR AS. THE PRESENCE IN GAAS OF EXCESS CATION (GA) VACANCIES ENHANCES THE DONOR CHARACTER OF THE SUBSTITUTION. THE ACCEPTOR BEHAVIOR OF THESE IMPURITIES CAN BE CAUSED BY AN EXCESS OF ANION VACANCIES. ALL THE IMPURITIES INVESTIGATED RAISE THE UPPER YIELD POINT FOR GAAS. THE UPPER YEILD POINT FOR UNDOPED GAAS AT THE EXPTL. CONDITIONS SELECTED WAS 6.2 KG-MM2, WHEREAS THAT FOR GAAS DOPED WITH GE WAS 17 KG-MM PRIME2. THE TEMP. AND RATE DEPENDENCES OF THE UPPER YIELD POINT FOR GAAS SINGLE CRYSTALS DOPED WITH GE AND SN WERE ALSO STUDIED.

UNCLASSIFIED

3/3 031 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0118094
ABSTRACT/EXTRACT--THE INCREASE IN THE ACTIVATION ENERGY FOR THE DISLOCATION MOTION UPON DOPING OF GAAS BY AMPHOTERIC IMPURITIES CAN BE EXPLAINED ON THE BASIS OF THE SIMULTANEOUS ACTION OF SEVERAL FACTORS. THE CHARGE STATE OF THE DOPANTS HAS A SIGNIFICANT EFFECT ON THE PLASTICITY OF GAAS SINGLE CRYSTALS.

UNCLASSIFIED

Single Crystals 5

UDC [illegible]

USSR

KEKALO, I. B., VIL[illegible]S, Kh.-L., [illegible], L. P., STOLYAROV, V. L., and IVANOV, I. I.

"Study of the Dynamics of the Domain Structure During Deformation and Magneto-elastic Damping of Oscillations in Single Crystals of the Alloy Fe-3% Si"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 3, Sep 70, pp [illegible]-576

Abstract: The Fe-3% Si alloy was used in a study of the magnetoelastic damping of oscillations and investigation of the dynamics of the domain structure during twisting, allowing a number of regularities to be determined which expand our ideas of the domain mechanism of magnetoelastic damping in [illegible]. During twisting of single crystal specimens of Fe-3% Si, the [illegible] processes occur: displacement of the 180° boundaries of the principal domains, fractionation of the initial domain structure as a result of [illegible] a pair of boundaries within the principal domains, and also [illegible] occurring. Comparatively slight displacements of the 180° boundaries of the principal domains, as well as displacements of the boundaries of drop-shaped domains during twisting of a specimen with $\varphi = 0°$ caused no losses in magnetoelastic hysteresis. High magnetoelastic attenuation in specimens with $\varphi = 55$ and [illegible]° could have been

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USSR

KEKALO, I. B., et al, Fizika Metallov i Metallovedeniye, Vol 34, No 3, Sep 72, pp 566-576

related to intensive displacement of the 180° boundaries of the principal domains or the effect of fractionation of the domain structure, which obviously results in restructuring of the internal domain structure with participation of the 90° boundaries. Restructuring of the principal domain structure in specimens with $\phi = 55°$ occurred with deformations considerably exceeding the deformations for which magnetoelastic attenuation reaches its maximum.

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Acc. Nr: AP0034768 S Ref. Code: UR 0241

PRIMARY SOURCE: Meditsinskaya Radiologiya, 1970, Vol 15, Nr 1, pp 60-67

A UNIT FOR THE WHOLE-BODY RADIOMETRY

V. Ya. Vanin, M. P. Gerasimova, V. P. Stolyarov

Summary

Parameters of a spectometer at different stages of its exploitation designed at the Institute of biophysics for measuring radiation emitted in man and consisting of a detector with a NaI(Tl) crystal and a protective steel chamber are presented. Spectrometric resolution of the unit in 662 keV γ-line for a fanthom filled with a Cs^{137} solution and a NaY(TE) crystal of 203 mm diameter and 102 mm high was 10.4%. During 15-minute long measurement the sensitivity of the spectrometer enables it to determine the presence of 0.6×10^{-9} C of Cs in the organism with an accuracy better than 68%. Parameters of spectrometers of radiation emitted by man now employed in the USSR are cited.

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REEL/FRAME

19711478

1/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--THE USE OF EPOXY COMPOUNDS FOR RESTORING THE FIT OF ANTIFRICTION BEARINGS -U-

AUTHOR--YEVDOKIMOV, YU.A., YEVDOKIMOVA, I.I., STOLYAROV, YU.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 2, 1970, PP 51-52

DATE PUBLISHED--------70

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

TOPIC TAGS--EPOXY RESIN, GLUE, ANTIFRICTION BEARING, RAILWAY ROLLING STOCK

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1569 STEP NO--UR/0122/70/000/002/0051/0052

CIRC ACCESSION NO--AP0114157

ZZZZZZZZZZZZ UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0114157

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS PROPOSED FOR RESTORING THE SEATS AND FASTENING THE OUTER RACES OF BEARINGS IN THE GEAR BOXES OF MACHINE TRANSMISSIONS BY MEANS OF AN EPOXY GLUE. THE FORMULA FOR THE GLUE IS GIVEN, THE METHOD IS DESCRIBED, AND THE TEST RESULTS ARE PRESENTED. TESTS OF THE EPOXY MATERIAL, APPLIED BY THE INDICATED METHOD TO MOTORIZED RAILROAD HAND CARS, PROVED SATISFACTORY.

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USSR

UDC 666.1.056:678.84:678.643

SIL'VESTROVICH, S. I., STOLYAROV, M. I., GURIKOVA, L. M., STOLYAROVA, G. V., SHCHEREDINA, Ye. A., KOSHELKINA, O. N.

"Protective Effect of Polymer Coatings on Glass Surfaces"

Moscow, Steklo i Keramika, No 11, 1972, pp 12-15.

Abstract: The authors performed studies to determine the influence of protective organosilicon and other organic polymer coatings on industrial glass: sheet glass 1.5 mm thick and electric vacuum type S-49-2 glass (rods 5 mm in diameter). Coatings 1-25 μ thick were applied with the polymers in solution in toluene, acetone, ethyl alcohol, styrene and in a mixture of solvents. Polymers of this type reduce transparency only slightly in thin coatings, although aging may cause addition reductions in transparency. The polymer coatings tested approximately doubled the strength of the sheet glass surface, producing maximum effect with a coating thickness of 5-10 μ. Strong polymers and polymers with good adhesion to the glass produce the best effect. The protective effect is retained when the glass is exposed to high humidities for extended periods of time.

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USSR S UDC 576.851.513.095.57.095.18

STOLYAROVA, L. G., USAKOVSKAYA, T. S., TSEYTLIN, P. I., and PEKHOV, A. P., Institute of Experimental Biology, Academy of Medical Sciences USSR, Moscow

"The Effect of Nitrous Acid on the Capacity of DNA to Inhibit Transformation of Bac. subtilis"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 3, 1970, pp 81-84

Abstract: The effect of nitrous acid on the capacity of DNA to inhibit transformation of Bac. subtilis was studied using calf thymus DNA treated with a 2 M solution of $NaNO_2$ for 20, 40, and 60 min. In control experiments, the effect of $NaNO_2$ on the transformation activity of DNA was studied. It was determined that 20 min treatment of DNA with $NaNO_2$ augments its inhibiting activity. Longer treatment reverses the order, so that after a 60 min treatment, the inhibition process is completely suppressed.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210006-5"

1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--THE ISOLATION OF HELA AND AH,I MUTANT CELLS RESISTANT TO ANALOGUES OF NITROUS BASES -U-

AUTHOR-(03)-PEKHOV, A.P., STOLYAROVA, L.G., YERSHIKOVA, YU.YE.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49, NR 6, PP 91-94

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TISSUE CULTURE, TUMOR, CULTURE MEDIUM, PURINE, PYRIMIDINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0566 STEP NO--UR/0219/70/049/006/0091/0094

CIRC ACCESSION NO--AP0131189

UNCLASSIFIED

2/2 017 UNCLASSIFIED

CIRC ACCESSION NO--AP0131189 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS INVESTIGATED THE SENSITIVITY OF CULTIVATED CELLS OF HELA AND AM-I STRAINS TO ANALOGUES OF PURINE AND PYRIMIDINE BASES (8-AZAXANTHIN, HYPOXANTHIN, ADENINE, 2,6-DIAMINOPURINE SULFATE, 5-BROMURACYL, GUANOZINE-2,3-PHOSPHATIDIC ACID, INOSINE, 8-AZAADENINE, 8-AZAGUANINE, GUANOZINE-2,3-BARIUM PHOSPHATE). IT IS SHOWN THAT HELA AND AM-I CELLS ARE SENSITIVE ONLY TO 8-AZAGUANINE AND 2,6-DIAMINOPURINE SULFATE. SPONTANEOUS MUTANTS OF HELA AND AM-I CELLS RESISTANT TO 8-AZAGUANINE (IN A CONCENTRATION OF 4 MU G-ML) WERE ISOLATED. FACILITY: INSTITUTE OF EXPERIMENTAL BIOLOGY OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

USSR

UDC 621.313.12-251.002.3:669-419.4]:539.4

METASHOP, L. A., Candidate of Technical Sciences, and STOLYAROVA, I. I., Engineer

"The Strength of Bimetallic Disks at Elevated Temperature"

Moscow, Vestnik Mashinostroyeniya, No 7, June 1972, pp 14-16

Abstract: Results are presented of research on the strength of welded bimetallic disks, which form the elements of a generator rotor. It is shown that the elastoplastic calculation of a homogeneous disk is applicable to the strength evaluation of disks of this design. The results of the described project are being used at the All-Union Scientific Research Institute of Electromechanics in the designing of high-speed contactless electric generators. 2 tables. 5 figures. 6 references.

