"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 620.192.43:541.12.014

KARPINOS, D. M., TUCHINSKIY, L. I., and VISHNYAKOV, L. R., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Selection of a Matrix for a Composite Material Which Does Not Dissolve the Reinforcing Fiber"

Kiev, Poroshkovaya Metallurgiya, No 5, May 73, pp 68-72

Abstract: On the basis of concepts of alloy thermodynamics, the composition of a multicomponent matrix of a composite material was calculated for a matrix which does not dissolve single-component reinforcing fibers. A calculation was made for the case when the matrix forms a solid solution with the fibers with limited solubility of the components. An experimental check of one of the calculated compositions of a four-component Ni-Cr-W-Al matrix, reinforced with tungsten fibers, confirmed the correctness of the obtained relationships. The experimental check showed that the tungsten fibers were not dissolved in the matrix after 100 hours of annealing at 1200°C. 2 figures, 9 bibliographic references.

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RAN/ /R-760 /5-APR-73
Dec 72

(5)

fractional exponent equal to -1/2, an integral kernel representation is derived, and time dependencies of the real and imaginary parts are computed and plotted. A graphical analysis shows that the representation of an elastic modulus by a complex Q^{ν} operator assures an energy decrease with tension relaxation in agreement with the second law of thermodynamics.

Karpinos, D. M., L. I. Tuchinskiy, M. L. Gorb, E. S. Umanskiy, and V. Ya. Fefer. Mechanical properties of titanium reinforced by unidirectional molybdenum wires. Problemy prochnosti, no. 6, 1972, 28-32.

The mechanical properties of type VT 1-0 titanium, reinforced with unidirectional wires of molybdenum M4, were investigated. Reinforcement wires 0.8 mm in diameter were wound unidirectionally on titanium matrix plates 0.08 mm thick. The wire volumetric content was regulated by the winding pitch, and comprised 10, 20, 32, and 44% by volume. Tensile strength and impact viscosity tests were conducted. Non-reinforced titanium plates were tested for comparison. The tensile strength was tested at 20, 400, 600, and 800° C; five specimens for each volumetric content of the reinforcement wire were tested at each temperature. At all investigated temperatures, a practically linear relationship was observed between the short-term tensile strength and the volumetric wire content V_w. An increase of titanium strength due to reinforcement is characterized by the strengthening coefficient K, which represents the ratio of the composition strength to the titanium strength at a specific temperature.

TUCHINSKIY, L. I.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

Composite Materials

USSR

UDC 669.71:669.24.27.28

KARPINOS, D. M., TUCHINSKIY, L. I., VISHNYAKOV, L. R., PERESELENTSEVA, L. N., KLIMENKO, L. N., and DEYMONTOVICH, V. B., Kiev

"Effect of Alloying a Nickel Matrix With Reinforcing Metal Fibers on the Structural Stability of Ni-W and Ni-Mo Composites"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 6, Nov-Dec 72, pp 107-113

Abstract: The problem of creating structurally stable composites for the Ni-W and Ni-Mo system was examined. By alloying the nickel matrix with tungsten up to the maximum saturation of the nickel solid solution, reinforced tungsten fibers were obtained in which the fibers did not dissolve at 1000-1200°C. At these temperatures the Ni-Mo composite was not so stable because an intermetallic compound is formed at the fiber-matrix interface and the maximum saturation of the nickel matrix with molybdenum does not prevent dissolution of the molybdenum fibers. Four figures, 2 tables, and 8 bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

UDC 539.4

USSR

KARPINOS, D. M., TUCHINSKIY, L. I., GORB, M. L., UMANSKIY, E. S., FEFER, V. Ya., Kiev

"Mechanical Properties of Titanium Reinforced with Unidirectional Molybdenum Wires"

Kiev, Problemy Prochnosti, No 6, 1972, pp 28-32.

Abstract: This work presents a study of the mechanical properties of reinforced titanium-based materials. Compositions based on type VT-1-0 alloy reinforced with unidirectional M4 molybdenum wires were studied. The specimens were made by vacuum dynamic hot pressing. The volumetric content of wire was adjusted by the winding step and amounted to 10, 20, 32 and 44 vol.%. Each specimen consisted of 20 to 30 plates with wound wires. The dependence of tensile strength, yield point, $\sigma_{0.2}$, Young modulus and impact toughness on molybdenum content was studied. It was found that the tensile strength and modulus of elasticity of compositions increased linearly with increasing volumetric content of wire, which agrees with the additive rule. It is demonstrated that as temperature rises, the strengthening factor of the compositions increases significantly. Impact toughness was found to be dependent on composition and orientation of reinforcing elements.

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USSR

UDC 539.4

KARPINOS, O. M., UMANSKIY, E. S., RUDENKO, V. N., TUCHINSKIY, L. I.

"The High-Temperature Strength of Copper Reinforced With Tungsten Fibers"

Problemy Prochnosti, No 5, May, 1970, pp 33-37

Abstract: A promising method recently developed for the reinforcement of metals is the dynamic hot pressing of compositions. This method has been used with compositions of nickel and copper, reinforced with tungsten fibers and networks. The results of research on the short-term strength and plasticity of nickel, reinforced with tungsten networks, have been presented in a previously published communication. The present work deals with the mechanical properties of copper reinforced with tungsten fibers, oriented along the axis of elongation, as well as with specially woven tungsten networks. All the materials were obtained by dynamic pressing at a temperature of 950-1000° C. It is found that the nature of the destruction of compositions depends mainly upon their constituents and upon the strength of the alloy between the strands and the matrix. With respect to short-term strength, such materials surpass the best modern copper heat-resistant alloys. This is particularly noticeable at high temperatures. Furthermore, the employed regimes of dynamic hot pressing did not provide for a sufficiently firm bond between the copper matrix and the unidirectional fibers if

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KARPINOS, O. M., et al, Problemy Prochnosti, No 5, May, 1970, pp 33-37

the volumetric content of such fibers is in excess of 20 percent. In such cases, the matrix is not completely reinforced by the fibers. However, such compositions possess increased plasticity, and in combination with sufficiently high strength can prove useful for a number of structural elements.

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(3)

SO: JPRS 59277
14 June 73

RELATION BETWEEN THE DEPOSITION CONDITIONS AND THE VOLT-AMPERE CHARACTERISTICS OF EPITAXIAL p-n-JUNCTIONS

All-Semiconductors

[Article by L. B. Sladkov, V. V. Tuchkevich, B. S. Yavich; Novosibirsk, Pretsessy Rosta i Struktura Monokristallicheskikh Sloyev Poluprovodnikov -- Trudy Simpoziuma, Russian, Part 2, 1969, pp 15-21]

The epitaxial process successfully used to create silicon microelements encounters defined difficulties when developing powerful power devices the basis for which is the structurally and electrophysically uniform layer of semiconductor several tens of microns thick and from tens to hundreds of square millimeters in area. The publications pertaining to the given problem are only a few. Li [1] reported on the junctions obtained by the diffusion of gold into an epitaxial silicon film having a breakdown voltage of 100 volts in an area of 1 cm^2. Hize and Renyan [2] prepared an epitaxial controllable diode with a breakdown voltage of 500 volts in an area of 1 mm^2. In the paper by Howard and Jones [3], the creation of an epitaxial diode with a breakdown voltage of 3 kilovolts in an area of 0.2 cm^2 was indicated. According to the estimate of Lathrop[4], a thick (to 250 microns) epitaxial layer can be obtained in sections of the substrate not exceeding 13 mm in diameter. This is connected with statistical contamination -- silicon particles settling on the hot parts of the reactor -- getting on to the growing layer.

The epitaxial silicon films obtained from the gas phase form defects during the growth process (tripyramids and packing defects), which worsen the properties of the p-n-junctions, giving them soft characteristics and decreasing the breakdown voltage [5, 6]. In order to obtain a high-quality p-n-junction it is necessary that the substrate surface not have any chemical or mechanical defects.

In this paper a study was made of the deposition factors affecting the morphology and the resistance of the epitaxial layers of silicon obtained by reducing the silicon tetrachloride by hydrogen. The inverse volt ampere characteristics of the p-n-junctions are presented which were formed by the following procedures:

1) Deposition of the unalloyed n-type layer on the p-type substrate;

TUCHKEVICH, V.V.

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(3)

SO: JPRS 59279
14 JUNE 73

THERMODYNAMIC STUDY OF THE GROWTH RATE OF EPITAXIAL SILICON FROM $SiCl_4$

[Article by I. B. Sladkov, V. V. Tuchkevich; Novosibirsk, Protsessy Rosta i Struktura Monokristallicheskikh Slovev Poluprovodnikov -- Trudy Simpoziuma, Russian, Part 2, 1969, pp 7-14]

One of the most important parameters of the epitaxial process is the growth rate of the film. In the case of deposition on the crystallographic plane, the growth rate will be determined by several parameters: the concentration of the gas mixture, the deposition temperature and the gas flow rate. In order to grow films with given physical properties it is very important correctly to select these deposition parameters. In addition, the study of the kinetics of epitaxial growth permits us to obtain information about the possible deposition mechanism. In this paper an effort has been made to explain the experimental relations of the growth rate of epitaxial silicon films grown by reducing the silicon tetrachloride by hydrogen in the vertical reactor on the basis of the model of keeping the chemical equilibrium in the reaction zone.

Thermodynamic Analysis

The thermodynamic analysis of the process of epitaxial growth of silicon can be performed using the following assumptions.

1. The growth mechanism includes only two chemical reactions: the deposition reaction

$$SiCl_4 + 2H_2 \rightleftharpoons Si + 4HCl \qquad (1)$$

and the pickling reaction

$$SiCl_4 + Si \rightleftharpoons 2SiCl_2. \qquad (2)$$

The correctness of this assumption can be based in the following way. The principal byproducts of the chemical reactions of epitaxial growth are silicon dichloride and trichlorosilane. However, according to the published data [1, 2] for low concentrations of silicon tetrachloride in the initial gas mixture it is possible to neglect the formation of trichlorosilane.

TUCHKEVICH, V.V.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

JPRS 59208
6-73

TUCHKEVICH, V.V.

XII-4. SELECTIVE EPITAXIAL GROWTH OF SILICON IN THE SiH_4-H_2 SYSTEM

[Article by V. V. Tuchkevich, E. S. Yavich, Leningrad; Novosibirsk. III Simpozium po Protsessam Rosta i Sintezu Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 167]

This paper is devoted to the study of the conditions of selective epitaxy of silicon in the SiH_4-H_2 system. The silicon was deposited in the 1,150-1,250° C interval on a substrate of [111] orientation. The thermally grown layer of silicon dioxide 0.5-0.6 microns thick was used as the mask. The structures obtained were studied using an electron microscope, a scanning electron microscope and a metallographic microscope.

It was established that under the deposition conditions preventing the occurrence of silicon crystallites on the SiO_2 surface, noticeable variation of the mask configuration takes place. Therefore, a study was made of the effect of the high temperature treatment on the stability of the SiO_2 layers in silicon in an atmosphere of H_2, He and a mixture of H_2 and SiH_4. The data from a thermodynamic analysis of the Si-O-H system were used to explain the experimental results.

Further confirmation of the role of the migration of silicon crystallites along the surface of the mask during the selective epitaxy process are presented. The crystallographic peculiarities of the lattices obtained using masks with a hole size of 5-7 microns are discussed.

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JPRS 57208

6-73

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X-10. AUTOALLOYING OF EPITAXIAL LAYERS OF SILICON WITH BORON

[Article by V. V. Tuchkevich, N. M. Shmidt, R. S. Yavich, Leningrad; Novosibirsk, III Simpozium po Protsessam Rosta i Sintsza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 138]

A report was made on the autoalloying of epitaxial layers of silicon with boron in a number of papers; however, the transport mechanism of this admixture under the conditions of the epitaxial process has not been studied in practice.

