

172 011 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--STRUCTURE OF PRODUCTS OF THE ADDITION OF DIALKYL PHOSPHITES TO  
DIETHYL ETHERS OF GEM DIOLS -U-  
AUTHOR--(05)--KALABIN, G.A., ATAVIN, A.S., GAVRILOVA, G.M., TROFIMOV, B.A.,  
SHOSTAKOVSKIY, M.F.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(4), 849-52 (CHEM)  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ETHER, HETEROCYCLIC OXYGEN COMPOUND, PHOSPHATE ESTER, NUCLEAR  
STRUCTURE  
CENTRGL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1985/1894 STEP NO--UR/0020/70/190/004/0849/0852  
CIRC ACCESSION NO--AT0101938  
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0101938

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM THE NMR SPECTRA OF THE PRODUCTS OF REACTION OF (R PRIME1 O) SUB2 PHO WITH RCH(OCH:CH SUB2) SUB2 (PROFIMOV, ET AL., 1969), THE STRUCTURES OF THE PRODUCTS WERE SHOWN TO BE I (R EQUAL H OR ALKYL, R PRIME1 EQUAL ALKYL). THUS WERE PREPD. I (R EQUAL H, R PRIME1 EQUAL R PRIME2 EQUAL ME), I (R EQUAL H, R PRIME1 EQUAL PR, R PRIME2 EQUAL ME), AND I (R EQUAL R PRIME1 EQUAL R PRIME2 EQUAL ME). THE SPECTRAL DATA ARE TABULATED IN DETAIL. THE REACTION IS STEREOSPECIFIC, YIELDING CIS,4,5,SUBSTITUTED-I.

UNCLASSIFIED

USSR

UDC 547.26'118+546.287

TROFIMOV, B. A., GAVRILOVA, G. M., KALABIN, G. A., and VORONKOV, M. G.,  
Irkutsk Institute of Organic Chemistry, Siberian Branch of the Academy of  
Sciences USSR

"Bis(trimethylsilyl)phosponemethyldioxacyclanes, Cyclic Addition Products of  
Bis(trimethylsilyl) Phosphite and Divinyl Ethers of 1,1- and 1,2-Alkanediols"

Leningrad, Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2420-2425

Abstract: Homolytic addition of bis(trimethylsilyl) phosphite to divinyl  
ethers of 1,1-diols led to the formation of 4-methyl-5-bis(trimethylsilyl)  
phosponemethyl/-1,3-dioxolanes. The reaction proceeded stereospecifically  
with the formation of cis-isomers to the extent of 92%. The reaction of bis  
(trimethylsilyl) phosphite with the divinyl ether of ethyleneglycol resulted  
in the formation of 2-methyl-3-bis(trimethylsilyl)phosponemethyl/-1,4-dioxan.

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USSR

UDC 547.26'118

ATAVIN, A. S., TROFIMOV, B. A., GAVRILOVA, G. M., and KORATAYEVA, I. M.  
Irkutsk Institute of Organic Chemistry, Siberian Branch, Acad. Sc. USSR

"Cyclization Occurring During Homolytic Addition of Dialkyl Phosphites to  
Divinyl Ethers of vic-Diols"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 804-810

Abstract: It has been shown that dialkyl phosphites reacted with divinyl ethers of ethylene glycol, 1,2-propylene glycol, and 2,3-butylene glycol in presence of benzoyl or tert-butyl peroxides or azoisobutyronitrile produce methyl substituted 2-(dialkylphosphonemethyl)-1,4-dioxanes rather than the expected  $\beta$ -alkoxyethyl phosphates. In addition to these 1:1 cyclic addition products, phosphorus-containing oligomers were obtained in 35-100% yield, depending on the ratio of the reagents. In general, the main course of the addition of dialkyl phosphites to divinyl ethers of vicinal diols under homolytic conditions is the telomerization of ethers.