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USSR UDC 620.197.6

TIMONOVA, M. A., STOLYAROVA, L. N., and SPIRYANINA, G. I.,

"Stannating of Magnesium Alloys"

Moscow, Zashchita Metallov, Vol 7, No 5, 1971, pp 621-623

Abstract: Coatings used to prevent contact corrosion of magnesium can be deposited in a stannate electrolyte. The starting material was a solution containing the stannate of an alkali metal. Additives used in galvanic tin plating were tested. Ground specimens made of ML5 magnesium alloy were used. Stannating was carried out an elevated temperature (80-90°). At room temperature no coatings are formed on magnesium and steel, and at 60-70° the adhesion to magnesium was low. In openings made in the center of the magnesium alloy strips, steel cylinders were placed. In the range of concentrations tested (K_2SnO_3 and $Na_4P_2O_7$ up to 100 g/liter, NaOH up to 25 g/liter, and $NaC_2H_3O_2$ up to 20 g/liter), the greatest effect on coating thickness was shown by the K_2SnO_3 and NaoH concentrations. The tests led to the following recommendation for the solution to be used in stannating magnesium alloys (ML5, ML10, ML12, and so on) (g/liter): K_2SnO_3 80-90; NaOH 7.5-10, $NaC_2H_3O_2$ 8-12; and $Na_4P_2O_7$ 45-50. The stannating conditions are as follows: tempera-

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USSR

TIMONOVA, M. A., et al., Zashchita Metallov, Vol 7, No 5, 1971, pp 621-623

ture 80-90° and duration 20-25 minutes. On the magnesium alloy the coating consisted of magnesium stannate and magnesium bydroxide (26.7% Mg and 59.6% Sn) but pure tin was deposited on steel. The coating thickness on the magnesium alloy was 3-5, and on the steels -- 5 microns. The growth in thickness of the coating slows down with time and practically ceases after 10 minutes. The adhesion of paint and lacquer cotaings to the stannate coating was tested for different drying conditions. It was found that the initial adhesion of paint or lacquer coatings -- both for hot and cold drying conditions -- to stannated magnesium alloy is good. When moisture is introduced into the environment, the adhesion of the paint or varnish coating in the case of hot drying is reduced much less than for cold drying.

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USSR

UDC 624.07:534.1

STOLYAROV, N. N., DEDOV, N. I.

"Bending and Stability of Flexible Shells and Shells of Nonlinearly Elastic Material Under Fixed Fastening of the Rims"

V sb. Raschet prostranstv. sistem v stroit. mekh. (Calculation of Three-Dimensional Systems in Structural Mechanics -- Collection of Works), Saratov, Saratov University, 1972, pp 40-44 (from RZh-Mekhanika. No 3, Mar 73, Abstract No 3V296)

Translation: The finite difference method is used to solve a series of geometrically nonlinear problems on the bending of rectangular plates and hollow shells of a nonlinear material acted on by a transverse load uniformly distributed either over the entire surface or over a rectangular area in their center. The systems of nonlinear algebraic equations relative to values of the force functions and bends at nodal points of the orthogonal grid are solved by the general iteration method. Computational results of critical values of loads for cylindrical panels made of nonlinearly elastic material, the characteristics of which are given, are presented. E. I. Sokolov.

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USSR

STOLYAROV, S. N.

UDC: 621.378.35

"Effect Which the Properties of Heterojunction Layers Have on the Basic Characteristics of Injection Lasers"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972, pp 69-76

Abstract: The Epstein layer model in the presence of absorption is taken as a basis in calculating the principal characteristics of injection lasers: injection threshold current, the size of the region taken up by emission inside the active layer, and the angular distribution of the output emission. It is found that threshold current is appreciably reduced by improving the waveguide properties of the active region through an increase in abrupt changes in the index of refraction. It is noted that the threshold currents of symmetric structures in some instances are considerably lower than for asymmetric structures. Conditions are found for layer parameters which enable stimulation of axial modes. A study is made of the effect which the magnitude of

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USSR

STOLYAROV, S. N., Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972, pp 69-76

abrupt changes in the index of refraction and dimensions of the active region has on the characteristic dimension of the field of emission within the laser (short-range field) and on the angular distribution of emission from the laser. The author thanks V. I. Borodulin for constructive criticism, and G. F. Belova for doing the computations. Two illustrations, bibliography of eleven titles.

2/2

Superalloys

USSR

UDC 669.187.0:669.71:536.722

DYUBANOV, V. G., STOMAKHIN, A. Ya. and FILIPPOV, A. F., Moscow Institute of Steels and Alloys

"Aluminum Dissolution Enthalpy in Iron, Cobalt, and Nickel Melts"

Moscow, Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, No 3, 1972, pp 69-71

Abstract: The objective of this study was to determine experimentally the enthalpy of dissolution in molten Fe-Al, Co-Al, Ni-Al by the use of a high-temperature isothermal calorimeter. The procedure specified measurements and automatic recording of temperature variations of the melt following the addition of a specific weighted sample of aluminum. The temperature of the isothermal shell was maintained constant by a highly sensitive automatic regulator. The values of the partial heats of aluminum solution for molten iron were 61.5 ± 3 kj/g-atom Al; for cobalt--91.1 ± kj/g-atom Al; for nickel--147.5 ± 8 kj/g-atom Al. (2 illustrations, 1 table, 3 bibliographic references)

ACC. NR. AP0049962 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code 4R0051

105527s Ultraviolet absorption spectra of some hydroacridines. Ershova, T. I.; Ershov, O. A.; Vysotskii, V. L.; Stonik, V. A. (USSR). *Opt. Spektrosk.* 1970, 28(1), 47–50 (Russ). Absorption spectra of acridine (I), 1,2-dihydroacridine (II), 1,2,3,4-tetrahydroacridine (III), 1,2,7,8-tetrahydroacridine (IV), 1,2,5,6,7,8-hexahydroacridine (V), and 1,2,3,4,5,6,7,8-octahydroacridine (VI) were scanned in the range 210–400 mμ in 10^{-2}–10^{-4} *M* EtOH, or hexane solns. The effect of the symmetry and size of the π-electron system on the spectral properties of I analogs was thus investigated. The absorption corresponds to $\pi \rightarrow \pi^+$ transitions in I–V; a weak $n \rightarrow \pi^*$ band was obsd. in the spectrum of VI at 235 mμ. The conclusion was made on basis of the changes between the spectra in solvents of different polarity. Redn. of the conjugate system led to hypsochromic shifts in the series I–VI. The form of the conjugated system obviously affected the size of shift. (The longwave absorption was the same in I and II; significant shifts occurred between I, and III, or IV and V.) Analogy between the spectra of I analogs and the corresponding compds. of the anthracene series was obsd. The effect of the heterocyclic N atom on the electron satn. in the π-electron system is discussed. H. Parizkova

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REEL/FRAME
19801900

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1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--CHROMATOGRAPHIC DETERMINATION OF GAMMA BUTYROLACTONE IN AQUEOUS SOLUTIONS -U-

AUTHOR-(02)-KARMILCHIK, A.YA., STONKUS, V.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 73-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHROMATOGRAPHY, LACTONE, AQUEOUS SOLUTION, GLYCEROL, SILICONE RESIN, ETHYLENE GLYCOL, TEFLON/(U)E301 SILICONE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0683 STEP NO--UR/0464/70/000/001/0073/0075

CIRC ACCESSION NO--AP0119591

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119591

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COLUMN, A M BY 6 MM, FILLED WITH 10PERCENT POLYETHYLENE GLYCOL 400 ON POWD. TEFLON WAS USED AT 160DEGREES, WITH HE CARRIER GAS (100 ML-MIN), SAMPLE SIZE 3 MU L, AND A KATHAROMETER DETECTOR. OTHER STATIONARY PHASES TRIED WERE SILICONE 3-301, GLYCEROL, DIGLYCEROL, TRIETHYLENE GLYCOL AND POLYETHYLENE GLYCOL 1500. FACILITY: INST. ORG. SIN., RIGA, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--REPEATED OPERATIONS ON THE LUNGS AND PLEURA -U-

AUTHOR-(03)-MANEVICH, V.L., BOGDANOV, A.V., STONOGIN, V.D.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 6, PP 62-66

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--THORACIC SURGERY, LUNG, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1767 STEP NO--UR/0531/70/000/006/0062/0066

CIRC ACCESSION NO--AP0129135

UNCLASSIFIED

017

CIRC ACCESSION NO--AP0129135 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DEPICTS AN ANALYSIS OF 21 REPEATED OPERATIONS ON THE LUNGS AND PLEURA PERFORMED IN PATIENTS WHO WERE PREVIOUSLY OPERATED UPON IN OTHER HOSPITALS. IN THE OVERWHELMING MAJORITY OF CAUSES OF FAILURE WERE DUE TO INCOMPLETE EXAMINATION OF THE PATIENT BEFORE THE FIRST OPERATION (1) AND HENCE A NONRADICAL OPERATION, TECHNICAL ERRORS COMMITED DURING THE OPERATION (2), COMPLICATIONS OCCURRING IN THE IMMEDIATE POSTOPERATIVE PERIOD (3). A TRUE RELAPSE OF THE DISEASE WAS REVEALED ONLY IN 2 CASES. THE METHODS OF EXAMINATION TO PATIENTS ADMITTED FOR REPEATED OPERATIONS ARE ANALYZED. THE RESULTS OF REPEATED OPERATIONS ARE GIVEN. OUT OF 21 PATIENTS OPERATED 6 DIED. A CONCLUSION IS MADE THAT OPERATIONS ON THE LUNGS SHOULD BE PERFORMED IN SPECIALIZED HOSPITALS, THIS WILL ENABLE TO REDUCE THE NUMBER OF COMPLICATIONS, INCLUDING THOSE WHICH REQUIRE A REPEATED OPERATIVE INTERVENTION. FACILITY: 3-YA KAFEDRA KLINICHESKOY KHIRURGII TSIU, MOSKVA.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210006-5"

USSR

STONOV, L. D. M. UDC 632.95

"Defoliants and Desiccants. Chemical Agents for Preharvest Removal of Leaves and Drying of Crops"

Defolianty i desikanty. Khimicheskiye sredstva preduborochnogo udaleniya list'yev i vysushivaniya sel'skokhozyaystvennykh rasteniy (cf. English above), 2nd revised and enlarged edition, "Khimiya", Abstract No 18 N493 by T. A. Bemeyeva)

Translation: The author analyzes the properties of compounds - defoliants and desiccants - and their toxicity, metabolism, and effect on crop yields and quality. He makes recommendations for the use of defoliants and desiccants in treating cotton, rice, sunflower, lupine, perennial grasses, seed-grown sugar beets, potatoes, and other crops. The research under way on the development of new defoliants and desiccants is described.

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USSR

UDC 632.95

STONOV, L. D., BAKUMENKO, L. A., USACHEVA, N. M., MANDEL'BAUM, YA. A., and BAKANOVA, Z. M.

"A Herbicide"

USSR Author's Certificate No 347045, filed 9 Mar 71, published 6 Sep 72 (from RZh-Khimiya, No 10, May 73, Abstract No 10N605P by T. A. Belyayeva)

Translation: O-(2-Nitrophenyl)-O-methyl-N-n-propylamidothiophosphate (I) in a dose of 1-2 kg/ha is proposed as a herbicide on fields of flax and vegetable crops. With application before sprouting, the activity of (I) in %: for oats 24-15, millet 98-100, beans 20-22, lettuce 17-67, beets 67-87, amaranth 75-88, flax and radish 0. The compound can be used in a mixture with other active compounds to broaden its spectrum of action.