The given paper is devoted to studying the causes of autoalloying when growing epitaxial layers from an unalloyed gas phase. In order to estimate the autoalloying level, the growth of the epitaxial layers was realized on high-resistance substrates placed in the interstitial layers with a boron content of $2 \cdot 10^{19}$ atoms/cm^3. This statement of the experiment permitted us to trace the variation of the concentration of the boron transported through the gas phase from the interstitial layer to the face of the substrate, excluding the phenomenon of autodiffusion. Growth was carried out from mixtures of SiH_4 with hydrogen or helium with a controlled moisture and oxygen content. The concentration and profile of the boron distribution with respect to depth of the epitaxial layer were measured by the C-V method. It was established that the accumulation of boron on the substrate surface takes place in the high-temperature annealing stage. The boron concentration depends on the annealing temperature and remains the same in the hydrogen and helium atmosphere. This fact indicates that the probable cause of autoalloying is the boron transport through the gas phase in the form of oxide.

TUCHKEVICH, V.V.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 029 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DISTRIBUTION OF ANTIMONY IN AUTO EPITAXIAL SILICON FILMS OBTAINED BY THE SILANE AND CHLORIDE METHODS -U-

AUTHOR-(04)-SLADKOV, I.B., TUCHKEVICH, V.V., SHMIDT, N.M., YAVICH, B.S.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA I TEKHN. POLUPROV., APR. 1970, 4, (4), 796-798

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--ANTIMONY, SILICON, SILANE, CHLORIDE, PHYSICAL DIFFUSION, EPITAXIAL GROWTH, METAL FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0148 STEP NO--UR/0449/70/004/004/0796/0798

CIRC ACCESSION NO--AP0129404

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

2/2 029 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129404

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AUTO EPITAXIAL SI FILMS WERE GROWN BY THE SILANE AND CHLORIDE METHODS AND THE RESULTANT IMPURITY (SB) DISTRIBUTION WAS MEASURED. IN FILMS OBTAINED BY THE CHLORIDE METHOD, IN PARTICULAR, THE SB DISTRIBUTION DIFFERED CONSIDERABLY FROM THAT CALCULATED FROM THE ORDINARY DIFFUSION EQUATION. IN THE CASE OF FILMS GROWN BY THE SILANE METHOD THEORY AND EXPERIMENT AGREED CLOSELY. THE DIFFERENCE MAY HAVE BEEN DUE TO EFFECTS TAKING PLACE ON THE BACK OF THE SUBSTRATE.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 037 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DISTRIBUTION OF IMPURITIES IN AUTO EPITAXIAL SILICON FILMS DOPED WITH BORON -U-

AUTHOR-(03)-SLADKOV, I.B., TUCHKEVICH, V.V., SHMIDT, N.M.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA I TEKHN. POLUPROV., APR. 1970, 4, (4), 798-800

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--BORON, SILICON, PHYSICAL DIFFUSION, ELECTRIC CONDUCTIVITY, IMPURITY LEVEL, EPITAXIAL GROWTH, SEMICONDUCTOR FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0147 STEP NO--UR/0449/70/004/004/0798/0800

CIRC ACCESSION NO--AP0129403

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

2/2 037 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129403

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROFILE OF IMPURITY DISTRIBUTION IN B DOPED AUTO EPITAXIAL SI FILMS WAS STUDIED BY MEASURING THE ELECTRICAL CONDUCTIVITY OF AN OBLIQUE SECTION, BY MEASURING THE ELECTRICAL CONDUCTIVITY OF THE SAMPLE AFTER REMOVING SUCCESSIVE THIN LAYERS, AND ALSO BY THE VOLTAGE-CAPACITY METHOD. THE SAME GENERAL PICTURE OF IMPURITY DISTRIBUTION WAS PRESENTED IN EACH CASE. A FALL IN B CONCENTRATION NEAR THE INTERFACE WITH THE SUBSTRATE WAS ATTRIBUTED TO DIFFUSION INTO THE LATTER FROM THE FILM.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 039 UNCLASSIFIED

TITLE--DIFFUSION OF BORON INTO EPITAXIAL SILICON -U- PROCESSING DATE--27NOV70

AUTHOR-(03)-SLADKOV, I.B., TUCHKEVICH, V.V., SHMIDT, N.M.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA I TEKHN. POLUPROV., APR. 1970, 4, (4), 793-796

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--HYDROGEN, CHLORIDE, PHYSICAL DIFFUSION, ELECTRIC PROPERTY, PHYSICAL DIFFUSION, SILICON, BORON, THERMAL EFFECT, EPITAXIAL GROWTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0150

STEP NO--UR/0449/70/004/004/0793/0796

CIRC ACCESSION NO--AP0129406

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

2/2 039 UNCLASSIFIED

CIRC ACCESSION NO--AP0129406 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFUSION OF B INTO EPITAXIAL LAYERS OF SI GROWN BY THE H REDUCTION OF SICL SUB4 ON P TYPE SI SUBSTRATES WAS STUDIED AT 1000-1300DEGREESC. THE DIFFUSION COEFF. INCREASED FROM 10 PRIME NEGATIVE13 TO 10 PRIME NEGATIVE10 CM PRIME2-SEC OVER THIS RANGE. THE GENERAL TENDENCY OF THE DIFFUSION PROCESS WAS CONFIRMED BY ELECTRICAL RESISTANCE MEASUREMENTS. THE RESULTS AGREED CLOSELY WITH EXISTING EXPERIMENTAL DATA, BOTH AS REGARDS THE ABS. DIFFUSION COEFF. AND AS REGARDS ITS TEMP. DEPENDENCE.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/3 042 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--INVESTIGATION OF THE FIELD OF TERRESTRIAL RADIOTHERMAL RADIATION, STUDY OF THE FIELD OF TERRESTRIAL RADIOTHERMAL RADIATION -U-

AUTHOR-(04)-BASHARINOV, A.YE., GURVICH, A.S., TUCHKOV, L.T., SHIFRIN, K.S.

COUNTRY OF INFO--USSR

SOURCE--INSTITUTE OF PHYSICS OF THE ATMOSPHERE AND INSTITUTE OF OCEANOLOGY; MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, ATMOSPHERIC SCIENCES

TOPIC TAGS--SUPERHIGH FREQUENCY, EARTH RADIATION, THERMAL RADIATION, ATMOSPHERIC RADIATION, RADIOMETER, ANTARCTIC GEOLOGY, EMISSIVITY, OCEAN SURFACE TEMPERATURE, RADIOSONDE, ICE, WATER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0362 STEP NO--UR/0362/70/006/004/0366/0380

CIRC ACCESSION NO--AP0114656

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

2/3 042 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0114656

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER GIVES THE RESULTS OF THEORETICAL INVESTIGATIONS OF AIRCRAFT AND SATELLITE MEASUREMENTS OF TERRESTRIAL RADIOTHERMAL RADIATION. THE FOLLOWING SUBJECTS ARE COVERED: SUPERHIGH FREQUENCY RADIATION OF THE EARTH'S SURFACE, SUPERHIGH FREQUENCY RADIATION OF THE ATMOSPHERE, GEOPHYSICAL INTERPRETATION OF THE SPECTRUM OF OUTGOING SUPERHIGH FREQUENCY RADIATION AND CHARACTERISTICS OF SUPERHIGH FREQUENCY RADIOMETRIC APPARATUS. IMPORTANT RESULTS FROM MEASUREMENTS ABOARD "KOSMOS-243" ARE GIVEN. THIS SATELLITE WAS USED IN MEASURING RADIOTHERMAL RADIATION OF THE EARTH AND ITS ATMOSPHERE AT LAMBDA 1,2,3,4, EQUALS 8.5, 3.4, 1.35 AND 0.8 CM. THE SATELLITE CARRIED FOUR RADIOMETERS WITH A RESPONSE OF 0.7DEGREESK AT LAMBDA SUB1, LAMBDA SUB2 AND ABOUT 2DEGREESK AT LAMBDA SUB3, LAMBDA SUB4. MEASUREMENTS AT 8.5 AND 3.4 CM WERE USED FOR THE MOST PART FOR DETERMINING THE PARAMETERS OF THE UNDERLYING SURFACE. SINCE THE WATER ICE BRIGHTNESS CONTRAST AT THESE WAVELENGTHS IS GREATER THAN 100DEGREESK, IT IS NOT DIFFICULT TO DETECT THE WATER ICE BOUNDARY AND DETERMINE ICE CONTINUITY. A FIGURE IN THE TEXT IS A MAP OF ICE FORMATIONS AROUND THE ANTARCTIC CONTINENT COMPILED FROM INTERPRETATION OF SPACE PHOTOGRAPHS. IT WAS FOUND THAT ICE CAN BERELIABLY DETECTED FROM MEASUREMENTS IN THE MICRO WAVE RANGE EVEN WHEN CLOUDS ARE PRESENT. THE QUITE UNIFORM EMISSIVITY OF THE ICE FREE OCEAN MAKES IT POSSIBLE TO DETERMINE ITS SURFACE TEMPERATURE. MEASUREMENTS AT 3.5 CM ARE OPTIMUM FOR THIS PURPOSE SINCE THERE THE DEPENDENCE OF BRIGHTNESS TEMPERATURE ON WATER TEMPERATURE IS MOST CLEARLY EXPRESSED.

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3/3 042 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0114656

ABSTRACT/EXTRACT--A FIGURE IN THE TEXT SHOWS A PROFILE OF SURFACE TEMPERATURE OF THE PACIFIC OCEAN CONSTRUCTED FROM MEASUREMENTS AT 8.5 CM; IT RUNS FROM THE BERING SEA TO THE ANTARCTIC OCEAN. SATELLITE DATA WERE USED IN DETERMINING THE MOISTURE CONTENT OF A COLUMN OF THE ATMOSPHERE. COMPARISON OF SATELLITE AND RADIOSONDE MEASUREMENTS OF MOISTURE CONTENT IN A COLUMN OF THE ATMOSPHERE SHOWS A GOOD AGREEMENT. DETECTION OF CLOUD COVER AND PRECIPITATION OVER THE OCEANS WAS BY MEASUREMENTS AT WAVELENGTHS 0.8 AND 3.4 CM. AT LEAST TEN GRADATIONS OF THE INTENSITY OF HYDROMETEORS WITH A WATER CONTENT FROM 0.03 TO 0.3 G-CM PRIME2 WERE DISTINGUISHABLE.

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USSR UDC: 621.396.69:621.316.8

TUCHKOVA, N. P.

"On Evaluating the Quality of Type MLT Resistors From Spectral Density"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 2 (19), pp 75-82 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V266)

Translation: The author discusses the problem of establishing a correlation between quality and noise for type MLT resistors. It is proposed that the coefficients α and A of the spectral density E_f of the noise voltage $E_f = AU_0^2R^2f^{-\alpha}$ be used as a criterion for evaluating quality. Experimentally found values of the coefficients A and α which characterize low reliability of the resistors are given. A description is given of the procedure for evaluating the quality of MLT carbon resistors from the nature of the spectral composition of their current noises. This procedure meets the requirements for noise characteristics of resistors in special equipment for reception of weak random irregular signals. Resumé.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR UDC: 681.3

CHECHETKIN, N. I., ILARIONOVA, R. M., TUDER, G. M.

"On a Method of Diagnosing an Arithmetic Device"

V sb. Konstruir. i vnedreniye novykh sredstv vychisl. tekhn. vyp. 2 (Design and Introduction of New Computer Technology Facilities. No 2), Kiev, 1970, pp 162-166 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V556)

[No abstract]

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC: 621.396.677

TUDOROVSKIY, A. A. and KRUGLOV, A. A.

"Analyzing the Accuracy of Antenna Rotation Angle Translation Along a Radio Line"

Tr. Leningr. in-ta tochnoy mekh. i optiki (Transactions of the Leningrad Institute of Precision Mechanics and Optics) 1970, No. 69, pp 25-27 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3B86)

Translation: A method is considered for translating the rotation angle of an antenna by transmission over a radio line of two voltages varying in accordance with the sine and cosine of the angle. A quantitative connection is established between the errors in the translation of the sine and cosine voltages and the errors in the transmitted angle. Possible sources of error in the transmission of these voltages are indicated. One illustration, one table, bibliography of two. V. S.