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USSR

G UDC 547.341:538.27

KALABIN, G. A., ATAVIN, A. S., GAVRILOVA, G. M., TROFIMOV, B. A.,  
and Corresponding Member of the Academy of Sciences USSR SHOSTAKOV-  
SKIY, M. F., Irkutsk Institute of Organic Chemistry, Irkutsk, East  
Siberian Affiliate, Siberian Department, Academy of Sciences USSR

"Structure of the Products Resulting From the Addition of Dialkyl-  
phosphites to Divinyl Ethers of Gem-diols"

Moscow, Doklady Akademii Nauk SSSR, Vol 190, No 4, Feb 70, pp 849-852

Abstract: On the basis of PMR data the authors conclude that the  
addition of dialkylphosphites to 1,1-divinylhydroxyalkanes occurs  
stereospecifically yielding 1,3-dioxolanes with cis-oriented substi-  
tuents at C<sub>4</sub> and C<sub>5</sub>. The PMR spectra indicate absence of free rota-  
tion around the P-C and C-C bonds in the (RO)<sub>2</sub>-P(:O)-CH<sub>2</sub>C- fragment;  
furthermore, the cycle is not planar. An assumption is made that  
one of the carbon atoms of the cycle (C<sub>4</sub> or C<sub>5</sub>) sticks out of the  
plane of the ring by an angle of more than 30°.

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USSR

UDC 547.242

GAVRILOV, V. I., KHEBNIKOV, V. N., GAVRILOVA, G. R., and CHERNOKAL'SKIY, B. D.,  
Kazan' Chemical-Technological Institute Imeni S. M. Kirov

"Synthesis of 10-Alkylphenoxyarsines"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, pp 1963-1966

Abstract: A series of new 10-alkylphenoxyarsines was synthesized by reacting appropriate alkylmagnesium halides with 10-chlorophenoxyarsine in benzene or toluene solution. Following compounds were obtained and characterized: 10-propyl-, isopropyl-, n-butyl-, 2-methylpropyl-, tert-butyl-, n-amyl-, 3-methylbutyl-, n-hexyl-, n-heptyl-, n-octyl-, cyclohexyl-, allyl-, benzyl-, and phenylacetylenylphenoxyarsines.

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USSR

UDC 632.95

BUBLIK, L. I., GAVRILOVA, G. V., KOSMATYY, YE. S.

"Application of Thin-Layer Chromatography for Express Analysis of Cyneb Residues in Tobacco"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesn. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp 136-138 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N477)

Translation: A study was made of the possibility of using thin-layer chromatography to analyze cyneb (I) with respect to potassium xanthogenate which is formed as a result of interaction of  $CS_2$  released during acid decomposition of I with a solution of KOH in MeOH. The adsorbent is a mixture of silica gel KSK (40 mesh) with  $Al_2O_3$ , II degree of activity (1:1). The chromatographic analysis is performed in a mixture of acetone-MeOH (20:1). The chromogenic reagent is 2% solution of  $(NH_4)_2 MoO_4$  acidified with HCl.

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Metrology, Mapping, Surveying, Graphics

USSR

UDC: 536.5.081(100):[536.421.4:669.6]

GAVRILOVA, I. S., FAYANS, A. Kh.

"Use of the Solidification Point of Tin to Calibrate Standard Resistance Thermometers"

Tr. Metrol. In-tov. SSSR [Works of Metrological Institutes, USSR], 1972, No 131(191), pp 19-23 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 12, 1972, Abstract No 12.32.899).

Translation: The possibility is studied of using the solidification point of tin as a primary constant point of the international practical temperature scale (IPTS) in place of the boiling point of water. This replacement results from the increase in accuracy of calibration, simplification of methods and apparatus. One version of apparatus is described, developed for determination of the solidification point of tin. Thanks to the portability of the apparatus, it can be used to support many metrological organizations. A method for calculation of the measured temperature in accordance with IPTS-68 is described. A method is presented for recalculation of the values of resistance of the  $R_{S_m}$  thermometer to  $R_{100}$  in calibrating the thermometer in accordance with IPTS-68. 1 figure, 7 biblio. refs.

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USSR

UDC 541.49:535.343:546.92

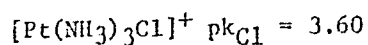
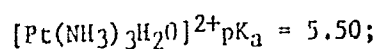
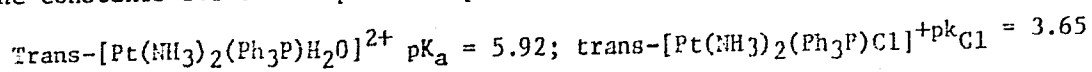
GAVRILOVA, I. V., GEL'FMAN, M. I., IVANNIKOVA, N. V., KISELEVA, N. V.,  
RAZUMOVSKIY, V. V., Leningrad Electrotechnical Communications Institute  
imeni M. A. Bonch-Bruyevich

"Problem of the Trans-effect of Triphenylphosphite and Triphenylstibine"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol XVIII, No 1, 1973, pp 194-199