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USSR

GRUZINSKAYA, N. A., ZUBKOVA, N. F., STONOV, L. D.

UDC 632.95

"Analysis of Residues of Bipyridylphosphate in Potatoes"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp 273-275 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N501)

Translation: For analysis of bipyridylphosphate (I) in potatoes, the sample is boiled with water in an acid environment for 5 hours, the filtrate is passed through a column with an ion-exchange resin dowex 50 W × 8, it is washed with water, HCl and a 2.5% solution of NH_4Cl, the I is washed with a saturated solution of NH_4Cl, it is reduced by $Na_2S_2O_6$ and spectrophotometrically analyzed at 396 nm. The degree of detection of I is 50%.

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USSR

UDC 632.95

MEL'NIKOV, N. N., STONOV, L. D., KHASKIN, B. A., GORDON, O. G., USACHEVA, N. M., SABLINA, I. V., GRUZINSKAYA, N. A.

"New Herbicide and Desicant -- Bipyridyl Phosphate"

V sb. Khim. sredstva zashchity rast. (Chemical Means of Plant Protection -- collection of works), No 1, Moscow, 1970, pp 167-173 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N492)

Translation: A series of phosphorus-containing salts of 4,4'-bipyridylium with the formula $[NC_5H_4\text{-}C_5H_4NCH_3]^+[(RO)OP(=X)YR']^-$ (I) (R, R', X, Y, the yield in %, the melting point in °C, $n^{20}D$ are presented): Me, Me, O, O, 58, 95-102, --; Me, Pr, O, O, 60, --; 1.4190; Me, Me, S, O, 59, 210 (dil.), --; Me, Me, S, S, 51, 106-7.5, --; Me, 2,4,5-$Cl_3C_6H_2$, S, O, 67, 84-5, --; Et, 2,4,5-$Cl_3C_6H_2$, S, O, 44, --, 1.6141 were syntbesized. In order to obtain I, equimolecular amounts of 4,5-bipyridyl and esters of phosphorus acids were heated for 15-20 hours in a solvent (C_6H_6, alcohol, petroleum ether) at 40-100°. With alkylation of the 4,4'-bipyridyl in an excess of esters of phosphorus acids with

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USSR

MEL'NIKOV, N. N., et al., Khim. sredstva zashchity rast., No 1, Moscow, 1970, pp 167-173

heating (70-100°) for 10-15 hours in the absence of a solvent or at 20-25° for 2-3 weeks, substances with the formula $[Cl_3NC_5H_4-C_5H_4NCH_3]^{2+}[(RX)OP(O)YR']^{2-}$ (II) are obtained (R, R', X, Y, the yield in %, and the melting point in °C are presented): Me, Me, O, O, 63, 117-120 (IIa); Me, Me, S, O, 34, 52-61.5; Me, Et, S, O, 30, 78-80; Me, Me, S, S, 68, 138 (dil.); Me, Et, S, S, 61, 118 (dil.); Me, 2,4,5-$Cl_3C_6H_2$, S, O, 80, 166 (dil.). The IIa has low toxicity for warm blooded animals, significant herbicidal activity and a high defoliating effect.

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USSR

UDC 632.95

SHOGAN, S. M., STONOV, L. D., TROITSKAYA, T. V., PARSHUTIN, S. N., and BARANOVA, L. N.

"Granulated Herbicides for Control of Overgrowth on Reclamation and Drainage Ditches"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works,), vyp 1, Moscow, 1970, pp 216-224 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N532 by T. A. Belyayeva)

Translation: Formulas and a technique have been devised for the preparation of granulated herbicides (monuron, diuron, atrazine, simazine) having any prescribed resistance to elution by water, and hence carrying effective lives, as well as any prescribed particle-size range. A procedure has been devised for determining resistance to elution by water by comparison with a sample of a granulated preparation of the same herbicide taken as a standard. The highest herbicidal activity is provided by preemergence application or by application during the growing period. Under rapid water-flow conditions, granulated diuron preparations that have been dried at 90° or subjected to prolonged drying at 60-70° are recommended.

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USSR

UDC 632.95

ZHARKOV, V. I., STONOV, L. D., and YERMOLAYEVA, A. S.

"Results of a Study of Anti-Wild-Oat Herbicides"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow 1970, pp 241-247 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N530 by T. A. Belyayeva)

Translation: The article describes results of tests of Karbin (I), avadex (II), triallate (III), and yalan (IV) an anti-wild-oat herbicides. III and IV in a dose of 1-1.5 kg/ha and 4-6 kg/ha respectively eradicate wild oats and have a favorable effect on wheat and barley yields. III and IV must be incorporated into the soil with a cultivator to a depth of at least 7 cm. I and II eradicate wild oats, but have an adverse effect on wheat and barley. The activity of I declines in drought years.

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USSR

UDC 632.95

PARSHUTIN, S. M., STONOV, L. D., ZABALUYEV, I. T., BATYROVA, M. SH., GALIFANOV, G. G., MULLIYEV, K. N., PAVLOVA, G. N., SHOGAM, S. M., KHRIPKO, T. V., KUR'YANOV, V. A., and KHRIPKO, V. G.

"Control of Overgrowth of Sewers and Drains in Turkmeniya"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 225-241 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N533 by T. A. Belyayeva)

Translation: The article compares the effectiveness and profitability of mechanical, manual, thermal biological and chemical methods of removing vegetation from drains. Data are given on results of herbicide tests and applications. To kill reeds, cattails and other weeds in sewers during the second and subsequent years of service, dalapon shows the greatest promise in doses of 24-30 kg/ha with the addition of wetting agent OP-7 or OP-10.

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USSR

UDC 632.95

MEL'NIKOV, N. N., MEL'NIKOVA, I. A., STONOV, L. D., KAZAKOVA, V. G., and GRABOVSKAYA, A. K.

"A Herbicide"

USSR Author's Certificate No 300143, filed 17 Sep 69, published 5 Oct 71 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N477)

Translation: 2-MeO-4-RNH-6-R'(HO)N-symm-triazines (I) (R = C_1-C_5-alkyl, R' = C_2-C_4-alkyl) are utilized as selective herbicides. Compounds I in a herbicidal dose of 1 kg/hektare in the pregermination stage are harmless to cotton. When used for treatment in the vegetative stage, compounds I with their high specificity for millet, were found to be very toxic for pigweed, corn mayweed, amaranth, wild oats and other weeds.

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USSR

UDC 632.95

NADTOCHAYA, O. G., GRUZINSKAYA, N. A., and STONOV, L. D.

"Determination of Butyphos in Cotton Plants"

Tr. 2-go Vses. soveshch. po issled, ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on Investigation of Residues of Pesticides, and Prevention of Pestidice Contamination of Foodstuffs, Fodder and the External Environment), Tallinn, 1971, pp 1790180 (From RZh-Khimiya, No 11, Jun 72, Abstract No 11N459)

Translation: The study material is pulverized, triturated with quartz sand, the homogenate is washed with acetone, filtered, 0.3 ml of concentrated HNO_3 is added to the acetone extract, the mixture is evaporated, and the residue is dissolved in ethanol and chromatographically analyzed on silica gel in a fixed layer in the hexane-acetone system (5:1), and developed with a bromophenol reagent. The sensitivity of the method is 0.5-1 γ. Within a half hour after applying butyphos to the leaf blade, the compound is detected in the petiole and in the zone of attachment of the leaf. The leaf blade tissue interacts with the butyphos and the content of the chemical decreases.

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USSR

UDC 632.95

STONOV, L. D., ZHIRMUNSKAYA, N. M., TROPIN, V. P., GOLYADKINA, A. G., and BOROVIKOVA, L. N.

"Herbicidal Activity of Atrazine and Simazine as a Function of the Physical and Chemical Properties of the Preparations"

Vsb. Khim. Sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp 1, Moscow, 1970, pp 201-209 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N458)

Translation: When the moisture content of the soil was fairly high, the degree of dispersion of particles of atrazine and simazine had no effect on their herbicidal activity. Changes in the concentration of auxiliary material OP-7 and sulfite-alcohol residues from 3 to 25% and also the sorption capacity had no effect on the herbicidal activity of the chemicals. The best wettability for powdered preparations of atrazine and simazine and the optimum stability of aqueous suspensions were observed when the specific surface was 15,000-20,000 sq. cm per gram.

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USSR

UDC 632.95

STONOV, L. D., SERGEYEVA, T. A., SIMONOV, V. D., SHOGAM, S. K., RADTSEV, V. S., and TITOVA, L. M.

"Yalan -- New Herbicide for Control of Echinochloa Weeds in Rice Plantings and Wild Oats in Wheat Plantings"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), Vyp 1, Moscow, 1970, pp 174-179 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N518 by T. A. Belyayeva)

Translation: Yalan (I) is a highly effective soil herbicide for the control of millet weeds in rice plantings. Tests have been made of a 60-percent emulsion concentrate and a 10% granulated preparation of I. The herbicidal action of I in the soil persists for 50-100 days. Before rice is planted, I is applied and worked in by harrow in doses of 2-6 kg/ha. For wild-oat control, I is applied in doses of 3-6 kg/ha before wheat is planted.

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USSR

UDC 632.95

NURIDZHANYAN, K. A., BLINOVA, V. G., STONOV, L. D., RATUMENKO, L. A., and USACHEVA, N. M.

"Concerning the Herbicidal Activity of Certain Aryl- and Alkyl-Containing Thioureides, Thioureas and Thiouracils"

V sb. Khim sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp 1, Moscow, 1970, pp 197-200 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N445)

Translation: The following compounds were synthesized: 3-R-methyl-2-thiouracils (I) (R and the melting point in °C are cited): Me, 264-5; Et, 202-3; Pr, 172-3; Bu, 163-4; iso-Bu, 214; C_6H_{13}, 120; Ph, 256; O-ClC_6H_4, -; substances with the formula PhCONHCSNHR (II) (R and the melting point in °C are cited): Me, 150; Et, 133; Pr, 133; iso-Pr, 113-4; Bu, 51-2; tert-Bu, 127-8; C_8H_{17}, 152-3; Ph, 143; o-ClC_6H_4, 145-6; p-$O_2NC_6H_4$, 182; p-$Me_2NC_6H_4$, 166-7; and substances with the formula H_2NCSHR (III) (R and the melting point in °C are cited): Me, 108; Et, 108; iso-Pr, 157; Bu, 79; iso-Bu, 93.5; tert-Bu, 165; C_6H_{13}, 83;

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USSR

NURIDZHANYAN, K. A., et al., V sb. Khim. sredstva zashchity rast., Vyp 1, Moscow, 1970, pp 197-200

C_8H_{17}, 97; Ph, 154; o-ClC_6H_4, 142; p-$O_2NC_6H_4$, 190; p-$Me_2NC_6H_4$, 182-3. Compounds I show higher herbicidal activity with respect to monocotyledons and dicotyledons than the corresponding uracils. Data are presented from tests of compounds II and III.