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USSR

UDC 621.373.531

TUDOROVSKIY, A. A., NACHKEBIYA, B. G.

"Some Problems of Analyzing Transient Processes in a Thyristor Pulse Shaping Circuit"

Tr. Leningr. in-ta tochnoy mekh. i optiki (Works of Leningrad Institute of Precision Mechanics and Optics), 1970, vyp. 69, pp 72-76 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G205)

Translation: The transient processes on pulse fronts and in the apex shaping section are investigated. The results obtained can be used to calculate the shaping circuit.

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USSR UDC 621.317.7

TUDOROVSKIY, A. A., IVANOV, I. T.

"An Ionospheric Radio Wave Direction Finding Method"

Tr. Leningr. in-ta tochnoy mekh. i optiki (Works of the Leningrad Institute of Precision Mechanics and Optics), 1970, vyp. 69, pp 3-11 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A235)

Translation: A method of constructing a two-channel radio direction finder free of polarization errors is discussed. The antenna comprises three crossed loops, two of which are mutually perpendicular, stationary and oriented with respect to the points of the compass, and the third is horizontal and coupled electrically to the search coil of a goniometer. A table and formulas are presented for calculating the azimuth in the direction of the radio source. There are 3 illustrations, 1 table and a 1-entry bibliography.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR UDC 621.396.6.002.6(06)

TUDOROVSKIY, A. A. (Editor)

Radiotekhnicheskiye i radioelektronnyye pribory i ustroystva.(Tr. Leningr. in-ta tochnoy mekh. i optiki, vyp. 69) (Radiotechnical and Radio Electronic Instruments and Devices (Works of the Leningrad Institute of Precision Mechanics and Optics, vyp. 69)), Leningrad, 1970, 129 pp, ill., 65 k (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A19K)

Translation: The thematic area of the articles of this collection is basically connected with the general problem of building automatic equipment for measuring the phase-amplitude distribution of the electromagnetic field in the near zone of microwave antennas. A number of papers are devoted to the problems of planning and designing microwave antenna structures, parts and assemblies and also application of radiotechnical methods for measuring nonelectrical quantities. The published data are of interest to specialists dealing with the design of radio equipment for various purposes and also for students in the advanced courses of the radio departments.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

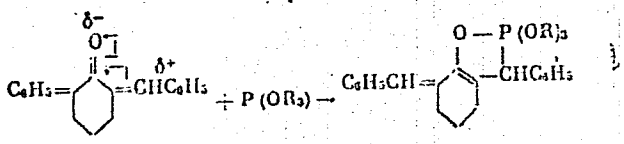
USSR UDC 661.718.1

ARBUZOV, B. A., Academician, ZOROASTROVA, V. M., TUDRIN, G. A., and FUZHENKOVA, A. V., Chemical Institute imeni A. M. Butlerov, Kazan' State University imeni V. I. Ul'yanov-Lenin

"Reaction of 2,6-Dibenzylidenecyclohexanone With Trialkyl Phosphites"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 4, 1971, pp 847-849

Abstract: Trialkyl phosphites react with 2,6-dibenzylidenecyclohexanone during heating in a sealed ampoule (100°, 4-10 hours) to give 1:1 adducts of phosphorane structure (Ia) and (Ib):



Ia ($R=CH_3$), Ib ($R=C_2H_5$). The structure of the resultant phosphoranes was confirmed by IR and NMR spectra and study of their chemical properties. Phosphorane (Ia) is hydrolyzed in benzene with an equimolar quantity of water to give the dimethyl ester of 2-(6-benzylidenecyclohexanone)-benzylphos-

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

ARBUZOV, B. A., Doklady Akademii Nauk SSSR, Vol 200, No 4, 1971, pp 847-849

phonic acid. Phosphorane (Ib) is readily saponified in an ether solution with atmospheric moisture.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR UDC 542.91:547.572:547.1'118

ARBUZOV, B. A., ZOROASTROVA, B. M., TUDRIY, G. A., FUZHENKOVA, A. V.

"Interaction of Dibenzal Acetone with Trimethyl Phosphite and Dimethyl Phosphorus Acid"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, 1973, pp 2581-2585

Abstract: A study was made of the interaction of dibenzal acetone with trialkyl phosphites. Trimethyl phosphite reacts with dibenzal acetone with the formation of 2,2,-trimethoxy-3phenyl-5 5-(β-phenyl)vinyl-1,2-oxaphospholene-4(II). When (II) is washed with water, the phosphorane ring breaks at the P-O bond with the formation of two keto phosphonates, probably S-cis- and S-transconformers. Phosphorane (II) reacts with dibenzal acetone by the diene synthesis reaction. A thermogram is presented for a mixture of dibenzal acetone with $(CH_3O)_3P$ and the reaction of dibenzal acetone with $(CH_3O)_3P$ in the presence of CH_3COOH.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR UDC 542.91:547.1'118

ARBUZOV, B. A., ZOROASTROVA, V. M., TUDRIY, G. A., GUZHENKOVA, A. V., Chemical Institute imeni A. M. Butlarov of Kazan State University imeni V. I. Ul'yanov-Lenin

"Interaction of 2-6-dibenzylidene-cyclohexanone with trialkylphosphite and dialkylphosphorous Acids"

Moscow, Izvestiya Akademii Nauk SSR -- Seriya Khimicheskaya, No 11, 1972, pp 2545-2549

Abstract: The interaction of tirmethyl and triethylphosphite with 2,6--dibenzylidenecyclohexanone was found to lead to the formation of cyclic phosphorane (Ia), (Ib). The structure of the phosphoranes was checked by the nuclear magnetic resonance and infrared spectral data. The properties of these spectra are discussed. The interaction of 2,6-dialkylphosphites forms dialkyl esters of 2-(6-benzylidenecyclohexanone)benzylphosphonic acid and also cyclic esters depending on the temperature. The experimental procedures and results are given for the interaction of 2,6-benzylidenecyclohexanone with trialkylphosphites, the saponification of the phosphoranes, the interactions of phosphorane (Ia) with acetic anhydride, the interaction of 2,6-benzylidenecyclohexanone with trialkylphosphites in the presence of 1/2

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ARBUZOV, B. A., et al., Izvestiya Akademii Nauk SSR - Seriya Khimicheskaya, No 11, 1972, pp 2545-2549

$(CH_3CO)_2O$, the interaction of phosphorane (Ia) with CH_3COOH, the interaction of 2,6-dibenzylidenecyclohexanone with trialkylphosphites in the presence of CH_3COOOH, the interaction of 2,6-dibenzylidenecyclohexanone with $(CH_3O)_2POH$, 2,6-dibenzylidenecyclohexanone with $(C_5H_2O)_2POH$, 2,6-dibenzylidenecyclohexanone with $P(OCH_3)_3$ in the presence of methanol, and thermographic analysis of the enol derivative of phosphorane (Ib).

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USSR UDC: 542.91+661.718.1

ARBUZOV, B. A., ZOROASTROVA, V. M., and TUDRIY, G. A., Scientific Research Institute of Chemistry imeni A. M. Butlerov, Kazan, Kazan' State University imeni V. I. Ul'Yanov-Lenin

"Effect of Dialkyl Phosphorous Acids on 9-Chloro-10-anthracenealdehyde, 9-Anthracenealdehyde, and 9-Butylmercapto-10-Anthracenealdehyde"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 70, pp 90-95

Abstract: Three series of dialkyl anthranyl-alpha-hydroxyphosphonates were prepared by heating 9-chloro-10-anthracenealdehyde(I), 9-anthracenealdehyde, or 9-butylmercapto-10-anthracenealdehyde with dialkyl phosphorous acids (RO) 2OPH (R=Me, Et, iso-Pr, iso-Bu) in C_6H_6 in the presence of a catalyst (sodium alcoholate or triethylamine). Yields of the products varied from 60-100% in the presence of a sodium alcoholate. A low yield of diethyl 9-chloroanthranyl-alpha-hydroxy-methylphosphonate was obtained in the presence of Et_3N. It was shown that I does not react with (MeO) 2OPH in the absence of a catalyst, even under extreme conditions (at 200-300° for 15hr.). All the products but one were solids with m.p. in the 80-177°C range. An attempt to obtain acids from prepared esters by hydrolysis with diluted HC_1 failed.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR UDC 669.15.018.8

GOLUBEVA, L. S., TUFANOV, D. G., SHCHEGOLEVA, R. P., and RUCH'YEVA, N. A.

"Corrosion Testing of Cermet Stainless Steels"

Sb. tr. Tsentr. n.-i. in-ta chern. metallurgii (Collection of Works of the Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp 72, pp 128-135 (from RZh-Metallurgiya, No 6, Jun 70, Abstract No 6 I636)

Translation: Kh18N15, Kh22N15, Kh23N18, Kh23N28, Kh30 and 1Kh17N2 cermet deformed stainless steels as regards corrosion resistance in boiling nitric acid (25 and 56-58%), are not inferior to steels of the same composition, produced by melting and forming. 1Kh17N2 deformed martensitic-ferritic steel with a two-phase structure ($\alpha + \gamma$), in comparison with Kh18N15, Kh23N28, etc. austenitic steels and Kh30 ferritic steel, which possess a single phase structure (γ or α), has a considerably lower corrosion resistance. The porosity has a negative effect on the corrosion resistance. Kh18N15 steel's corrosion rate in 25% boiling HNO_3 increases twofold for specimens with 4.4% pores, and 2% for specimens with 2.7% pores, in comparison with compact steel. Such a drastic difference is determined by the change in the nature of porosity -- in specimens with 2.7% pores, only closed porosity is observed. Structural members from sintered stainless steel, designed for work in aggressive media, should have a porosity $\leq$ 3%

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR UDC 621.376.223

PETUKHOV, A.A., POPOVA, L.A., TUFLIN, E.K.

"Switch Parameters Of Integrated Interruptor"

V sb. Elektronnaya tekhnika v avtomatika (Electronics Techniques In Automation--Collection Of Works), Moscow, Izd-vo "Sovetskaya Radio," No 2, 1971, pp 59-64

Abstract: The results are presented of a statistical study of the parameters of the IP-1 silicon integrated interruptor [preryvatel'] which is used as a precision analogue switch in various automatic and telemechanic devices for commutation of voltages up to 6 v. The principal electrical circuit and the numbering of the base lead outs of the IP-1 are presented. An estimated is made of the errors possible during commutation. 4 fig. 2 ref.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR UDC 534.222.2

TUGAZAKOV, R. YA.

"Interaction of a Shock Wave With a Wedge Moving With Supersonic Velocity"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), 1971, Vol. 2, No. 2, pp 34-39 (from RZh-Mekhanika, No 12, Dec 71, Abstract No 12B300)

Translation: The problem of the incidence of a shock wave on a wedge of finite thickness moving with supersonic velocity is discussed. The problem is automodeling due to the absence of characteristic dimensions. At certain angles of incidence, when Mach reflection is not achieved, the parameters of the gas are calculated in the region of wave interaction. The calculations were conducted in conically supersonic regions by the characteristics method. The flow pattern was analyzed for the case when the pressures are the same in the leading compression shock and in the incident shock wave. Resume.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--GEOCHRONOLOGY OF PRECAMBRIAN FORMATIONS IN THE URALS -U-

AUTHOR-(04)-TUGARINOV, A.I., BIBIKOVA, YE.V., KRASNOBAYEV, A.A., MAKAROV, V.A.