Abstract: The infrared spectra (500-200  $\text{cm}^{-1}$ ) of cation complexes of platinum trans-[Pt(NH<sub>3</sub>)<sub>2</sub>LClnO<sub>3</sub>] (L = Ph<sub>3</sub>P, Ph<sub>3</sub>Sb) were measured. The ionization constants were found for the corresponding aquoions. A study was made of the thermodynamic stability of [Pt(NH<sub>3</sub>)<sub>2</sub>(Ph<sub>3</sub>P)Cl]<sup>+</sup> and (Pt(NH<sub>3</sub>)<sub>3</sub>Ph<sub>3</sub>P)<sup>2+</sup> in aqueous solutions. Both the  $\sigma$ -donor and  $\pi$ -acceptor capacity decrease in the order Ph<sub>3</sub> > Ph<sub>3</sub>Sb. Both trends are exhibited to approximately the same degree for each of the ligands.

The constants for the compared complexes were as follows:



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GAVRILOVA, I. V., et al., Zhurnal Neorganicheskoy Khimii, Vol XVIII, No 1, 1973, pp 194-199

A comparison of the thermodynamic characteristics with the spectroscopic characteristics shows that the frequency  $\nu_{\text{Pt-Cl}}$  is primarily determined by the  $\sigma$ -donor properties of the ligand in the trans-position.

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1/2 053 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--REACTION OF ALUMINUM BOROHYDRIDE WITH TETRAETHYLAMMONIUM  
BOROHYDRIDE -U-  
AUTHOR--TITOV, L.V., YEREMIN, YE.R., GAVRILOVA, L.A., ROSOLOVSKIY, V.YA.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD, NAUK SSSR, SER. KHIM. 1970, (1), 180-2  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ALUMINUM COMPOUND, BOROHYDRIDE, AMMONIUM COMPOUND, COMPLEX  
MOLECULE, WATER, PROPANOL, THERMOGRAM, X RAY DIFFRACTION STUDY, IR  
SPECTRUM, THERMAL DECOMPOSITION, TRIETHYLAMINE, ETHANE, ALUMINUM, BOROON  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1984/1666 STEP NO--U2/0062/70/009/001/0160/0182  
CIRC ACCESSION NO--AP0100270  
UNCLASSIFIED

2/2 053

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0100270

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ET SUB4 N(BH SUB4 ) PREPD. BY EXCHANGE BETWEEN ET SUB4 NBR AND EXCESS NBRH SUB4 IN ISO,PROH, WAS ALLOWED TO REACT IN A VACUUM SYSTEM WITH 5 MOLES AL(BH SUB4)SUB3, THE MIXT. WAS KEPT FINALLY AT ROOM TEMP. 3 TO 4 HR TO YIELD 100PERCENT COLORLESS AND STABLE (UNDER N ATM.) ET SUB4 N, AL(BH SUB4)SUB4, WHICH RAPIDLY REACTS WITH H SUB2 O WITH EVOLUTION OF H BUT WITHOUT SELF IGNITION; IT REACTS SIMILARLY WITH ISO,PROH. THE SUBSTANCE WAS CHARACTERIZED BY X RAY DIFFRACTION AND IR SPECTRUM; ON A THERMOGRAM IT GAVE AN ENDOOTHERM AT 97DEGREES THAT WAS REVERSIBLE AND PROBABLY CAUSED BY A POLYMORPHIC CHANGE. IN INERT ATM. AT 150DEGREES, IT DECOMP. WITH LOSS OF H, ET SUB3 N, C SUB2 H SUB6 AND H SUB2 H SUB6 (SMALL AMT.), LEAVING A RESIDUE OF B AND AL.

UNCLASSIFIED

USSR

UDC 678.027.5:678.674'524'42

FOMINA, L. L., GAVRILOVA, L. B., BOGDANOV, YU. N., and GOLOVACHEV, M. YE.

"Production of Multilayer Films Based on the Metal Plated Lavsan"

Moscow, Plasticheskiye Massy, No 11, 1972, pp 38-40

Abstract: Production and some characteristic properties of various multilayer films with low gas permeability have been reported. The starting material consisted of polyethylene terephthalate films plated with aluminum either on one side or on both. Low density nonstabilized polyethylene served as the adhesive. The preparation of multilayer films was carried out by the extrusion method. The gas permeability of the multilayer films depends on the gas permeability of the components. The doubly plated films showed lower air permeability than parent films, provided that the thickness of the multilayer films was at least 10%. These films find application in the production of wrapping material, casings, boxes, etc.