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USSR UDC 632.954:633.511

ZUBKOVA, N. F., NADTOCHAYA, O. G., and STONOV, L. D., All-Union Scientific Research Institute of Chemical Means of Plant Protection

"The Influence of Defoliants on Two Phases of the Formation Process of the Exfoliating Layer in Cultures of Cotton Plant Seed Leaves"

Moscow, Agrokhimiya, No 2, 1973, pp 128-133

Abstract: Experiments were conducted on seed leaf cultures of Gossipium hirsutum L, type 108-F, prepared from sprouts which had two true leaves. The explanted leaves measured 12 mm, and they were exposed to the defoliants by placing the stem ends in a 1% agar solution containing the test substance, in Petri dishes. Tests were made using butyphos, magnesium chlorate, and ethrel. The length of the first phase was determined to be from the time of preparation until the explanted leaves' loss of sensitivity to indolyl-acetic acid. For this reason the leaves were placed in an agar solution containing indolyacetic acid at intervals and observation was made for the cessation of the acid's inhibiting action in formation of the separating layer. The tests were repeated four times, in light, with a temperature of 25-30 C. Results indicated that butyphos and magnesium chlorate speeded the second phase of formation but did not seem to effect the first phase

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210006-5"

USSR

ZUBKOVA, N. F., et al., Agrokhimiya, No 2, 1973, pp 128-133

of separating layer formation. In the constant presence of indolylacetic acid both phases were speeded by these defoliants. Ethrel speeded both phases of separation and proved to be the most active of the three tested defoliants.

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USSR UDC 632.954

GRAPOV, A. F., LEBEDEVA, N. V., MEL'NIKOV, N. N., SERGEYEVA, T. A., STONOV, L. D., TITOVA, L. M., and VOLKOTRUB, E. N., All Union Scientific Research Institute of Chemical Means of Plant Protection

"A New Herbicide Called Isophos"

Moscow, Agrokhimiya, No 1, 1972, pp 96-103

Abstract: Herbicidal properties of isophos-1, $ClCH_2P(S)(NHC_4H_9\text{-sec.})(OC_6H_3Cl_2\text{-}2,4)$, and isophos-2, $ClCH_2P(S)(NHC_3H_7\text{-iso})(OC_6H_3Cl_2\text{-}2,4)$, were tested on many plants, including cockspur grass (Echinochloa crus-galli), and rice grass (Echinochloa oryzicola), the weeds which commonly grow with rice. Application of 2-6 kg isophos-1 or isophos-2/ha killed 100% of the above weeds. The best time for application of the herbicides was before sowing of rice, or prior to its sprouting. A surface application produced the best results. Both types of isophos in 4-8 kg/ha doses were toxic to garden orache, amaranth, and white bent. Field pennycress, spring wild oat, and knotweed were of average sensitivity toward isophos.
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GRAPOV, A. F., et al., Agrokhimiya, No 1, 1972, pp 96-103

Among the cultivated plants, rice was most resistant toward this herbicide, followed by wheat, oats, and barley (most sensitive). Cotton, beans, radishes, and sunflowers are resistant to isophos, but sugar beets and flax are sensitive. Carrots were most resistant to isophos in doses of 1-4 kg/ha and tomatoes and cucumbers showed medium resistance. Isophos was 100% effective against rice grass in meadow-marshy, soddy-podzolic, and sierozem soils. It was only 83-97% effective in soils with high humus content. Effectiveness of isophos lasted for 30-100 days after application. Analysis of the soil horizons indicated that it remained mainly in the top 0-10 cm of soil. The structure of the aryl radical determines the phytotoxic properties of amides of thio- and dithiophosphonic acids. Presence of two Cl atoms in the phenyl group increases the herbicidal effects of these compounds.

2/2

USSR

UDC 581.148.2.04

STONOV, L. D., and ZUBKOVA, N. F., All-Union Research Institute of Plant Protection by Chemical Agents

"Defoliating Effect of Butyphos and Magnesium Chlorate"

Moscow, Fiziologiya Rasteniy, No 1, 1971, pp 194-198

Abstract: The authors agree with Western investigators that the effect of chemical defoliants is due to their tilting the balance of the antagonistic "auxin-ethylene" system in favor of ethylene which stimulates hydrolysis. In studying the antagonism between butyphos and magnesium chlorate and indoleacetic acid in cotton plants, they used tryptophan, a precursor of the hormone. The changes produced by the defoliants in nitrogen metabolism resulted in decreased activity of the auxin, and cancellation of the inhibitory effect of the hormone on the formation of the separation layer. The defoliating action of magnesium chlorate is ascribed to the depression of protein synthesis and accumulation of free amino acids, while that of butyphos is thought to be due to its increasing the content of free amino acids.

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USSR

UDC 631.547:633.51

STONOV, L. D., GORDON, O. G., ZUBKOVA, N. F., and GRUZINSKAYA, N. A., All-Union Scientific Research Institute of Chemical Plant Protectants

"Transpormation of Butyphos in Medium-fibrous and Fine-fibrous Cotton Plants"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 6, 1971, pp 54-56

Abstract: To study the interrelation between the transformation of butyphos in plant tissues and its defoliating activity, the authors determined the butyphos content of cotton plants by the method of thin layer chromatography. It was found that leaf blade tissues and explants (isolated abscission zones) of both fine-fibrous and medium-fibrous cotton show the same response to butyphos, viz. they decompose it. The decrease in the butyphos content of the leaf blade of medium-fibrous cotton apparently is not the direct cause of accelerated absciss layer formation in leaves.

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USSR UDC 632.95

MEL'NIKOV, N. N., KHASKIN, B. A., STONOV, L. D., SABLINA, I. V., GORDON, O. G., and GRUZINSKAYA, N. A.

"Desiccant-Defoliant"

USSR Authors' Certificate No 249113, filed 28 Mar 68, published 20 Jan 70 (from RZh-Khimiya, No 20 (II), 25 Oct 70, Abstract No 20 N624P by N. A. GRUZINSKAYA)

Translation: Salts of 4,4'-dipyridylium of general formula $[(Me)_nNC_5H_3C_5H_3NMe]^{+}$ $[(MeO)_2P(X)O]^{-}_m$ (I), where X = O or S, n = 1 when m = 2 or n = 0 when m = 1, are used as plant desiccant-defoliants. I's can be used for the desiccation and defoliation of cotton, potatoes and fruit crops in doses of 0.8-2.5 kg/ha.

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USSR UDC 632.954:547.495.1

BAKUMENKO, L. A., MATYUK, L. N., SHVETSOVA-SHILOVSKAYA, K. D., STONOV, L. D., MEL'NIKOV, N. N., All-Union Scientific Research Institute for Chemical Means of Plant Protection, Moscow, State Committee for Chemistry USSR

"Herbicidal Activity of Some Derivatives of Carbamic Acids"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 6, Jun 70, pp 51-52

Abstract: A series of β-dialkylaminoethyl esters of N-alkyl- (or aryl) carbamic acids and their quaternary ammonium salts with trimethyl (or diethyl) thiophosphate was synthesized and investigated in regard to their herbicidal activity under laboratory conditions. It was determined that an increase in the chain length of the alkyl radical from 2 to 8 carbon atoms increased the herbicidal activity. The chlorosubstituted arylcarbamic esters were found to be more active than the respective nonchlorinated analogues. The activity of β-dialkylaminoethyl esters of N-alkylcarbamic acid was higher than the activity of the N-aryl carbamic acid esters.
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USSR

BAKUMENKO, L. A., et al, Khimiya v Sel'skom Khozyaystve, Vol 8, No 6, Jun 70, pp 51-52

Introduction of the thiophosphoric acid anion increased the herbicidal activity somewhat, keeping the relationship of the chain length to activity.

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1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EXPLANTS AS TEST OBJECTS FOR STUDYING THE DEFOLIATING ACTIVITY OF NEW COMPOUNDS -U-

AUTHOR-(04)-STONOV, L.D., ZUBKOVA, N.F., GORDON, O.G., GRUZINSKAYA, N.A.

COUNTRY OF INFO--USSR

SOURCE--AGROKHIMIYA 1970, (1), 132-8

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DEFOLIANT AGENT, ORGANIC PHOSPHORUS COMPOUND, MAGNESIUM COMPOUND, CHLORATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0443 STEP NO--UR/0485/70/000/001/0132/0138

CIRC ACCESSION NO--AP0116109

UNCLASSIFIED

2/2 021 UNCLASSIFIED

CIRC ACCESSION NO--AP0116109 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTS WITH BUTIPHOS AND MG(CLO SUB3) SUB2 AS THE MOST COMMON DEFOLIANTS USED FOR DEFOLIATION OF COTTON SHOWED THAT EXPLANTS OF COTYLEDONARY AND TRUE LEAVES OF COTTON PLANTS PLACED IN PETRI DISHES IN AGAR CONTG. THESE DEFOLIANTS SHOWED THE SAME RESPONSE TO THESE DEFOLIANTS AS THE WHOLE PLANTS. EXPLANTS, THUS, MIGHT BE USED FOR PRELIMINARY TESTING OF NEW COMPDS. FOR DEFOLIATION OF COTTON. FACILITY: VSES. NAUCH. ISSLED. INST. KHIM. SREDSTV ZASHCH. RAST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 632.95

PIL'MENSHTEYN, I. D., BEZUGLYY, S. F., NESTEROVS, L. A., YAKOVLEVA, L. I., and STONOV, L. D.

"Adhesion of Emulsions to Treated Surface"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 291-297 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N534 by I. Pil"menshteyn)

Translation: Factors affecting the adherence of emulsion drops of 2,4-D butyl ester to various substrates (paraffinized surface of a polished steel plate and the surface of a bean leaf) were estimated according to the flow-off angle (α_{fl} -- the angle of inclination of the surface to the horizon at which a drop applied to that surface began to flow off). The method of correlation analysis shows that α_{fl} is determined by wetting conditions for the drops of the treated surface.