COUNTRY OF INFO--USSR

SOURCE--GEOKHIMIYA 1970, (4), 501-9

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOCHRONOLOGY, PRECAMBRIAN TIME, ABSOLUTE AGE, MAGMA, METAMORPHIC ROCK, ZIRCON, EARTH CRUST AGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0136 STEP NO--UR/0007/70/000/004/0501 .509

CIRC ACCESSION NO--AP0119132

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

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CIRC ACCESSION NO--AP0119132 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABS. AGES OF VARIOUS PRECAMBRIAN MAGNETIC AND METAMORPHIC ROCKS WERE DETD. FROM ZIRCONS BY THE ISOTOPIC METHOD. THE AGE DETNS. INDICATED THE PRESENCE OF 2 STAGES OF EFFUSIVE ROCK FORMATION IN THE BASHKIR ANTICLINORIUM (SOURTHERN URALS). THE ANCIENT TARATASHSK INTRUSIONS, WHICH TERMINATED THE LOWER PROTEROZOIC CYCLE AND WERE ACCOMPANIED BY INTENSE REGIONAL METAMORPHISM, HAVE ABS. AGE OF 2000-200 MILLION YR. THE BERDYANSHSK PLUTON (1430 MILLION YR OLD) AND GUBENSK AND RYABINOVSK INTRUSIONS (1350 MILLION YR) BELONG TO SUCCESSIVE INTRUSIVE PHASE. THIS PHASE COINCIDED WITH LARGE INTERRUPTION IN SEDIMENT ACCUMULATION AND WAS DENOTED BY DISCONFORMITY BETWEEN THE BURZYANSK AND YURMATINSK SERIES INDICATING AN INTENSE DEVELOPMENT IN URALS OF THE STRATA HAVING A VERY LIMITED DISTRIBUTION IN THE EARTH. FACILITY: V. I. VERNADSKII INST. GEOCHEM. ANAL. CHEM., MOSCOW, USSR.

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USSR

GRYAZNOV, B. A., GORODNETSKIY, S. S., and TUGARINOV, A. S., Institute of Strength Problems, Ukrainian SSR Academy of Sciences (Kiev)

UDC 620.178.5

"Investigation of the Damageability of the Turbine Blades of Gas-Turbine Engines After Exhaustive Operational Wear"

Kiev, Problemy Prochnosti, No 11, Nov 73, pp 65-67

Abstract: Results are presented of the investigation of new working blades of a new turbine engine and of blades with various degrees of wear under standard operating conditions. A comparative evaluation was made of the injurious action of operational wear by means of determination of the "secondary" fatigue curves of blades that had been in operation prior to testing, and an investigation was made of changes of the physicomechanical properties of the material of blades made from alloy EI437B. An experimental evaluation of the fatigue characteristics of blades with operational wear of up to 4000 hours was conducted; regression equations of the fatigue curves were computed, and a limit surface of the carrying capacity of blades with operational wear was plotted. It was established that under standard operating conditions the finite fatigue limit of the blades on the basis of 10^7 cycles decreases over the investigated period on the average by 13-15%, and that the parameters of the fatigue model $\sigma^m N = C$ undergo change. 4 figures. 2 tables. 5 references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC: 621.317.089.68:621.396.62

VASIL'YEV, N. M., TRET'YAKOV, L. N., TUGARINOV, I. M., MOROZ, A. M.

"Equipment for Receiving the Carrier Frequencies of Centimeter Wavelength Radio Stations"

Dokl. Nauchno-tekhn. seminara "Metrologiya v radioelektronike". Tezisy. Ch. 2 (Reports of the Scientific and Technical Conference on Metrology in Radio Electronics. Summaries. Part 2), Moscow, 1970, pp 92-101 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A206)

Translation: The paper describes equipment developed at the All-Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements for receiving the carrier frequencies of centimeter wavelength radio stations and comparing them with the frequency of a secondary standard. Block diagrams are given for the systems of reception and comparison, the circuits of the mixer and multipliers, and also the results of an investigation of the phase stability of the receivers and synthesizers. The results are analyzed. E. L.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 533.6.011

TUGAZAKOV, R. Ya., FONAREV, A. S., Moscow

"The Initial Stage of the Collision of Explosive Waves"

Mekhanika Zhidkosti i Gaza, No 5, 1971, pp 41-48.

Abstract: The problem of the collision of two explosion waves with variable gas parameters beyond the leading edge of the wave and reflection of the wave from flat, cylindrical and spherical barriers is studied. The dependences of gas parameters behing the reflected wave in the initial stage are produced. The reflection of an explosive wave from a nonmoving barrier is studied in detail. The problem of the collision of two shockwaves with constant parameters behind the leading edge is solved both in the symmetrical case (reflection from a nonmoving wall) and in the case of waves of different amplitude using a system of algebraic relationships for the compression jumps. The initial stage of the collision of waves with arbitrary distribution of parameters behind the front is studied.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC: 681.327.2

GORYACHEVA, L. N., KIREYEVA, V. F., TUGBAYEV, B. A.

"A Device for Tag Bit Data Retrieval in a Random Access Memory"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 46, Dec 73, Author's Certificate No 407315, Division G, filed 16 Nov 71, published 21 Nov 73, p 160

Translation: This Author's Certificate introduces: 1. A device for tag bit data retrieval in a random access memory. The device contains an n-place input register and (k + m)-place and (n - m + k)-place number registers (where m < k < n) which are connected to corresponding accumulators. These accumulators are connected to (m + 1)-place address registers which are connected, in turn, to an n-place output register. The device also contains an analysis module connected to the input register and to the number registers. Also included is a control module. As a distinguishing feature of the patent, the device is simplified and speed is increased by including an m-place free cell register connected to the digital places from the first to the m-th and from the (k + 1)-th to the (m + k)-th digits of the (m + k)-place number register, and also to the digital places from the first to the m-th

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GORYACHEVA, L. N. et al., USSR Author's Certificate No 407315

and from the (n - k + 1)-th to the (n - k + m)-th digits in the (n - k + m)-place number register. The digital places of the input register from the first to the k-th digit are connected to the like places of the (m + k)-place number register, the digital places of the input register from the third to the (m + r)-th digit are connected to the digital places from the second to the (m + 1)-th digit of the address registers, and the digital places of the input register from the (k + 1)-th to the n-th digit are connected to the digital places from the first to the (n - k)-th digit in the (n - k + m)--place number register. 2. A modification of this device distinguished by the fact that the analysis module consists of three coincidence gates. The inputs of one of these are connected to the digital places from the (3 + m)-th to the k-th digit of the input register and the (m + k)-place number register. The inputs of another coincidence gate are connected to the digital places from the first to the m-th digit and from the (m + 1)-th to the 2m-th digit in both number registers. The inputs of the third coincidence gate are connected to the digital places from the (k + 1)-th to the (k + m)-th digit in the (n + k)-place number register and to all digital places of the free cell register. The outputs of all coincidence gates are connected to the control module.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR UDC 620.181.4:536.4

KARPINOS, D. M., TUGHINSKIY, L. I., MIROSHNIKOVA, T. K., and VISHNYAKOV, L. R., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Calculation of the Thermal Expansion of Reinforced Metals"

Kiev, Poroshkovaya Metallurgiya, No 1, Jan 74, pp 80-84

Abstract: A method was proposed for calculating the thermal expansion of composites, reinforced by unidirectionally oriented fibers, in which one or both of the materials in the composite possesses plastic rather than elastic properties. Tungsten wire of alloy KhN60V (VZh98) was used as the experimental material where the reinforcing fiber used was tungsten wire VA with its content in VZh98 varied. Tests showed that pure tungsten has a very low coefficient of thermal expansion and alloy VZh98 has a relatively high coefficient between 300 and 1300° C and increases with temperature. When reinforced with VA fibers, the thermal expansion is not as high as for the unreinforced alloy and starts decreasing between 700 and 900° C, depending on the VA content. The reason for this that at comparatively low temperatures the matrix has a yield strength high enough to cause substantial tensile stresses in the tungsten

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

KARPINOS, D. M., et al., Poroshkovaya Metallurgiya, No 1, Jan 74, pp 80-84

fibers and, consequently, to cause additional temperature deformation in them. At high temperatures the matrix assimilates an ideal plastic body, its yield strength remains small and, therefore, the coefficient of thermal expansion of the composite is basically determined by the thermal expansion of the fibers. Thus, the matrix (VZh98) coefficient is greater than tungsten (fibers) and at low temperatures the coefficient increases, but as temperature rises the pure matrix becomes plastic, and the coefficient is governed then by the fibers, and the overall coefficient diminishes. Three figures, one table, five bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--TWO PHOTON DISSOCIATION OF MOLECULES -U-

AUTHOR-(02)-BUNKIN, F.V., TUGOV, I.I.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 6, PP 1987-1994

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHOTON, GREEN FUNCTION, PARTICLE CROSS SECTION, PHOTOEFFECT, MOLECULAR PHYSICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2230 STEP NO--UR/0056/70/058/006/1987/1994

CIRC ACCESSION NO--AP0125808

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

2/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125808

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM OF TWO QUANTUM PHOTODISSOCIATION OF DIATOMIC HETERONUCLEAR MOLECULES IS CONSIDERED. A METHOD IS PROPOSED FOR TAKING INTO ACCOUNT THE COMPLETE VIBRATION ROTATIONAL SPECTRUM OF SUCH MOLECULES FOR ARBITRARY TWO PHOTON TRANSITIONS. THE METHOD IS BASED ON APPLICATION OF THE EXPLICIT EXPRESSION OF THE GREEN FUNCTION FOR THE INTERNUCLEAR POTENTIAL. THE NUCLEAR POTENTIAL ENERGY CURVE IS APPROXIMATED BY THE KRATZER POTENTIAL V(R) EQUALS A MAGNITUDE OF R PRIME NEGATIVE2 MINUS B R PRIME NEGATIVE1. AN ANALYTIC EXPRESSION IS DERIVED FOR THE CROSS SECTION FOR TWO PHOTON DISSOCIATION OCCURRING WITHOUT CHANGE OF THE GROUND ELECTRON TERM; THE EXPRESSION IS VALID FOR ARBITRARY VALUES OF THE VIBRATIONAL AND ROTATIONAL QUANTUM NUMBERS OF THE INITIAL STATE. FACILITY: FIZICHESKIY INSTITUT IM. P. N. LEBEDEVA AN SSSR.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

Pesticides

USSR UDC 631.850.13

IVANOV, R. N., PAVLOVA, A. I., TUGOVA, N. N., and SATYBALDYYEV, T., Institute of Chemistry, Academy of Sciences Uzbek SSR

"The Effect of the Moisture Content of Ammophos Granules on Their Strength"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, Vol 17, No 3, 1973, pp 70-72

Abstract: The mechanical strength of ammophos granules with a diameter of 1.5-6.0 mm in relation to their moisture content was investigated. The ammophos granules were produced by the liquified solids method. The moisture content varied in the 0,5-7.0% range. The strength of the granules (their resistance to deformation) decreased with their size because of decreasing density and also with the moisture content. Mathematical formulas that describe the relations established were derived. The work was carried out under the direction of M. N. Nabiyev, Member of the Academy of Sciences Uzbek SSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--FUNCTIONAL INHIBITION OF THE ADRENAL GLANDS BY ACYTILATED DERIVATIVE OF THE ADRENOCORTICOTROPHIC HORMONE -U-

AUTHOR--DILMAN, V.M., PROKUDINA, YE.A., BULOVSKAYA, L.N., KONSTANTINOV, V.L., TUGUNOV, S.S.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN'EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 3, PP 69-71

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INHIBITION, ADRENAL GLAND, ACTH, HYDROCORTISONE, GUINEA PIG, RAT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0842 STEP NO--UR/0219/70/069/003/0069/0071

CIRC ACCESSION NO--AP0052276

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

2/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0052276

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACETYLATED DERIVATIVE OF ACTH IN WHOM ALL FREE AMINOGROUPS ARE ACETYLATED ARE ENDOWED WITH THE CAPACITY TO FUNCTIONAL INHIBITION OF THE ADRENAL GLANDS REDUCE THE LEVEL OF HYDROCORTISONE IN THE PERIPHERAL BLOOD IN INTACT GUINEA PIGS ON AN AVERAGE BY 37PERCENT FOUR HOURS AFTER INTRODUCTION AND THE LEVEL OF CORTICOSTERONE IN RATS BY 29PERCENT UPON ADMINISTRATION OF THE DERIVATIVE FOR A COURSE OF SEVEN DAYS.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR UDC: 669.017:537