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1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--PROPARGYL ETHERS FROM 9,10,DIHYDRO,EXO,DICYCLOPENTADIENE -U-

AUTHOR--(04)-YASHINA, O.G., GAVRILOVA, L.D., RUDNEV, S.A., VRSCHAGIN,  
L.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 8(5), 971-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CONDENSATION REACTION, ALKYNE, AROMATIC HYDROCARBON, ETHER,  
CARBOXYLIC ACID CHLORIDE, FORMALDEHYDE, BROMINATED ORGANIC COMPOUND,  
CHLORINATED ORGANIC COMPOUND, AMINE DERIVATIVE, HYDROGENATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY ROLL/FRAME--3006/1319

STEP NO--UR/0366/70/006/005/0971/0975

CIRC ACCESSION NO--AP014893

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134993

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. IN THE PRESENCE OF BF SUB3. ET  
SUB2 O, HC TRIPLE BOND CCH SUB2 OH CONDENSED WITH DICYCLOPENTADIENE  
GIVING 9,PROPARGYLOXY,9,10,DIHYDRO,EXO,DICYCLOPENTADIENE (I). THE  
HYDROGENATION OF I GAVE 9,PROPOXY,I ANALOG. THE REACTION OF I WITH  
ACCL GAVE 9,CHLORO ANALOG OF I. I WAS ALSO PREPD. FROM ITS 9 HYDROXY  
ANALOG BY THE REACTION WITH BRCH SUB2 C TRIPLE BOND CH IN THE PRESENCE  
OF NA. THE CONDENSATION OF I WITH ALKYLAMINES AND HCHO GAVE THE 9,(RR  
PRIME NCH SUB2 C TRIPLE BOND CCH SUB2 O, SUBSTITUTED) ANALOG OF I.  
FACILITY: INST. NEFTE UGLEKHM. SIN., IRKUTSK, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--SYNERGISTIC EFFECTS IN THE SOLVENT EXTRACTION OF CHELATE COMPOUNDS.  
INFLUENCE OF THE DONOR ATOMS OF THE REAGENT -U-  
AUTHOR-(03)-ZOLOTOV, YU.A., PETRUKHIN, O.M., GAVRILOVA, L.G.  
COUNTRY OF INFO--USSR  
SOURCE--J. INORG. NUCL. CHEM. 1970, 32(5), 1679-88  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--SOLVENT EXTRACTION, ZINC, CHELATE COMPOUND, ORGANIC PHOSPHATE,  
KETONE, MERCAPTAN, QUINOLINE, CARBAMATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/2126 STEP NO--UK/0000/70/032/005/1679/1688  
CIRC ACCESSION NO--AP0125710  
UNCLASSIFIED



2/2 012

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125710

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLVENT EXTN. OF ZN WAS INVESTIGATED IN THE FORM OF CHELATE COMPS. WITH 2, THENOYLTRIFLUOROACETONE, 1, PHENYL, 3, METHYL, 4, BENZOYL, 5, PYRAZOLONE, 1, 5, DIPHENYLCARBAZONE, 8, MERCAPTOQUINOLINE 1, 5, DIPHENYLTHIOCARBAZONE (DITHIZONE), AND DIETHYLDITHIOCARBAMATE. BENZENE WAS USED AS DILUENT. EXTN. OF THE ABOVE COMPS. IN THE PRESENCE OF BU SUB3 PO SUB4 WAS ALSO STUDIED. A SYNERGISTIC EFFECT WAS OBSERVED FOR THE EXTN. OF COMPLEXES OF THE 1ST 3 REAGENTS, ITS MAGNITUDE DECREASING IN THE INDICATED SEQUENCE. WHEN USING S CONTG. REAGENTS, THE EFFECT WAS COMPLETELY ABSENT. THIS MAY BE ACCOUNTED FOR BY THE DIFFERENCE IN THE ZN COORDINATION NO. IN THESE CHELATES. IT IS ASSUMED THAT THE COORDINATION NO. OF THE METAL ION IN CHELATES STUDIES IN THE LOWER, THE STRONGER THE METAL REAGENT BOND. FACILITY: VERNADSKII INST. GEOCHEM. ANAL. CHEM., MOSCOW, USSR.