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USSR

UDC 632.95

MALYUTIN, P. P., RADTSEV, V. S., SAVIN, V. P., SAUKOV, V. D., STONOV, L. D., SHAKIROVA, A. M., Ufa Affiliate of the All-Union Scientific Research Institute of Agents for Plant Protection

"A Herbicidal Preparation"

USSR Author's Certificate No 311594, filed 21 Apr 70, published 19 Nov 71 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N470)

Translation: In order to intensify herbicidal activity and improve selectivity, 3-carbomethoxyaminophenyl N-(3-methyl phenyl)carbamate is used in a mixture with benzamidoxyacetic acid in ratios by weight from 1:2 to 1:6. In experiments, the mixtures inhibited the development of wild oat seedlings more actively than their components used separately.

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USSR

UDC: 632.95.024.1:(575.4)

GEL'TSER, Yu. G., GEPTNER, V. A., STONOV, I. D.

"Concerning the Effect of Herbicides on the Microorganisms of Mud and Water in the Collecting Basins of the Chardzhou Oasis in the Turkmen SSR"

Moscow, Agrokhimiya, No 6, Jun 72, pp 119-123

Abstract: The article is a report on a study done in 1968-1969 to determine the effectiveness of herbicides against microorganisms in the water and bottom silt of collecting basins in the Chardzhou oasis of the Turkmen SSR. Diurone and Monurone herbicides were studied. It was found that the herbicides differ in their effect on different physiological groups of microorganisms: in some instances the herbicide suppressed growth and development of microbes (actinomycetes and cellulose-disintegrating microbes), in other cases no appreciable effect on the numbers of the microbes was observed (spore microbes). Diurone showed the greatest bactericidal effect in the first few days after application, followed by an increase in the numbers of bacteria. Experiments *in vitro* showed that a 10% solution of Diurone is most lethal for the microorganisms; a 0.5% solution had no suppressive effect on the bacteria (with the exception of *Pseudomonas* and *Azotobacter*).

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USSR

UDC 632.95

BASHKATOV, YU. A., DANILENKO, L. A., MEL'NIKOV, N. N., SVIRIDOVA, P. I., STONOV, L. D., SIMONOV, V. D., SHVINDLERMAN, G. S., SHCHERBATYKH, YU. I.

"Neturin -- a New Herbicide for Cotton and Potatoes"

V sb. Khim. sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp. 1, Moscow, 1970, pp 179-187 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N446)

Translation: A new herbicide -- neturin (I) (N-phenyl-N-hydroxy-N'-methylurea) -- was synthesized. The compound can be produced with a high yield by reacting phenylhydroxylamine with KOCN. Treatment of vegetating plants with I is not highly effective. The best results are obtained when the herbicide is introduced into the soil before planting. As a rule, dicotyledons are more effectively suppressed by I than monocotyledons. Highly sensitive to I (70-100% inhibition of growth from a dose of 0.5 kg/hectare) are corn marweed, sheep sorrel, wild beets, pigweed, wild rice, buckwheat, soybeans, tomatoes, cabbage, cucumbers, radishes, clover and alfalfa. Sensitive to I (70-100% death from a dose of 1.5 kg/hectare) are field pennycress, field wintercress, barley grass, beans, vetch, carrots, beets and flax. Moderately sensitive (complete control with a dose of 3 kg/hectare) are oats, wheat, corn

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USSR

BASHAKOV, YU. A., et al., V sb. Khim. sredstva zashchity rast., vyp 1, Moscow, 1970, pp 179-187

beans, seed onions, and sunflowers. Rough snakeweed is among the weeds resistant to I, while potatoes and cotton are resistant crops. The compound retains high activity throughout the entire vegetative period in the upper layer of soil (0-5 cm). The activity of the herbicide begins to decline within 2 months after introduction in the lower and middle layers of soil. In doses of 3-4.5 kg/hectare, I destroyed 70-90% of the annual weeds in cotton fields, but in some instances caused temporary chlorosis in a dose of 4.5 kg/hectare. In potato fields, the compound in doses from 2 to 3 kg/hectare destroyed annual weeds throughout the entire season, which meant that potatoes could be grown without hilling. The compound has low toxicity for human beings. It is authorized in the Soviet Union for experimental production use on potatoes.

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USSR

UDC: 548.5:535.37

KUZ'MINA, I. P., LOBACHEV, A. N., PREDTECHENSKIY, B. S., STAROSTINA, L. S., STOPACHINSKIY, V. B., KHAYDUKOV, N. M., Institute of Crystallography, Academy of Sciences of the USSR

"Luminescent Crystals of Cuprous Oxide"

Moscow, Kristallografiya, Vol 18, No 3, May/Jun 73, pp 635-637

Abstract: The paper describes a method of growing large perfect crystals of Cu_2O to study bright narrow luminescence lines of recombination of free excitons. A polycrystal like specimen of Cu_2O is treated by zone melting with an electron beam. The resultant specimen usually consists of 2-3 crystals. A single crystal is grown, using one of these crystals as a seed. The result is a transparent cylindrical rod up to 10 mm in diameter and 100 mm long. These large crystals can be used to study many new properties of excitons -- interaction between excitons and the feasibility of making lasers based on cuprous oxide crystals.

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USSR

VAVILOV, V. S., IVANOV, V. S., KOPYLOVSKIY, D. B., STOPACHINSKIY, V. B.

"Methods of Studying Thermal Reflection in Semiconductors"

Leningrad, Fizika Tverdogo Tela, Vol 12, No 6, June 1970, pp 1678-1681

Abstract: Research on the thermal reflection spectra of GaAs at a temperature of about 500°K and CdTe at about 80°K as carried out. Various methods of effecting temperature modulation as well as the system for recording $\Delta R/R$ are described. In the thermal-reflection spectrum of GaAs, with the use of a CO_2-based laser for temperature modulation, $\Gamma_{15} \rightarrow \Gamma_1$, $\Lambda_3 \rightarrow \Lambda_1$, $L_3' \rightarrow L_1$ optical transitions were observed. On the basis of the example of CdTe it is shown that at low temperatures, in the analysis of thermal-reflection spectra, electron-hole interaction must be taken into account.

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1/2 034 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EXCITON THERMAL REFLECTION IN CADMIUM TELLURIDE -U-

AUTHOR-(04)-BALASHOV, A.A., IVANOV, V.S., KOPYLOVSKIY, B.D., STOPACHINSKIY, V.B.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(5), 869-72

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EXCITON, HEAT REFLECTION, CADMIUM TELLURIDE, SINGLE CRYSTAL, SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0891 STEP NO--UR/0449/70/004/005/0869/0872

CIRC ACCESSION NO--AP0136325

UNCLASSIFIED

2/2 034 UNCLASSIFIED

CIRC ACCESSION NO--AP0136325 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMOREFLECTANCE SPECTRA OF N-TYPE COTE SINGLE CRYSTALS WITH FREE CARRIER CONCN. OF SIMILAR TO 4.5 TIMES 10 PRIME15-CM PRIME3 WERE STUDIED AT 80-1400DEGREESK. THE EXCITON EFFECTS MUST BE TAKEN INTO ACCOUNT IN THE INTERPRETATION OF THE EXPTL. DATA, ESP. AT THE LOW END OF THE TEMP. RANGE STUDIED. THEORETICAL ANAL. OF THE SHAPE OF THE THERMOREFLECTANCE SPECTRUM DUE TO EXCITONS SHOWS GOOD QUAL. AGREEMENT WITH THE EXPTL. RESULTS. FACILITY: FIZ. INST. IM. LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC 621.315.592

BALTRAMEYUNAS, R., SAKALAS, A., STORASTA, YU., VAYTKUS, YU. [Vilnus State University imeni V. Kapsukas]

"Special Features Of Conduction In Ge Under Excitation By A Neodymium Laser"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 760-762

Abstract: The effect was investigated of the surface on the photoconductivity of n-Ge (σ = 40 ohm^{-1}. cm^{-1}) at 300° K. The specimens had unit [blokovyy] contacts. The single crystals were excited by pulses of a neodymium laser ($h\nu$ = 1.17 e.v.; τ_u = 40 nanosec) operating in one transverse mode. Oscillograms of the photoconductivity in nonetched specimens of Ge are shown and a graph is presented of the dependence of photoconductivity on the intensity of the laser light. The results obtained give a basis for the assumption that excitation by short laser pulses can prove to be useful for investigation of surface phenomena. 2 fig. 5 ref. Received by editors, 13 Oct 1971.

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1/2 037 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--NATURE OF CHANGES IN THE PHYSICAL PROPERTIES OF HARDENED STEELS AT LOW TEMPERATURES -U-

AUTHOR-(03)-LYSAK, L.I., ANDRUSHCHIK, L.O., STORCHAK, N.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL METALLOVED. 1970, 29(4), 841-6

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PHYSICAL PROPERTY, MARTENSITE, MAGNETOMETER, RHENIUM CONTAINING ALLOY, NICKEL CONTAINING ALLOY, IRON ALLOY, ALLOY PHASE TRANSFORMATION, DILATOMETRIC ANALYSIS, METAL RELAXATION, MAGNETIC FIELD, ISOTHERMAL TRANSFORMATION, METALLURGIC RESEARCH FACILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0389 STEP NO--UR/0126/70/029/004/0841/0846

CIRC ACCESSION NO--AP0126144

UNCLASSIFIED

2/2 037 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126144

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DILATOMETRIC AND MAGNETOMETRIC STUDIES WERE MADE OF PHASE TRANSFORMATIONS DURING SHARP COOLING IN LIQ. N AND ON SUBSEQUENT HEATING OF MN AND RE STEELS, AS WELL AS OF FE,NI ALLOYS. THE DECREASE IN THE AT. VOL. DURING THE X PRIME YIELDS ALPHA SUBM TRANSFORMATION LEADS TO PARTIAL RELAXATION OF INTERNAL STRESSES AT VERY LOW TEMPS., AND THIS ENHANCES THE RESUMPTION OF THE MARTENSITE TRANSFORMATION (FORMATION OF "ISOTHERMAL" MARTENSITE). THE STEELS STUDIED WERE MELTED IN A HIGH FREQUENCY FURNACE IN AR. THE MAGNETOMETRIC MEASUREMENTS WERE PERFORMED IN A MAGNETIC FIELD OF 6-7 KOE ON CYLINDRICAL SAMPLES. FACILITY: INST. METALLOFIZ., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 669.15--194:546.719:539.292

LYSAK, L. I., ANDRUSHCHIK, L. O., and STORCHAK, N. A., Institute of Metal Physics, Academy of Sciences Ukrainian SSR

"Change in the Physical Properties of Hardened Steels at Low Temperatures"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 29, No 4, Apr 70, pp 841-846

Abstract: Three steels were investigated to determine their physical properties at low temperatures. Compositions of the steels were (in%): 1.7 C and 6.0 Re, 1.3 C and 3.3 Mn, and the third contained 30% Ni. Martensite transformations were also studied in order to determine the nature of the so-called athermal and isothermal martensite.