YURKOV, V. A., YEPISHIN, I. G., TUGUSHEV, S. YU., and SOSHNIKOV, V. A., Penza Polytechnic Institute

"Physical Properties of SnSb Single Crystals"

Sverdlovsk, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 108-112

Abstract: The results of an experimental investigation of certain physical properties of SnSb crystals are presented. The procedure for producing samples is described in detail. Density, microhardness, electric conductivity, and thermoelectric force were measured. Density was determined by hydrostatic weighing at room temperature. The average density of SnSb plates was 6.81 g/cm^3. The microhardness was measured with a PMT-3 instrument for two indentor positions, one normal and one parallel to the surface. The results are presented graphically. The electric resistance was measured by the usual compensation method, with currents parallel and normal to the cleavage surface. The thermoelectric properties were determined by clamping the sample between two copper blocks.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

YURKOV, V. A., et al, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 108-112

The temperature of one was maintained at 16°C, while that of the other was varied between 16 and 200°C. The ΔT was measured by a thermocouple with $\pm$ 0.5° accuracy. The thermoelectric force was measured for two directions of the temperature gradient, one parallel and the other normal to the cleavage surface. The results show that the thermoelectric properties of single crystals are practically isotropic. Orig. art. has: 5 figures and 1 formula.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 019 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--PHYSICAL PROPERTIES OF TIN ANTIMONIDE SINGLE CRYSTALS -U-

AUTHOR-(04)-YURKOV, V.A., YEPISHIN, I.G., TUGUSHEV, S.YR., SOSHNIKOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1), 108-12

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTROMOTIVE FORCE, SINGLE CRYSTAL, TIN COMPOUND, ANTIMONIDE, HARDNESS, ELECTRICAL CONDUCTIVITY

CONTROL MARKINGS--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0706 STEP NO--UR/0126/70/029/001/0108/0112

CIRC ACCESSION NO--AP0105679

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

2/2 C19 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0105679

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS OF THE D., MICROHARDNESS, ELEC. COND., AND THERMAL EMF. MEASUREMENTS OF SNSB SINGLE CRYSTALS ARE PRESENTED. THE AV. D. OF THESE CRYSTALS, DETD. BY THE HYDROSTATIC WEIGHING METHOD, IS 6.81 G-CM PRIME3, WHICH IS SOMEWHERE BETWEEN THE D. OF SN AND THAT OF SB. THE MICROHARDNESS WAS MEASURED ON FRESHLY CLEAVED SINGLE CRYSTAL PLATELETS. THE MEASUREMENTS WERE TAKEN WITH THE INDENTOR PARALLEL AND PERPENDICULAR TO THE CLEAVAGE PLANE OF THE SAMPLES. VALUES RANGING FROM 130-140 AND 80-90 KG-MM PRIME2 WERE OBTAINED. AT 60-G LOADS, THE MICROHARDNESS VALUES IN BOTH ORIENTATIONS WERE ABOUT THE SAME. ELEC. RESISTIVITY WAS MEASURED BY THE CONVENTIONAL COMPENSATION METHOD AT 20-200DEGREES. THE RESISTIVITY OF ALL THE SAMPLES HAD A TYPICALLY METALLIC CHARACTER. THE RESISTIVITY PARALLEL TO THE CLEAVAGE PLANE AT 20DEGREES WAS 26.6 TIMES 10 PRIME NEGATIVE6 OHM-CM; AT THE SAME TEMP. THE RESISTIVITY PERPENDICULAR TO THE CLEAVAGE PLANE WAS 65.6 TIMES 10 PRIME NEGATIVE6 OHM-CM. THIS MEANS THAT THE RESISTIVITY PERPENDICULAR TO THE CLEAVAGE PLANE IS BY 2.4 TIMES LARGER THAN THAT PARALLEL TO THE CLEAVAGE PLANE. WITH INCREASING TEMP. THE RESISTIVITY ANISOTROPHY SOMEWHAT DECREASES. THE RESISTIVITY OF POLYCRYST. SAMPLES HAD AN INTERMEDIARY VALUE, AND WAS 36.8 TIMES 10 PRIME NEGATIVE6 OHM-CM AT 20DEGREES. IT WAS DIFFICULT TO OBTAIN ACCURATE THERMAL EMF VALUES. AND THE RESULTS OBTAINED VARIED BY 10-15PERCENT. IT IS CONCLUDED THAT AT CONSIDERABLE ANISOTROPY IN THE RESISTIVITY (IS GREATER THAN 200PERCENT), THE THERMOELEC. PROPERTIES OF THE SINGLE CRYSTALS ARE PRACTICALLY ISOTROPIC.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

Acc. Nr: AP0044019 Ref. Code: UR 0240

PRIMARY SOURCE: Gigiyena i Sanitariya, 1970, Nr 2, pp 22-25

SANITARY-BACTERIOLOGICAL EFFECT OF DECONTAMINATING SEWAGE SEDIMENTS IN AEROBIC STABILIZATION

L. A. Sergunina, N. Yu. Tugusheva, V. V. Chuprakova

The results of sanitary-bacteriological investigations into the method of aerobic stabilization of sewage sediments under laboratory and pilot field conditions are reported. With aerobic treatment the number of E. coli is shown to decrease by 80—99.9% and the saprophytic microflora content — by 50—80%, depending upon the type of the sediments to be processed. Physico-chemical conditions of the environment (pH and Eh) were determined to ascertain the cause accounting for destruction of microorganisms. The pH and Eh values were within limits allowing for vital activity of the microorganisms under study. Exhaustion of the substrate and environmental cumulation of metabolites were, apparently, the main causative factors responsible for the destruction of microorganisms.

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REEL/FRAME 19770456

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 029 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--CORRELATION OF PHYSICAL BEHAVIOR OF POLYIMIDES WITH THEIR STRUCTURE -U-

AUTHOR-(05)-RUDAKOV, A.P., BESSONOV, M.I., TUICHYEV, SH., KOTON, M.M., FLORINSKIY, F.S.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3) 641-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYMIDE RESIN, POLYMER STRUCTURE, IMIDE, ELASTICITY, MOLECULAR INTERACTION, CHEMICAL BONDING, CONJUGATED POLYMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0326 STEP NO--UR/0459/70/012/003/0641/0648

CIRC ACCESSION NO--AP0111520

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

2/2 029 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111520

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DISCUSSION WITH 11 REFS. OF THE PROPERTY STRUCTURE RELATIONS OF I, WHERE R AND R PRIME ARE TETRAVALENT AND DIVALENT AROMATIC RINGS RESP. OR CONSIST OF SUCH AROMATIC RINGS SEPD. BY O, S, SO SUB2, OR CH SUB2 BRIDGES. THE IMIDE RING, WHICH INTERRUPTS THE CONJUGATION OF THE POLYMER CHAIN ACTS AS A "HINGE" AND INFLUENCES THE ELASTICITY OF I. THE TEMPS. OF I PHASE TRANSITION POINTS DEPEND NOT ONLY ON THE CHAIN ELASTICITY, BUT ALSO ON THE INTERMOL. INTERACTIONS, IN PARTICULAR ON THE BONDING BETWEEN CO GROUPS OF THE IMIDE RINGS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 023

UNCLASSIFIED

TITLE--ANTICOMPLEMENTARY ACTIVITY OF GAMMA AND POLYGLOBULIN PREPARATIONS -U-

PROCESSING DATE--02OCT70

AUTHOR-(02)-TUKACHINSKIY, S.YE., BADINA, V.M.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 3, PP 95-98

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GAMMA GLOBULIN, IMMUNOLOGY

CONTROL MARKINGS--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1516

STEP NO--UR/0016/70/000/003/0095/0098

CIRC ACCESSION NO--AP0106272

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

2/2 023 UNCLASSIFIED

CIRC ACCESSION NO--AP0106272 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED THE ANTICOMPLEMENTARY ACTIVITY OF GAMMA GLOBULIN AND OF COMBINED IMMUNOGLOBULIN PREPARATION, SERUM POLYGLOBULIN, CONTAINING TRANSFERRIN, IN RELATION TO THE PERIODS OF PRESERVATION. THE AMOUNT OF GAMMA GLOBULIN REQUIRED FOR INACTIVATION OF TWO WORKING DOSES OF THE COMPLEMENT WAS 0.04 MG, AND OF POLYGLOBULIN, 5 TO 60 MG, I.E. ANTICOMPLEMENTARY ACTIVITY OF GAMMA GLOBULIN WAS 60 TO 125 TIMES GREATER THAN SUCH OF SERUM POLYGLOBULIN. ANTOCOMPLIMENTARY ACTIVITY OF GAMMA GLOBULIN DURING THE FIRST 3 YEARS OF STORAGE CHANGES BUT LITTLE; LATER IT FALLED CONSIDERABLY. NO ALTERATION OF ANTICOMPLEMENTARY ACTIVITY WERE NOTED IN STORAGE OF SERUM POLYGLOBULIN.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 8.74

MASHKINA, R. V., PRACHENKO, V. D., SERGIYENKO, I. V., SEMIK, V. P., TUKALEVSKAYA, N. I.

"Automated Information Servicing and Data Processing Systems for a Library of Algorithms and Programs. Part II"

Avtomatizirovannaya sistema informatsionnogo obsluzhivaniya i obrabotki dannykh fonda algoritmov i programm. Ch II (cf. English above), Kiev, Cybernetics Institute of the Ukrainian SSR Academy of Sciences, 1972, 208 pp, ill., 60 k. (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V473 K)

Translation: The allocation of the system software on the information carriers and the software for the Dnepr-2 computer are presented.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 8.74

MASHKINA, R. V., PRACHENKO, V. D., SERGIYENKO, I. V., SEMIK, V. P., TUKALEVSKAYA, N. I.

"Automated Information Servicing and Data Processing Systems for a Library of Algorithms and Programs. Part I"

Avtomatizirovannaya sistema informatsionnogo obsluzhivaniya i obrabotki dannykh fonda algoritmov i programm. Ch. I (cf. English above), Kiev, Cybernetics Institute of the Ukrainian SSR Academy of Sciences, 1972, 204 pp, ill., 60 k. (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V472 K)

Translation: An automated information servicing and data processing system for an algorithm and program library on a computer, its program and information servicing and also the operating procedures for this system are described. In the first chapter the basic problems of developing the system, the steps in its creation and its operating conditions are discussed, and one method of combining the principles of universality and specialization providing the basis for the construction of the system is described. In the second chapter there is a description of the shape of the input and output documents of the system and the structure of the user-system communication language. The third chapter is devoted to a discussion of means of describing the system: the language of the data flow diagrams, the block-system language and the operating address

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

MASHKINA, R. V., et al., Avtomatizirovannaya sistema informatsionnogo obsluzhivaniya i obrabotki dannykh fonda algoritmov i programm. Ch. I, Kiev, Cybernetics Institute of the Ukrainian SSR Academy of Sciences, 1972, 204 pp, ill., 60 k.

language for description of the system procedures. In the fourth chapter the program library for the system and the structure of its information files are described by the means discussed in the third chapter. The fifth chapter contains the problems of introduction and maintenance of the system.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 012 UNCLASSIFIED

TITLE--EXTRACTION AND PHOTOMETRIC DETERMINATION OF SOLASODINE -U- PROCESSING DATE--02OCT70

AUTHOR-(02)-TUKALO, YE.A., TSARIK, G.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(2), 56-8

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ALKALOID, PROCESSED PLANT PRODUCT, SOLVENT EXTRACTION, CHEMICAL ANALYSIS, PHOTOMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0534 STEP NO--UR/0450/70/004/002/0056/0059

CIRC ACCESSION NO--AP0113425

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

2/2 012 UNCLASSIFIED

CIRC ACCESSION NO--AP0113425 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEX FORMATION WAS INVESTIGATED OF SOLASODINE (I) WITH BROMOTHYMOL BLUE, BROMOPHENOL BLUE, METHYL RED, METHYL ORANGE (II), NEUTRAL RED, THYMOL BLUE, TROPEOLINE OO, AND PHENOL RED OVER THE PH RANGE 1.0-7.0. COLOR COMPLEXES FORMED WERE THEN EXTD. WITH CHCl SUB3 AND THEIR OPTICAL D. WAS MEASURED. A 1 IS TO 1 STABLE COMPLEX OF I WITH II (LAMBDA MAX. 421 M MU, E PRIMEIPERCENT SUB1 CM FOR I IN THE COMPLEX EQUAL 582 PLUS OR MINUS 6.35) WAS BEST EXTD. WITH CHCl SUB3 AT PH 3.0. THE SENSITIVITY OF THE REACTION WAS 0.018 MG-ML. THE FOLLOWING PHOTOCOLORIMETRIC PROCEDURE FOR DETG. I WAS THEN DEVELOPED: EXT. 0.1, 0.2, 0.3, 0.4, AND 0.5 ML 0.1PERCENT I SOLN. WITH 2 ML EACH 0.05PERCENT II, ADJUST PH TO 3.0 WITH AN ACETATE BUFFER, EXT. THE COMPLEX FROM EACH SOLN. WITH CHCl SUB3, DIL. EACH EXT. TO 25 ML WITH CHCl SUB3, MEASURE THE OPTICAL D. USING 10 MM CELL, AND A BLUE FILTER, AND CONSTRUCT A CALIBRATION GRAPH. DISSOLVE A SAMPLE TO BE ANALYZED IN 100 ML CHCl SUB3, TAKE 1 ML OF THE SOLN., AND CARRY OUT THE DETN. AS DESCRIBED. THE RELATIVE ERROR OF THE DETN. WAS GREATER THAN PLUS OR MINUS 1.3PERCENT.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 621.762:669.018.24(088.8)

TUKATSINSKIY, I. L., Riga Electrical Machinery Plant

"Antifriction P/M Material"

USSR Authors' Certificate No 273435, Cl. 40b, 9/08, (C 22c 9/08), filed 22 Jan 68, published 21 Sep 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G440P)

Translation: The copper-base antifriction P/M material contains lead, tin, zinc, and nickel. In order to lower the coefficient of friction and raise wear resistance, graphite and BN are introduced in the following ratio of components (in %): Pb 3-24; Sn0.5-6; Zn 0.1-3; graphite 0.4-5; BN 0.4-2; Ni 0.5-1.8; Cu the rest.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 547.558.1

KUKHAR', V. P., ZHMUROVA, I. N., ZOLOTAREVA, L. A., and TUKHAR', A. A.,
Institute of Organic Chemistry, Acad. Sc. UkrSSR

"Basicity of Phosphazo Compounds. II. N-(4-Triphenylphosphazobenzylidene)-anilines and Triphenylphosphazoanilines"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 8, No 4, Apr 72, pp 756-758

Abstract: 3- or 4-X-N-(4-triphenylphosphazobenzylidene)anilines are more basic than the corresponding N-(4-dimethylaminobenzylidene)anilines by about 2-3.5 pK_a units. Their basicity constants correlate with the $\sigma°$ constants of the substituent X. This indicates that N-(4-triphenylphosphazobenzylidene)anilines are protonated at the triphenylphosphazo group, and N-(4-dimethylaminobenzylidene)anilines are protonated at the nitrogen atom of the CH=N group. N,N-Dimethyl-p-phenylenediamine is protonated at the dimethylamino group. Triphenylphosphazo anilines add a proton to the nitrogen atom of the triphenylphosphazo group. p-Triphenylphosphazoaniline is more basic than p-phenylenediamine (pK_a 11.85) and N,N-dimethyl-p-phenylenediamine (pK_a 13.00), but less basic than p-bis-(triphenylphosphazo)phenylene (pK_a 18.72).
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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR UDC 547.558.1

ZHMUROVA, I. N., TUKHAR', A. A., and KIRSANOV, A. V., Institute of Organic Chemistry, Acad. Sc. Ukrainian SSR

"Triphenylphosphazoanilines"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 785-791

Abstract: Triphenylphosphazoanilines (I) -- usually light yellow crystalline compounds -- are obtained through oxidative imine formation, by treating triphenylphosphine with azidoanilines. They are stable in air, give picrates with picric acid and dissolve in dilute mineral acids without decomposition. Hot mineral acids and bases hydrolyze (I) to corresponding phenylenediamines. p-Triphenylphosphazoaniline reacts with aromatic aldehydes and sodium nitrite yielding triphenylphosphine oxides and diarlidene-p-phenylenediamine. Arylidene-p-triphenylphosphazoanilines containing no dimethylamine groups in the arylidene ring were obtained from azidoanilines converted to arylideneazidoanilines, which then were condensed with triphenylphosphine.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 546.185:541.651.2

KUKHAR', V. P., PETRASHENKO, A. A., ZHMUROVA, I. N., TUKHAR', A. A., SOLODUSHENKOV, S. N., Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"Basicity of Phosphazo Compounds. I"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1696-1699

Abstract: m-Triphenylphosphazobenzoic acid and its methyl ester, melting at 199-201° and 126-127°, respectively, were synthesized by adding triphenylphosphine to a hot solution of the parent acid or ester in benzene and collecting the product precipitated from the cooled mixture. The p-triphenylphosphazobenzoic acid was obtained analogously with reversed addition of the reagents; the product melted at 241-243°C. To obtain triphenylphosphazo-p-trifluoromethylsulfonylbenzene, m.p. 157-159°, triphenylphosphine was added to the benzene solution of p-trifluoromethylsulfonylazidobenzene. A solution of p-trifluoromethylsulfonylaniline in dilute hydrochloric acid was diazotized, and a solution of sodium azide

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

KUKHAR', V. P., et al, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1696-1699

was added gradually, yielding p-trifluoromethylsulfonylazidobenzene, m.p. 53-55°. Other compounds were obtained by known methods. Their pK values for basic and acidic ionization were determined. It was found that the substituents on the phenyl ring show principally an inductive effect on the reactive center of the triphenylphosphazoarenes. The m-triphenylphosphazo group is a greater electron donor than the m-dimethylamino group, and the p-triphenylphosphazo group is a slightly lesser electron donor than the p-dimethylamino group. In 95% alcohol the m- and p-triphenylphosphazobenzoic acids exist to a considerable degree as internal salts.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 547.558.1

ZHMUROVA, I. N., TUKHARI, A. A., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Phosphazoaldehydes and Phosphazoketones. II"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 986-991

Abstract: The interaction of azidoketone oximes and p-azidobenzylideneanilines with triphenylphosphine gives triphenylphosphazoketone oximes and p-triphenylphosphazobenzylideneanilines. The synthesis of phosphazoketone oximes and p-triphenylphosphazobenzylideneanilines directly from p-triphenylphosphazobenzaldehyde and phosphazoketones is complicated by side reactions on the phosphazo group.

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USSR

UDC 546.185

ZHMUROVA, I. N., KUKHAR', V. P., TUKHAR', A. A., ZOLOTAREVA, L. A.

"Mutual Effect of Substitutions in Triphenylphosphazo Benzenes"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 82-86

Abstract: A study was made of the mutual effect of substitutions in triphenylphosphazo benzenes. The basicity constant of the triphenylphosphazo benzenes $(C_6H_5)_3P = NC_6H_4X$ and analines $XC_6H_4NH_2$ are correlated identically satisfactorily with σ^0, σ and σ^- by the constants of the substitutions X. In contrast to the dienthylamino and the amino groups, the triphenylphosphato group has a positive induction effect. The following tales of values are presented: 1) the parameters of the correlation equations pK_a -- the constants σ^0, σ and σ^- for triphenylphosphazo benzenes $(C_6H_5)_3P = NC_6H_4X$ calculated by the data of V. P. Kukhar', et al., [ZhOKh, No 40, 1696, 1970], the more exactly defined parameters of the correlation equations pK_a -- constants σ^0, σ and σ^-, the parameters of the correlation

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USSR

ZHMUROVA, I. N., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 82-86

equations pK_a -- constants σ^0, σ and σ^- for triphenylphosphazo benzylidenanilines n, n'-$(C_6H_5)_3P = NC_6H_4CH = NC_6H_4X$ in nitromethane, the parameters of the correlation equations pK_a -- constants σ^0, σ and σ^- for analines $NH_2C_6H_4X$, the reaction constants of the triphenylphosphazo group in alcohol and nitromethane by the equations of M. I. Kabatschnik [Phosphorus, No 1, 117, 1971], the Hammett constants and the components σ_n of the constants of the groups $(C_6H_5)_3P{=}N_-$, $(CH_3)_2N_-$, the basicity constants of the triphenylphosphazo-n-binyl benzenes $(C_6H_5)_3P{=}NC_6H_4CH{=}CXY$ in nitromethane (95% alcohol) and σ_n^0 substitution constants in nitromethane (95% alcohol) calculated by pK_a of triphenylphosphazo benzenes $(C_6H_5)_3P{=}NC_6H_4X$.

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USSR

UDC 546.185

ZHMUROVA, I. N., YURCHENKO, R. I., YURCHENKO, V. G., TUKHAR', A. A., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukraine SSR

"Electrophillic Constants (σ+) of Phosphazo Groups"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 4, 1972, pp 779-785

Abstract: Correlation equations between νmax of para-disubstituted benzenes XC_6H_4Y -- where X is a fluctuating donor and Y is a stable acceptor -- and the electrophillic constants of the X group may be used to calculate the σ^+ of new electron-donor groups. This linear relationship between νmax and σ^+ was determined for benzaldehydes, acetophenones, nitrobenzenes, azobenzenes, and nitroazobenzenes in ethanol, acetonitrile, heptane, hexane, and isooctane. The σ^+ values of the phosphazo group were determined from these. Data on both νmax and σ^+ are given in four tables and a graph. The change in the electronic configurations of groups in the phosphorus atom had little influence on the σ^+.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 621.791.75.04

VERBITSKIY, V. G., and LANDA, M. I., Candidates of Technical Sciences, and TUKHMETOV, R. YU., Engineer Ufa Aviation Institute imeni S. Ordzhonikidze; SHNAYDER, B. I., Candidate of Technical Sciences (Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences Ukrainian SSR)

"Use of Ceramics in Microplasma Welding Torches"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 74, pp 70-71

Abstract: The requirements of microplasma welding torches are discussed from the viewpoint of using nozzles made of ceramics. Analysis of the physico-chemical, thermomechanical, and electrical properties of ceramic materials showed that materials of the following modifications are required for welding torches: volumetrically constant with a porous ceramic structure for making parts testing the sharp thermal shocks and action of high temperature; volumetrically constant with a high gas permeability for gas lenses, and dense ceramic materials providing laminar flow of the shielding gas for mechanically and electrically loaded parts. It is advantageous to use materials of the Al_2O_3-ZrO_2 system to produce ceramics of the described modifications.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

VERBITSKIY, V. G., et al., Avtomaticheskaya Svarka, No 2, Feb 74, pp 70-71

Materials made of MgO, HfO_2 and others also show promise for use in the design of microplasma welding torches. Three figures, three bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

Combustion

UDC 662.311.1

ALEKSANDROV, V. V., BOLDYREVA, A. V., BOLDYREV, V. V., TUKHTAYEV, R. K.,
Institute of Chemical Kinetics and Combustion, Siberian Department of the
Academy of Sciences of the USSR, Novosibirsk

"Mechanism of Action of Certain Additives on the Rate of Combustion of DINY"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 1, 1 May 73, pp 161-163

Abstract: The action of additives on the rate of combustion of condensed media has not been adequately studied. Different viewpoints have been expressed to explain experimental data. In this paper observations were made on the combustion of DINY (dinitrohydroxydiethylnitrosilane) which could in many instances help to explain the mechanism of the action of additives. The additives studied were potassium bichromate and ternary compositions of compounds of lead and copper with finely dispersed carbon. The experiments revealed a previously undescribed mechanism of the accelerating action of additives on the combustion of explosives: condensed formations arise on the burning surface where exothermal reactions take place, heating these formations to a high temperature. The active substances in these formations is either introduced in ready form in the additives (as for example in the dispersed carbon of the ternary compositions) or is formed directly in the surface layer of the burning explosive as was observed in the case of chromium-