After each experimental ingot was heated to 1000°C, it was water quenched to room temperature to obtain austenite. The Fe-Ni alloy was given a second heat treatment at 1100°C for two hours and was then water quenched. The relationship between the coefficient of thermal expansion and the change in the amount of martensite was determined at a temperature range of -200 to 0° C for both the Re- and Mn-steels. Magnetometric studies of both steels showed that no new portions of martensite were found when the temperature was increased from -200 to -120°C. The two phases formed when the samples were quenched in liquid nitrogen were χ'-martensite and retained austenite. Since the phase composition remained unchanged between -200 and -120°C, one would expect the coefficient of thermal expansion to

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USSR

LYSAK, L. I., et al., Fizika Metallov i Metallovedeniye, Vol 29, No 4, Apr 70, pp 841-846

be a straight line; however at approximately -170°C the slope of the thermal coefficient bends to a lower angle and at -140° C the angle of the curve bends downward a little more. The authors were unable to explain this anomaly.

In the Mn-steel the γ'-martensite to austenite transformation starts at -145±5°C. The decrease in the coefficient of thermal expansion during the transformation was believed to be the result of carbon atom ordering in the lattice pores and the relaxation of internal stresses.

If the γ'-martensite to austenite transformation plays a significant role in the formation of martensite during heating, then in carbon-free alloys in which there is no transformation, one would expect a less intensive formation of isothermal martensite during heating. Study of the Fe-Ni alloys showed that the same amount of martensite is formed regardless of cooling rate to -196°C. In the Fe-Ni alloys, as well as in alloys with additives of C, Mn, Mo, and Cr, in which there is no transformation, the austenite is supercooled and subsequent increase in temperature increases magnetization where the formation of martensitic needles will be observed. The reason for this vast difference in the property changes of these alloys is still unclear. It is possible that, in some manner, there is an atomic-ferromagnetic ordering effect in ternary alloys.

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USSR

LYSAK, L. I., et al., Fizika Metallov i Metallovedeniye, Vol 29, No 4, Apr 70, pp 841-846

The authors thank Academician G. V. Kurdyumov and Candidate of Technical Sciences V. G. Gorbach for their assistance in this work.

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USSR

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UDC 538.22:537.7:669.15:74.84-194

LYSAK, L. I., ANDRUSHCHIK, L. O., STORCHAK, N. A., and PROKOPENKO, V. G., Institute of Metal Physics, Academy of Sciences Ukr SSR

"Method for Studying the $k' \rightarrow \alpha_m$ Transition on the Basis of the Change in Physical Properties of Hardened Steels at Low Temperatures"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 3, Sep 70, pp 661-663

Abstract: The task of this work was the production of experimental data by a magnetometric method, as well as the measurement of the electrical resistance to confirm the fact that the change in R observed upon heating of steels quenched in liquid nitrogen is a result of the superimposition of two processes -- the increase of R resulting from formation of additional portions of k' -martensite from residual austenite and the reduction in R resulting from the $k' \rightarrow \alpha_m$ transition. A decrease in electrical resistance at below -100° was observed in manganese and rhenium steels, which could have been explained only by the structural changes related to the occurrence of the $k' \rightarrow \alpha_m$ conversion in these steels. The results of the experiments indicate that in order to study the $k' \rightarrow \alpha_m$ transition, the physical properties must be measured directly at the experimental temperatures, since cooling in liquid nitrogen for measurement of these properties leads to formation of additional martensite.

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USSR UDC 620.193.27

STORCHAY, YE. I., and TURKOVSKAYA, A. V.

"Pitting of Aluminum Alloys in Solutions of NaCl Without an Oxidizing Agent"

Moscow, Zashchita Metallov, Vol 6, No 6, Nov-Dec 70, pp 690-691

Abstract: It was experimentally confirmed that pitting corrosion of certain aluminum alloys in NaCl solutions without an oxidizer can take place both under conditions of self-solution and during anodic polarization. The confirmation was made by measuring the potential distribution along the surface of a short-circuited model of Al-$FeAl_3$ in 0.005 normal NaCl. The distribution curve for these potentials 60 minutes after beginning the experiment is presented. From comparing the effective values of the potential with the pitting formation potential of aluminum defined potentiostatically in the same solution it follows that the potential of the aluminum near the contact with the intermetallic compound $FeAl_3$ is entirely sufficient to disrupt the passive state.

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1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EQUATION OF EUTECTIC AND PERITECTIC CURVES OR TERNARY SYSTEMS. I. DERIVATION OF EQUATIONS -U-
AUTHOR-(02)-STORONKIN, A.V., VASILKOVA, I.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 699-703

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--EUTECTIC, TERNARY ALLOY, DIFFERENTIAL EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1101 STEP NO--UR/0076/70/044/003/0699/0703

CIRC ACCESSION NO--AP0123093
UNCLASSIFIED

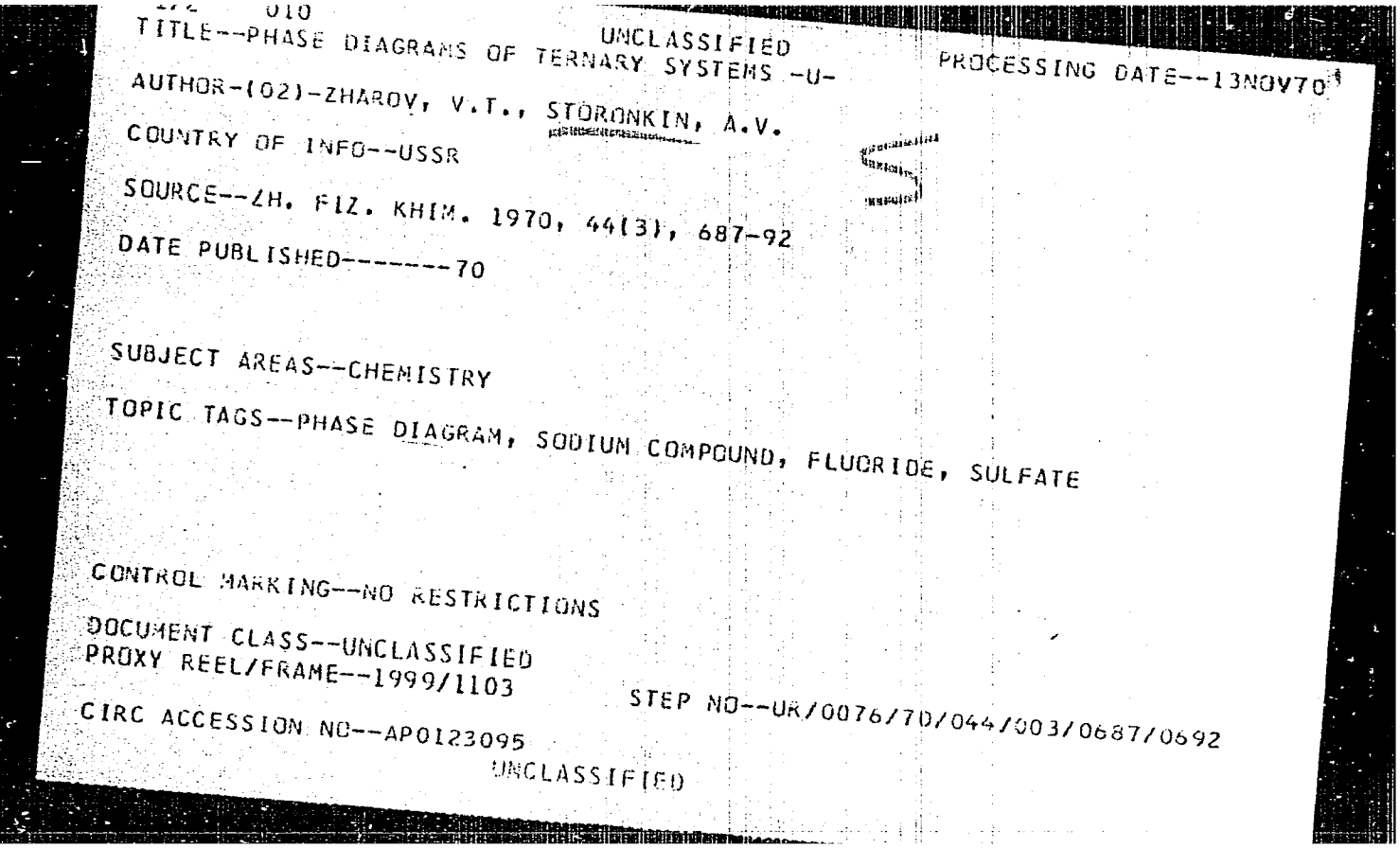
272 013 UNCLASSIFIED

CIRC ACCESSION NO--AP0123093 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFERENTIAL AND INTEGRAL EQUATIONS ARE DERIVED FOR THE EUTECTIC AND PERITECTIC CURVES IN A TERNARY SYSTEM. THE EQUATIONS ARE EXPRESSED IN TERMS OF THE COMPN. OF THE SYSTEM AND THE HEAT OF CYRSTN. OF THE COMPONENTS. THE APPLICATION OF THE EQUATIONS TO AN IDEAL SYSTEM IS DISCUSSED.

FACILITY: LENINGRAD. GOS. UNIV. IM. ZHDANOVA, LENINGRAD, USSR.

UNCLASSIFIED



UNCLASSIFIED

TITLE--PHASE DIAGRAMS OF TERNARY SYSTEMS -U-

PROCESSING DATE--13NOV70

AUTHOR-(02)-ZHAROV, V.T., STORONKIN, A.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 687-92

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE DIAGRAM, SODIUM COMPOUND, FLUORIDE, SULFATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1103

STEP NO--UR/0076/70/044/003/0687/0692

CIRC ACCESSION NO--AP0123095

UNCLASSIFIED

272 010 UNCLASSIFIED

CIRC ACCESSION NO--AP0123095 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRINCIPLES UNDERLYING THE SINGULAR POINTS ON TERNARY PHASE DIAGRAMS ARE EXAMD. EXPRESSIONS ARE DERIVED WHICH SHOW THAT FOR REAL PHASE DIAGRAMS, THERE ARE DEFINITE RELATIONSHIPS BETWEEN THE SINGULAR POINTS FOR DIFFERENT TYPES OF DIAGRAMS. THE NACLNA SU32 SO SUB4 NAF AND NA SU82 SO SUB4 NABR-NACL SYSTEMS ARE USED AS EXAMPLES.