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

ALEKSANDROV, V. V., et al., Doklady Akademii Nauk SSSR, Vol 210, No 1, 1 May 73, pp 161-163

containing additives. The authors thank A. G. Merzhanov for assistance and constructive criticism, and V. S. Babkin for useful remarks in discussion of the work.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC: 541.124

ALEKSANDROV, V. V., BUFETOV, N. S., PASTUKHOVA, T. V., TUKHTAYEV, R. K.,
Novosibirsk

"Using Pulse Calorimetry to Study the Kinetics of Reactions in Condensed Media"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 9, No 1, Jan/Feb 73, pp 75-83

Abstract: The authors investigate pulse calorimetry as a means of studying high-temperature reactions. Some of the advantages of this research procedure are its fundamental nature (there are almost no chemical reactions which do not involve release or absorption of heat), the fact that calorimetric methods are direct, which simplifies interpretation, and the possibility of making measurements where other methods cannot be used. It is shown that the best way to ensure that the time constant of the calorimeter is much shorter than the time constant of the reaction to be studied, is to use thin layers in the calorimetric cell construction. Some examples are given of experimental data obtained by pulse calorimetry.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 577.153.4.(575.3)

KHAYDAROV, K. KH., TUKHTAYEV, T. M., and NIKITIN, V. I., Member of the Tadshik Academy of Sciences; Institute of Chemistry of the Tadzhik Academy of Sciences, and the Tadzhik State Medical Institute imeni Abual' ibn-Sino

"Anticholinesterase Activity of Certain Derivatives of Carbamic Acid"

Dushanbe, Doklady Akademii Nauk Tadshikskoy SSR, Vol XIII, No 11, 1970, pp 65-67

Abstract: Carbamates, generally, are already known as sedatives, soporifics, tonics, antispasmodics, muscle-relaxants and anticholinesterasic agents; the Institute of Chemistry is attempting to extend the list of physiologically active carbamates, having thus far synthesized 10 compounds in this series not previously described. The compound 5-carbamyloxy-2,2,5,6,6-pentamethyl-Δ^3-pyran (K_2) was the object of the present study. In vitro tests of K_2 showed that various concentrations produced different degrees of inhibition of the anticholinesterase activity of the blood serum of a healthy rabbit; concentrations of 10^{-3} and 10^{-4} produced strong inhibition (25.1 and 24.1%), and weaker concentrations of 10^{-5} and 10^{-6}, only weak inhibition. In vivo tests, K_2 injections of 50 mg did not produce any change in 15 and 30 minutes, but did produce a 6.8% reduction after an hour, and a 10% reduction after two hours. A 100 mg/kg dose, however, produced a

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

KHAYDAROV, K. KH., et al., Doklady Akademii Nauk Tadzhikskoy SSR, Vol XIII, No 11, 1970, pp 65-67

10% reduction in cholinesterase activity in a half-hour, and this increased to 16.0, 15.6, 17.0 and 22.9%, after 1,2, 3 and 4 hours, respectively.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 615.3

TUKHTAYEV, T. M., and PAUK, S. I., Tadzhik State Medical Institute imeni Abuali Ibn-Sino

"Effect of Mumio on the Nucleic Acid Content of the Hematopoietic Organs During Acute Radiation Sickness Induced by Low-Intensity Irradiation"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol 13, No 7, 1970, pp 62-65

Abstract: Eighty mice received a single exposure to whole-body x-ray irradiation (450 r) and, 3 to 25 days later, were given a single peroral dose of the preparation mumy (500 mg/kg). Irradiation sharply reduced the nucleic acid (particularly DNA) content of the bone-marrow and spleen cells. The decrease in RNA was less pronounced in the bone marrow than in the spleen. Restoration of the nucleic acids, especially of RNA, proceeded more rapidly in mice treated with mumyo than in the control group. Mumyo also stimulated hematopoiesis and cell division

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 034 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--CHANGE IN THE CONTENT OF TOTAL PROTEIN AND PROTEIN FRACTIONS IN THE BLOOD SERUM OF RATS IN THE HIGH MOUNTAINS -U-

AUTHOR--TUKHTAYEV, I.M., PAUK, S.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KOSMICHESKAYA BIOLOGIYA I MEDITSINA, RUSSIAN, VOL 4, NO 1, JANUARY FEBRUARY 1970, PP 81-82

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ALTITUDE SICKNESS, BLOOD CHEMISTRY, BLOOD SERUM, PROTEIN, SPACE MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1936/0751 STEP NO--UR/0453/70/004/001/0081/0082

CIRC ACCESSION NO--AP0102716

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

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CIRC ACCESSION NO--AP0102716 UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DETERMINATIONS OF THE DYNAMICS OF THE CONTENT OF TOTAL PROTEIN AND PROTEIN FRACTIONS IN THE BLOOD SERUM OF RATS WERE MADE IN THE HIGH MOUNTAINS (3,500 M ABOVE SEA LEVEL) ON ANZOBSKIY PASS (TADZHIKSKAYA SSR) DURING A SCIENTIFIC EXPEDITION IN JULY TO AUGUST 1968, ORGANIZED BY THE TADZHIK MEDICAL INSTITUTE. THE EXPERIMENTS WERE CARRIED OUT WITH 90 COMMON RATS OF BOTH SEXES WEIGHING 150-170 G. THE RATS WERE DECAPITATED ON THE 1ST, 3D, 5TH, 7TH, 10TH, 12TH AND 15TH DAYS AFTER THEY HAD BEEN TRANSPORTED TO THE HIGH MOUNTAINS.

PROCESSING DATE--11SEP70

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--CHANGE IN THE TOTAL PROTEIN AND PROTEIN FRACTION CONTENTS OF THE BLOOD SERUM OF RATS UNDER HIGHLAND CONDITIONS -U-

AUTHOR--TUKHTAYEV, T.M.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL. 4, JAN.-FEB. 1970, P. 81-82

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ALTITUDE SICKNESS, BLOOD CHEMISTRY, BLOOD SERUM, PROTEIN, ALBUMIN, ALPHA GLOBULIN, BETA GLOBULIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1970

STEP NO--UR/0453/70/004/000/0081/0082

CIRC ACCESSION NO--AP0120613

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

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UNCLASSIFIED

CIRC ACCESSION NO--AP0120613 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE DYNAMICS OF TOTAL PROTEIN CONTENT AND PROTEIN COMPOSITION IN THE BLOOD SERUM OF 80 RATS KEPT AT A NATURAL ALTITUDE OF 3600 M FOR 1 TO 15 DYAS BEFORE DECAPITATION. A DECREASE IN TOTAL PROTEIN CONTENT, LARGELY DUE TO THE DECREASES IN ALBUMIN AND ALPHA AND BETA GLOBULIN FRACTIONS. WAS OBSERVED BY THE 7TH DAY OF THE EXPERIMENT, FOLLOWED BY A PARTIALLY RECOVERY AFTER THE 10TH DAY, WHICH WAS STILL INCOMPLETE AT THE END OF EXPERIMENT.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

TUKHVATOV, M. B., YAKUBOV, A. R., ABDIKHAKIMOV, N. A.

UDC 8.74

"Program for Execution of the Weighting Algorithm for Solving the Problem of Boolean Programming on the Minsk-22 Computer"

Nauch. zap. Tashkent. in-t nar. kh-va (Scientific Notes of Tashkent Institute of the National Economy), 1971, vyp. 60, pp 27-42 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V609)

No abstract

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC: 512.25/.26+519.3:330.115

TUKHVATOV, M. B.

"Weight Approach to Solution of a Problem in Boolean Programming"

V sb. Vopr. vychisl. i prikl. mat. (Problems of Computational and Applied Mathematics—collection of works), vyp. 2, Tashkent, 1970, pp 27-38 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V500)

Translation: An approximate method is proposed for solving a problem in whole-number linear programming with Boolean variables. The author states that this method will be effective in solving large problems, but gives absolutely no substantiation of this statement. Yu. Finkel'-shteyn.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

VUKS, M. F., ATAKHODZHAYEV, A. K., TUKHVATULLIN, F. Kh.

UDC 535

"An Extremity of the Rayleigh Scattering Line of Light in Liquid and Relaxation Phenomena"

V sb. Sovrem. probl. fiz. khimii (Modern Problems of Chemical Physics -- Collection of Works), Vol. 5, Moscow, Moscow University, 1970, pp 210-222 (from RZh-Fizika, No 7, Jul 71, Abstract No 7D918)

Translation: The distribution of intensity in the near region of the extremity of a Rayleigh scattering line of light was investigated for 18 liquids: CS_2, benzene, toluene, and a number of substitutes for benzene and toluene. It was shown that in determining the relaxation time τ from the broadening of the scattering line, the best results are given by measurements in the region where the intensity drops by a factor of 4-18. The effect of the dimensions and shapes of molecules on the width of the scattering line was investigated. Greater values of τ correspond to molecules of greater dimensions. Analysis of experimental data shows that the Debye relationship relating τ of the reorientation of the molecules with the viscosity of the medium is suitable for spherical molecules. The effect of solvents on the value of τ and the shape of the scattering line was investigated. Reasons for deviations of the intensity distribution from the dispersion distribution at the extremities of the line are discussed. Also investigated was the effect of temperature on the distribution of intensity in the shape of the Rayleigh scattering line. 26 ref. E. V. B.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 538.378:534-8

KARMINSKIY, YU. A., KONDRAT'YEV, YU.A., TUKKAYEV, A.A.

"Transfer Constant Of Electroacoustic Transducer"

V sb. Introskopiya (Introscopia--Collection Of Works), Moscow, 1970, pp 104-110 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A431)

Translation: An expression is derived for the ratio of the amplitude of the input signal which is supplied to the target of an electroacoustic transducer, and the output which is removed from the collector. It is shown that this ratio cannot be larger than one and at high-frequency it decreases inversely proportional to the frequency. 2 ill. 4 ref. N.S.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

KARMINSKIY, YU. A., KONDRAT'YEV, YU. A., TUKKAYEV, A.A.

UDC 538.378:534-8

"Signal-To-Noise Ratio At Output Of Electroacoustic Transducer"

V sb. Introskopiya (Introscopia--Collection Of Works), Moscow, 1970, pp 87-93 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A433)

Translation: A desired signal-to-noise ratio is determined for two forms of load (aperiodic load and oscillatory circuit). The band of the electrical channel in both cases is identical; rectangularity of the characteristics is assured in the amplifying channel. The conditions are derived in which the signal-to-noise ratio at the output of the transducer does not depend in practice on the form of the load. With use of an oscillatory circuit as a load, a Q times (Q is the figure of merit of the circuit) smaller amplification is required; however, at the same time specific limitations are imposed on Q. 1 ill. 3 ref. N.S.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 616.981.553-056.76.02:[664.848:641.48

TUKKAYEVA, Z. M., Chair of Infectious Diseases, North Ossetian Medical Institute, Ordzhonikidze

"Botulism Caused by Home-Canned Mushrooms"

Moscow, Gigiyena i Sanitariya, No 12, 1971, pp 94-95

Abstract: All six members of a family developed botulism after eating mushrooms marinated at home. Two died the first day despite receiving botulinus antitoxin (10,000 IU), antibiotics, physiological saline, glucose, cardiac stimulants, multiple vitamins, desensitizing agents, and oxygen. The other four were then given in addition daily injections of hydrocortisone (initially 62 mg and thereafter in decreasing doses). One died on the 7th day. It is suggested that the officially recommended dose of botulinus antitoxin be increased from 10,000 to 30,000 to 50,000 IU for moderate to severe forms of the disease. Seven persons subsequently given large doses of the serum survived. Administration of Hormones combined with specific and pathogenetic therapy is also advised.