IM. ZHDANOVA, LENINGRAD, USSR.

FACILITY: LENINGRAD. GOS. UNIV.

UNCLASSIFIED

USSR

UDC: 531.1

STOROZHENKO, V. A., Kiev

"Damping Daily Variation in Navigation Systems"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 4, Jul-Aug 73, pp 87-95

Abstract: The author studies several methods for damping daily variations in an inertial navigation system with a stabilized platform in the horizon for the case where the position coordinates of an object are calculated using the Rodrigue-Hamilton parameters. It is shown that the system must be asymptotically stable.

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USSR

UDC 531.1

STOROZHENKO, V. A., TEMCHENKO, M. YE., Kiev

"The Application of the Theory of Finite Rotations to the Problem of the Autonomous Determination of the Coordinates of a Moving Object"

Moscow, Mekhanika tverdogo tela, No. 3, May/Jun 71, pp 3-10

Abstract: An inertial navigation system of the semi-analytical type is discussed in which a horizontally stabilized platform is used. It is assumed that the point of suspension of the platform coincides with the geometric center of the object on which the system is located and that it moves in an arbitrary manner over the surface of the earth. The theory of finite rotations of a solid is applied to solve the problem of the autonomous determination of the coordinates of the position of the moving object. It is shown that the location of the object can be determined if a vector of finite rotation θ is constructed on its edge by using the projections ω_x, ω_y, ω_z of the angular velocity vector of the trihedron xyz (rigidly connected to the stabilized platform of the inertial navigation system) on its own axes. The analytical sense of the Cayley-Klein parameters characterizing a finite rotation of a solid is explained as applied to the problem of autonomous determination. This is done by introducing a coordinate system which is a stereographic reflection of the Cartesian coordinate system on a sphere. The analogy with the movement of a solid around a

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USSR

STOROZHENKO, V. A., TEMCHENKO, M. YE., Mekhanika tverdogo tela, No. 3, May/Jun 71, pp 3-10

fixed point makes it possible to show how one can determine the coordinates of the location of an object on the basis of the changing Cayley-Klein parameters. To determine the position of an object relative to the rotating earth, one constructs a curved coordinate grid on a rotating sphere. It is noted that the orientation of the stabilized platform of the inertial navigation system in the azimuth is of no value in determining the location of a moving object.

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USSR

UDC 531.1

STOROZHENKO, V. A., TEMCHENKO, M. YE., Kiev

"Problem of Autonomous Determination of the Location of an Object in Polar Regions"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 5, 1971, pp 16-22

Abstract: An inertial navigation system in the cartesian coordinate system stereographically mapped on a sphere was proposed in a previous paper [V. S. Kamenskiy, Izv. AN SSSR. Tekhnicheskaya kibernetika, No 2, 1965]. It was assumed that the stabilized platform of the system had to be specially oriented azimuthally. A structural diagram of the autonomous determination system designed for navigation in polar latitudes was constructed using a log and a number of simplifying assumptions. In the present paper, a study is made of an autonomous determination system constructed on the basis of a horizontal platform arbitrarily oriented azimuthally. The coordinates of the moving object are calculated in the system using the Cayley-Klein parameters and the cartesian coordinate system stereographically mapped on a sphere. The given system can be used without simplifying assumptions both in middle and high latitudes. A comparative analysis of the version of the inertial navigation system investigated here and the one designed by Kamenskiy is performed.
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STOROZHENKO, V. A., Kiev

"On Autocompensation of Dry Friction in Accelerometers by Forced Rotation"

Moscow, Mekhanika Tverdogo Tela, No 6, Nov/Dec 70, pp 61-63

Abstract: The author investigates an inertial guidance system with forced rotation to compensate for disturbances. The uniaxial inertial system shown in the figure is considered. The platform is kept level by integral correction through gyroscope 1, two accelerometers with mutually perpendicular axes of sensitivity, integrator 2, and torque pickup 3. Compensation for the constant errors of the accelerometers is provided by rotating them about an axis perpendicular to the plane of the platform with fixed angular velocity Ω. It is assumed that the vehicle which carries the system moves along an arc of a great circle on a non-rotating sphere. It is shown that with proper selection of the angular velocity of forced rotation, the increasing inertial guidance error due to dry friction in the accelerometers is converted to

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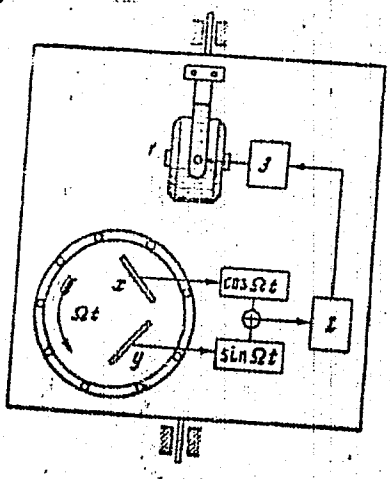
STOROZHENKO, V. A., Mekhanika Tverdogo Tela, No 6, Nov/Dec 70, pp 61-63

an oscillatory error, i. e. forced rotation makes the system practically stable, in contrast to the case of viscous friction in accelerometers.



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1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--LITHIUM SULFATE SULFURIC ACID WATER SYSTEM AT 25DEGREES -U-

AUTHOR-(02)-SHEVCHUK, V.G., STOROZHENKO, V.A.

COUNTRY OF INFO--USSR

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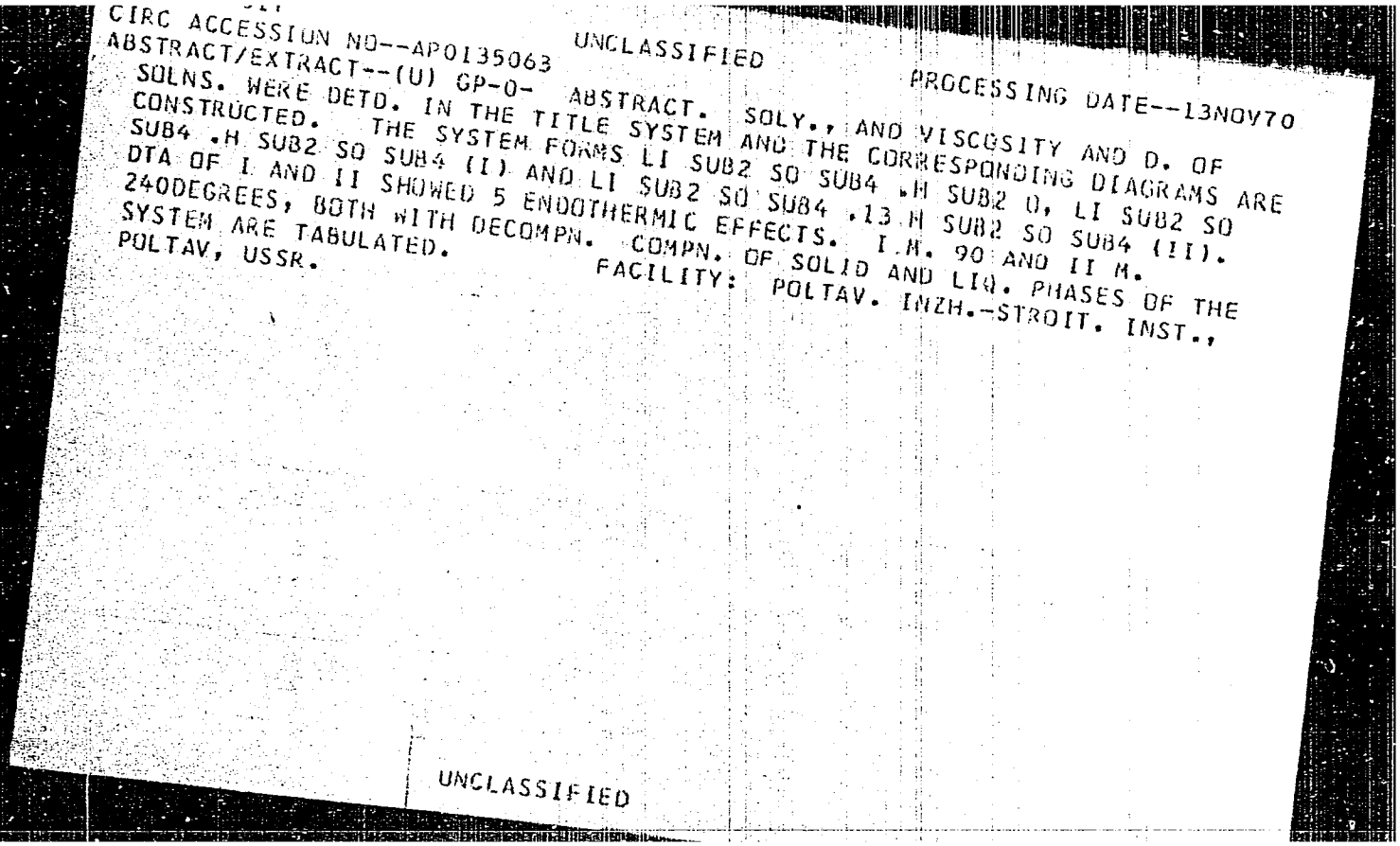

CIRC ACCESSION NO--AP0135063 UNCLASSIFIED PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY., AND VISCOSITY AND D. OF SOLNS. WERE DETD. IN THE TITLE SYSTEM AND THE CORRESPONDING DIAGRAMS ARE CONSTRUCTED. THE SYSTEM FORMS LI SUB2 SO SUB4 .H SUB2 O, LI SUB2 SO SUB4 .H SUB2 SO SUB4 (I) AND LI SUB2 SO SUB4 .13 H SUB2 SO SUB4 (II). DTA OF I AND II SHOWED 5 ENDOTHERMIC EFFECTS. I.M. 90 AND II M. 240DEGREES, BOTH WITH DECOMPN. COMPN. OF SOLID AND LIQ. PHASES OF THE SYSTEM ARE TABULATED.

FACILITY: POLTAV. INZH.-STROIT. INST., POLTAV, USSR.