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020

UNCLASSIFIED

TITLE--EFFECT OF THE TYPE OF CHEMICAL BONDS ON THE STRENGTH OF RUBBERS OBTAINED BY CURING WITH ALKYLPHENOLFORMALDEHYDE RESIN -U-

PROCESSING DATE--30OCT70

AUTHOR-(04)-NIKITIN, YU.N., EPSHTEYN, V.G., KOROBOV, V.I., TUKTAROVA, L.S.

CCUNTRY CF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 403-408

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--CHEMICAL BONDING, VULCANIZATE, MECHANICAL STRENGTH, CURING AGENT, PHENOL FORMALDEHYDE RESIN

CONTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1583

STEP NO--UR/0069/70/032/003/0403/0408

CIRC ACCESSION NO--AP0125205

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

272 020

CIRC ACCESSION NO--AP0125205 UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRONG AND RELATIVELY SHORT CROSS LINKS IN THE STRUCTURE OF UNFILLED VULCANIZATES FROM CRYSTALLIZING RUBBERS OBTAINED BY CROSS LINKING WITH ALKYLPHENOLFORMALDEHYDE RESIN DO NOT HINDER THE ORIENTATION CYRSTALLIZATION OF MOLECULAR CHAINS IF THE STRUCTURE OF VULCANIZATES IS SUFFICIENTLY HOMOGENEOUS. THESE VULCANIZATES HAVE HIGH STRENGTH PROPERTIES. THE PRESENCE OF RESIN CROSS LINKS WITH ETHER GROUPS, WHICH ARE MORE LABILE UNDER THERMO MECHANICAL TREATMENT, ENHANCES APPRECIABLY THE STRENGTH PROPERTIES OF VULCANIZATES BASED ON NON CRYSTALLIZING, AND TO A LESSER EXTENT, OF THOSE BASED ON CRYSTALLIZING RUBBERS. FACILITY: NII MONOMEROV DLYA SINTETICHESKOGO KAUCHUKA, YAROSLAVL'.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 014

UNCLASSIFIED

TITLE--EFFECT OF HERBICIDES ON SOIL MICROFLORA IN COTTON FIELDS -U-

PROCESSING DATE--04DEC70

AUTHOR--TULABAYEV, B.D.

COUNTRY OF INFO--USSR

SOURCE--UZB. BIOL. ZH. 1970, 14(1), 11-14

DATE PUBLISHED--------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HERBICIDE, SOIL MICROBIOLOGY, ACTINOMYCES, AEROBIC BACTERIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0016

STEP NO--UR/9079/70/014/001/0011/0014

CIRC ACCESSION NO--AP0137215

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

2/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137215

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EPTAM (8 KG-HA) AND ALANPA (5 KG-HA) APPLIED TO SOIL DID NOT AFFECT NOS. OF AMMONIA FIXING OR NITRIFYING BACTERIA, ASCOMYCETES, OR AZOTOBACTERIA, WHEREAS DALAPON REDUCED THE NOS. OF AMMONIA FIXING AND NITRIFYING BACTERIA AND ASCOMYCETES. EPTAM AND DALAPON REDUCED THE NOS. OF ACTINOMYCETES. ALL 3 HERBICIDES INCREASED THE NOS. OF DENITRIFYING BACTERIA AND REDUCED THE NO. OF AEROBIC BACTERIA GROWING ON CELLULOSE. NONE OF THE HERBICIDES AFFECTED GROWTH OF COTTON PLANTS WHEN APPLIED BEFORE OR AFTER PLANTING, AND DALAPON, EPTAM, AND ALANAP WERE 70.3, 63.5, AND 60PERCENT, RESP., EFFECTIVE IN CONTROLLING WEEDS. FACILITY: SAMARKAND. SEL'SKOKHOZ. INST., SAMARKAND, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

1/2 025 UNCLASSIFIED

TITLE--ALLO AND ISOALLOXAZINES. XXIV. SYNTHESIS OF 6,7,DIAMINOALLOXAZINE AND NEW TETRACYCLIC SYSTEMS -U-

PROCESSING DATE--20NOV70

AUTHOR-(05)-TULCHINSKAYA, L.S., KLEBANOVA, V.D., POLYAKOVA, N.A., OVORYANTSEVA, G.G., BEREZOVSKIY, V.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 868-73

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--HETEROCYCLIC NITROGEN COMPOUND, POLYNUCLEAR HYDROCARBON, AMINE, FLUORESCENCE, UV LIGHT, IMIDAZOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1183

STEP NO--UR/0079/70/040/004/0868/0873

CIRC ACCESSION NO--AP0128603

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

2/2 025

CIRC ACCESSION NO--AP0128603 UNCLASSIFIED PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO 1 G ALLOXAN IN 2N HCL WAS SLOWLY ADDED 3.5 G 1,2,4,5,C SUB6 H SUB2 (NH SUB2) SUB4 SULFATE IN 2N HCL AND THE MIXT. HEATED 0.5 HR TO GIVE 79.5PERCENT 7,8,DIAMINOALLOXAZINE (I), M. LARGER THAN 300DEGREES. THIS (0.1 G) AND 0.6 ML HCO SUB2 H IN 1.5 ML CONCD. HCL AND 3.5 ML H SUB2 O REFLUXED 2 HR AND ADJUSTED WITH NH SUB4 CH TO PH 6-7 GAVE 74PERCENT IMIDAZO(4,5,I)ALLOXAZINE. ISOLATED AS YELLOW HCL SALT, M. LARGER THAN 300DEGREES. I HEATED 6 HR WITH ACCL,ACOH OR AC SUB2 O,ACOH GAVE 68PERCENT 2,METHYLIMIDAZO(4,5,I)ALLOXAZINE (II), ISOLATED AS PERCHLORATE, M. LARGER THAN 300DEGREES, AS RED CRYSTALS; HCL SALT, AMORPHOUS BROWN SOLID. I AND NANO SUB2 IN AQ. HCL GAVE IN 24 HR 82.7PERCENT TRIAZOLE(4,5,I),ALLOXAZINE, M. LARGER THAN 300DEGREES. I IN ME SUB2 SO KEPT 3 HR WITH AC SUB2 O GAVE RED ORANGE 6,ACETAMIDO,7,AMINOALLOXAZINE. THE IMIDAZOALLOXAZINES GAVE YELLOW GREEN FLUORESCENCE IN UV LIGHT. HEUCKEL ANAL. OF ELECTRONIC DISTRIBUTION IN THESE COMPDS. WAS MADE AND PLOTS OF ELECTRON D. WERE SHOWN. THE RESULTS INDICATED THAT THE AMINO GROUP IN THE 7 POSITION IS MOST LIKELY TO BE ACYLATED FIRST IN I; THIS WAS CONFIRMED AS SHOWN ABOVE.

FACILITY: VSES. NAUCH. ISSLED. VITAMIN. INST., MOSCOW, USSR.

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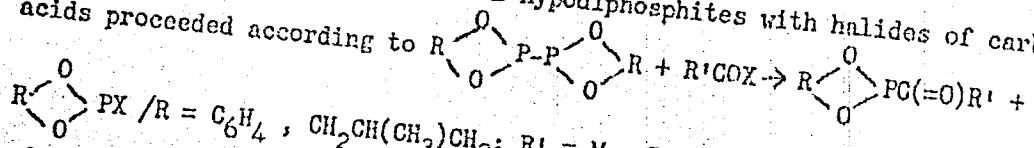
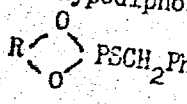
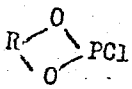
USSR

NIFANT'YEV, E. Ye., KOMLEV, I. V., KONYAYEVA, I. P., ZAVALISHINA, A. I., and TUL'CHINSKIY, V. M.

UDC 547.26'118

"Reactions of Hypodiphosphites with Acid Chlorides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2368-2373

Abstract: The reaction of neutral hypodiphosphites with halides of carboxylic acids proceeded according to  PX /R = C_6H_4 , $CH_2CH(CH_3)CH_2$; R' = Me, Ph; X = Cl, Br/. Upon the reaction of hypodiphosphites with benzylsulfenyl chloride $PhCH_2SCl$, benzyl thiol esters  $PSCH_2Ph$ of alkylenephosphorous acids /e.g., R = $CH_2CH(CH_3)CH_2$/ and chlorophosphites  PCl were obtained. By reacting the hypodiphosphites with chlorophosphites or chlorophosphines, unsymmetric structures connected over a P-P group were synthesized.

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USSR

TUL'CHINSKIY, V. N. and CHERNIN, S. M. UDC: 535.217

"Equipment for Investigating Effect of Infrared Radiation on the Speed of Chemical Processes"

Moscow, Pribory i tekhnika eksperimenta, No. 1, January-February, 1971, pp 208-211

Abstract: In the absence of lasers to supply variable radiation in the 2-5 micron range, the authors have developed equipment for studying resonance effects of infrared radiation in that range on valence bonds in the molecules of organic compounds. The material to be investigated is placed in a thermostated oven and subjected to the amplified image of a graphite infrared source, with a liquid filter in the upper part of the oven to select the wanted frequencies and reject the others. The irradiated material is then dissolved and placed in a standard container and analyzed through the resultant spectrum. A sectional diagram of the oven is shown. The graphite source operates in an argon atmosphere under a pressure of 10 atmospheres for one to two hours, a time sufficient for several experimental runs. A sample of the type of spectrum that can be obtained with this procedure is shown. The authors are members of the Moscow State University Chemistry Department.

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USSR

UDC 539.3

TUL'CHIY, V. I., KICHIGIN, V. G., SAPRYKINA, L. T., and YURCHENKO, T. A., Nikolayev Shipbuilding Institute

"Concerning the Equilibrium of a Plate With Arbitrarily Situated Reinforced Circular Apertures"

Kiev, Prikladnaya Mekhanika, No 1, 1971, pp 61-67

Abstract: The article deals with the two-dimensional stressed state of an infinite isotropic plate with any number of arbitrarily situated circular openings, the edges of which are reinforced by narrow elastic rings. The boundary conditions are written down with use of the complex Kolosov-Muskhelishvili potentials. By means of the series method in combination with the method of Cauchy-type integrals, the problem is reduced to an infinite quasiregular system of equations, which is realized on a digital electronic computer by the truncation method. The numerical data of some calculations are presented, which make it possible to ascertain the influence of the number of apertures on the stressed state of the plate. 2 figures, 1 table, 4 bibliographic entries.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR

UDC 539.3.01

TUL'CHIY, V. I., BUDAK, V. D., GRIBICH, N. G., SYPKO, V. P.

"On Determining the Stress Concentration at Danger Points of Plate-Bands With Rounding Off"

V sb. Kratk. tezisy dokl. k Konf. po povrezhdeniyam i ekspluat. nadzhnosti sudovykh konstruktsiy, 1972 (Brief Summaries of Papers at the Conference on Damages and the Operational Reliability of Ship Designs, 1972 -- Collection of Works), Vladivostok, 1972, pp 93-97 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V55)

Translation: Experimental graphs showing the relationship between the stress concentration coefficient and the geometric parameters of the weakening elements are shown for three elongated bands weakened by an opening and various types of punchings. The photoelasticity method was used to conduct the study on the coordinate-synchronous polarimeter KSP-7. The models were made of epoxy resin ED-5 and were subjected to uniaxial uniformly distributed stress. N. T. Glazunova.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203410009-0

USSR UDC 539.319:539.219.2

TUL'CHIY, V. I., KICHIGIN, V. G., and BUDAK, V. D., Nikolayev Shipbuilding Institute

"A Plate With Periodically Situated Groups of Arbitrary Reinforced Openings"

Kiev, Prikladnaya Mekhanika, No 6, Jun 72, pp 122-127

Abstract: There is presented the solution of a two-dimensional problem for plates with periodically situated groups of arbitrary openings without angular points, the edges of which are reinforced by complex elastic elements. The problem is solved by a combination of the method of a small parameter and the method of series, and is reduced to the solution of problems similar to those of a problem for a plate with circular openings. For a specific case, it is proved that the obtained system of equations is quasi-regular. Numerical examples are presented. 4 figures. 6 references.

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