UNCLASSIFIED

Powder Metallurgy

USSR

UDC 621.762.27

STOROZHENKO, V. N., Dnepropetrovsk Chemical Technology Institute

"Electrolytic Aluminum Powder and Its Properties

Kiev, Poroshkovaya Metallurgiya, No 8, 1971, pp 1-9

Abstract: The electrolytic production of aluminum powder in an inert atmosphere at temperatures below the m.p. of aluminum (660°) can provide high specific surface, low oxidizability, high purity, and easy regulation of the granulometric composition of the powder. An equimolar, fusible (t = 150°) $AlCl_3$-NaCl mixture was selected as the electrolyte. The experiments were conducted on a laboratory cylindrical electrolyzer with a 100 amp load with coaxial electrode arrangement. All parts of the apparatus in contact with the melt or with electrolyte vapor are made of A3 grade aluminum. Two aluminum (A99) cylinders with a common bottom served as soluble anodes. The electrolyzer design permits electrolysis and cooling of the cathode containing powder in an inert gas (argon). The electrolyzer was placed in a crucible electric furnace. Following purging of the equipment with argon for 20-30 minutes through the hollow cathode rod, electrolysis was begun, with the argon flow maintained. After electrolysis the aluminum powder removed from the cooled cathode was dried in a 1-2 mm Ag vacuum at 80-100° and cooled in argon. The current-based yield was determined from the weight of the finished powder using a copper

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STOROZHENKO, V. N., Kiev, Poroshkovaya Metallurgiya, No 8, 1971, pp 1-9

coulomb-meter. The aluminum oxide content in the powder was determined by chlorination of weighed samples at t ~ 500° with 100% Cl_2 in corundum crucibles. The effect of electrolysis conditions on granulometric composition and powder particle morphology was studied for the first time. It was shown that with a decrease in temperature, increase in initial current density, and decrease in the duration of electrolysis the proportion of the coarse fractions in the precipitate is reduced and the particle size dispersion is narrowed. When the current density is reduced, particle shape changes from elongated branched to compacted and then to laminar. Powder particles are perfect single crystals. Analysis showed that the content of principal impurities in electrolytic aluminum powder does not exceed those for A99 grade aluminum. Some chlorine ion content was found in the powder: for the fraction < 40 microns -- 0.28%; +100-120 micron fractions -- 0.22%. The specific surface of electrolytic powder is greater, and the gravimetric density and aluminum oxide content per unit surface less than for power obtained by pulverization of liquid aluminum and by mechanical grinding of solid aluminum.

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USSR

STOROZHENKO, V. N.

UDC 669.71.472

"Electrocrystallization of Powdered Aluminum From a Chloride Melt"

Sb. tr. Vses. mezhvuz. nauch. konferentsii po teorii protsessov tsvetn. metallurgii (Collected Works of the All-Union Interuniversity Scientific Conference on the Theory of Processes in Nonferrous Metallurgy), Alma-Ata, 1971, pp 386-396 (from RZh-Metallurgiya, No 7, Jul 1971, Abstract No 7G205)

Translation: The possibility of obtaining electrolytic Al-powder from NaCl-$AlCl_3$ electrolyte of equimolar composition with a soluble anode is established. With a decrease in temperature and an increase in current density, the crystals of the precipitate become finer, gradually converting from the two-dimensional leaf forms to the three-dimensional dendrites and acicular crystals of micron dimensions. Electrolytic Al powder is purer than the initial Al used as the anode, and it has greater surface than the powder obtained by atomizing liquid Al. There are 11 illustrations and a 10-entry bibliography.

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USSR

UDC 531.01

STOROZHENKO, V. O., Institute for Mathematics of the Academy of Sciences of the Ukrainian Soviet Socialist Republic

"On Autocompensation of Errors of Accelerometers by Means of Reversing"

(Presented by Ishlinskiy, O. Yu., Academician)

Kiyev, Dopovidi Akademii Nauk, Seriya A, Ukrainian SSR, No 10, 1971, pp 931-935

Abstract [Ukrainian article] : The errors of the inertial navigation system with imperfectly working accelerometers are analyzed. The reversing of accelerometers is performed by means of their forced rotation in the plane of the stabilized platform. It is demonstrated that the forced rotation at sufficiently high angular speeds of rotation, in comparison with the Shuler frequency, decreases essentially the accelerometer errors at the expense of continuous zero dislocations. However, the forced rotation practically does not change the system errors at the expense of the insensitivity zone of accelerometers. Four illustr., 20 formulas, four biblio. refs.

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Acc. Nr. AP0045148 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code UR0138

91253y **Properties of ebonites containing lignin treated by electrohydraulic shock.** Kochanova, O. M.; Zhdanova, S. V.; Storozheva, L. N.; Rempel, S. I. (Sverdlovsk. Filial Nauch.-Issled. Inst. Rezin. Prom., Sverdlovsk, USSR). *Kauch. Rezina* 1970, 29(1), 20–2 (Russ). Lignin (I) was washed with H_2O at 50–2°, acidified to pH 2.5–2.7, filtered, placed in a reactor contg. H_2O, and treated by electrohydraulic shock at a voltage of 45 kV for 8 min at 130 impulses/min. The modified I conferred on ebonite (II) superior elastic, physicomech., and dielec. properties. The physicomech. and dielec. properties of I-filled II were as good as those of II filled with II dust or kerogen-70. The max. vulcanization temp. of I-filled II was 180°. CKJR

LD

REEL/FRAME

19780048

USSR

UDC 621.382.002

LABUTIN, N.I., MARTYNOV, V.V., PAVILAYNEN, V.S., STOROZHUK, G.A.

"Transfer Of Defects Of Photopattern To A Silicon Oxide Film In The Process Of Contact Photolithography"

Elektron.tekhnika. Nauch.-tekhn.sb. Mikroelektronika (Electronic Technics. Scientific-Technical Collection. Microelectronics), 1971, Issue 5(31), pp 41-44 (from RZh:Elektronika i yeye primeneniye, No 5, May 1972, Abstract No 5B392)

Translation: The transfer in the process of photolithography of the defects of a photopattern [fotoshablon] to SiO_2 was studied by the electron microscopic method for standard photolithographic regimes which are used in the production of silicon integrated circuits with the aid of positive photoresists. The critical dimensions of the permissable defects on the photopattern are determined. Summary.

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USSR UDC:621.039.548.343

SKOROV, D. M., DASHKOVSKIY, A. I., ZALUZHNYY, A. G. and STOROZHUK, O. M.

"Installation for Study of the Kinetics of Separation of Gaseous Radioactive Fission Products from Irradiated Materials"

Moscow, Atomnaya Energiya, Vol 36, No 1, Jan 74, pp 76-77

Abstract: Recently, the study of the diffusion mobility of inert gases in reactor materials has been intensified, since neutron bombardment causes gaseous fission products to be formed in materials, causing such undesirable phenomena as radiation swelling and embrittlement. The authors suggest an installation for determination of the kinetics of liberation of radioactive gaseous fission products, eliminating the shortcomings of earlier installations (content of other volatile radioactive fission products in addition to inert gases in fuel specimens and the requirement for extermely high purity of helium to prevent oxidation of specimens, altering the kinetics of gas liberation from the specimen) by heating the specimen in a high vacuum with continuous oil-free evacuation of the working volume by high-vacuum pumps and prevention of entry of nongaseous fission products into the trap for inert gas collection.

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Acc. Nr: AP0044142 Ref. Code: UR 0244

PRIMARY SOURCE: Voprosy Pitaniya, 1970, Vol 29, Nr 1, pp 3-7

THE EFFECT OF DIVERSE PROTEIN-RICH FOOD PRODUCTS ON THE EXTERNAL SECRETORY FUNCTION OF THE PANCREAS

P. G. Storozhuk (Krasnodar)

Summary

External secretion of the pancreas in response to high-protein products of animal origin, which were given to 5 dogs with an isolated pancreatic duct after Bakuradze-Soloviev as modified by N. P. Pyatnitsky in amounts containing equivalent proportions of protein, was studied. The investigation covered secretion in response to egg-white, egg-yolk, crude sour milk curd, forcerish and forcemeat. The amouts of the juice, bicarbonates, chemotrypsin, proteinases and amylase released during 5 hours of the experimentation were measured. The egg-white was found to display the least juice-producing effect, the egg-yolk inducing a somewhat greater secretion. The secretion in response to fish and meat was 1.5—2 times as high as to that of egg-white. The secretion registered in response to crude sour milk curd proved to be highest. The amount of bicarbonates and enzymes changed more commonly parallel with that in the amount of juice. The character of curves recording responses to different protein products was dissimilar.

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REEL/FRAME
19770623

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USSR

UDC 591.185.5:577.37:599.423

STOSMAN, I. M. and KONSTANTINOV, A. I., Leningrad University

"Characteristics of Evoked Potentials in the Colliculus Inferior of the Developing Horseshoe Bat Rhinolophys ferrum-equinum During Exposure to Ultrasound"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, No 6, 1972, pp 612-616

Abstract: The first high-threshold low-amplitude evoked potentials were recorded in 7-day-old R. ferrum-equinum, and 2 to 3 days later the frequency-threshold curves ranged from 10 to 50 kHz. At age 12 to 16 days the band of frequencies perceived widened to 60 to 70 kHz. By day 21 the audiogram was indistinguishable from that recorded in the colliculus inferior of adult animals. The development of the echolocation system proceeds more quickly and is completed sooner in horseshoe bats than in other forms of the Vespertilionidae, a phenomenon consistent with other aspects of their development. The period of embryonal development is much longer than in other bats, but the late birth of young R. ferrum-equinum is compensated by more rapid postnatal growth. After 1 month they are able to fly and catch insects, a stage not reached by, e.g., Myotis oxygnathus until 2 months after birth.

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USSR

UDC 629.7.036.3:536.46

(2)

GUSSAK, L. A., SAMOYLOV, I. B., SEMENOV, YE. S., MURASHEV, A. F., OZEROV, Ye. A., and STOTLAND, A. I.

"The Concluding Stage of the Turbulent Combustion of a Heterogeneous Mixture"

Moscow, Goreniye i Vzryv--Sbornik (Combustion and Explosion--Collection of Works), Nauka, 1972, pp 365-369 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 2, 1973, Abstract No 2.34.30. Resume)

Translation: This paper investigates a subsonic stream of gases in the nozzle zone of a model gas-turbine engine combustion chamber at temperatures from 700 to 1000°C. It is shown that the gas stream is not an equilibrium one, and consequently the thermodynamic approach may prove insufficient for determining the properties of such a stream. The work was conducted on an experimental combustion chamber in which diesel fuel was burned. The nonequilibrium state of the combustion products was established on the basis of ionization data of the gases and on the basis of their luminescence spectra. The mean temperature was simultaneously measured by thermocouples, and the composition of the gas-stream combustion products was determined. The obtained data permit the conclusion to be drawn that at regimes of 700 and 800°C, slow volume reactions of hydrocarbon burnout take place. The considerably large inequilibrium observed at regimes of 900 and 1000°C is caused mainly by removal of the

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