UNCLASSIFIED

I/2 040 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--ABSORPTION AND RADIATION CAPACITY OF A XENON PULSED DISCHARGE  
PLASMA -U-  
AUTHOR-(03)-GAVRILOVA, L.I., DOINIKOV, A.S., IGNATYEV, V.G.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(3), 537-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--DISCHARGE PLASMA, XENON, GAS PRESSURE, CURRENT DENSITY, LIGHT  
ABSORPTION, ABSORPTION COEFFICIENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1996/1492 STEP NO--UR/0368/70/012/003/0537/0539  
CIRC ACCESSION NO--AP0118479  
UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0118479

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OPTICAL PROPERTIES (TEMP. AND ABSORPTION COEFF.) WERE STUDIED OF XE PULSED DISCHARGE PLASMA AS A FUNCTION OF BOTH C.D. AND PRESSURE (100-600 TORR). THE ABSORPTION COEFF. VARIES ALMOST LINEARLY WITH C.D., THE PROPORTIONALITY CONST. BEING SPLIT INTO 2 FACTORS DEPENDING ON WAVELENGTH AND PRESSURE, RESP. THE RELATION BETWEEN PLASMA ABS. TAMP. T AND C.D. J (A-CM PRIME<sup>2</sup>) IS GIVEN BY THE EMPIRICAL EQUATION T EQUALS 1.14 TIMES 10 PRIME<sup>3</sup> J PRIME<sup>0</sup>.PRIME<sup>29</sup>. THE EXPTL. VALUES OF THE ABSORPTION COEFF. ARE APPROX. ONE THIRD COMPARED WITH THEORETICAL ONES, WHICH CAN BE ESPLAINED BY CHANGES IN CONC. OF NEUTRAL PLASMA PARTICLES DURING DISCHARGE.

UNCLASSIFIED

GAVRILOVA, L. N.

CALEEN

SO: JPRS 53328  
17 Jun 71

UDC 612.086.014.47

EVALUATING VESTIBULAR TOLERANCE

53328  
Article by H. A. Galitskiy, E. V. Ustyubhin, L. N. Gavrilova and E. I. Cheleskiy; Moscow, Meditsinskaya Mikrobiologiya i Parazitologiya, Russian, Vol 5, No 1, 1971, pp 65-74.

Abstract: This paper gives an analysis of clinical symptoms, motoric (myotonus and equilibrium function) and autonomic (sympathic and reticular hemodynamics) components of vestibular responses of 54 healthy male test subjects examined using the Coriolis acceleration test. It also describes an approach to be used in evaluating human tolerance to vestibular stimulation. With this approach the test subjects can be classified as tolerant and intolerant to vestibular stimuli. Vestibular intolerance is suggested by the development of third-degree vestibular-autonomic reactions. With respect to the time of appearance and level of manifestation of the responses, it is suggested that three degrees of vestibular tolerance and three degrees of vestibular intolerance be discriminated, each of which can be characterized by certain electrical and physiological reactions. These approaches to vestibular evaluations can be used in screening various types of personnel.

Evolution of the methods for expert evaluation of tolerance to vestibular effects is inseparably related to the development of means for motion. Whereas in the 1930's-1940's it was the so-called otolithic reaction (OR) and a test in tiltable seats which was most important and which entirely satisfied the requirements which at that time were imposed on flight personnel (V. I. Vaynshteyn, 1948; K. L. Khilov, 1950), as a result of improvements in aviation and particularly with the development of space flight, methods for investigating tolerance to Coriolis accelerations are now assuming increasingly greater importance. Most researchers feel that tests revealing accumulation of Coriolis accelerations are more informative and more valuable for preflight purposes than the other vestibular tolerance tests (S. N. Raskatov);

GAVRILOVA, L. N.

*space physiology*

SO: JPRS 54396  
3 NOV 71

STUDY OF VESTIBULAR REACTIVITY USING A GALVANIC CURRENT

[Article by R. R. Galile and L. N. Gavrilova. Moscow, Kometicheskaya Biologiya i Meditsina, Russian, Vol 5, no 4, pp 79-83, 1971, submitted for publication 18 May 1970]

UDC 612.886.014.421.7

Considerable successes have been attained during the last two decades in investigating functioning of the human vestibular analyzer due to development of methods for stimulating the sensitive elements present in the labyrinth of the inner ear and in improving methods for registering the reactions arising at this time. Now much attention is being devoted to investigation of the quantitative relationships between the intensity of the stimulus and intensity of the responses. The year 1948 must be regarded as the beginning of a systematic study of the functional capabilities of the vestibular analyzer to react differentially to discretely applied adequate stimuli of increasing intensity. At that time van Eegmond and Groen, Groen, A. Kh. Min'kovskiy, Yu. G. Grigor'ev and B. D. Bokhov) confirmed that with an increase in angular accelerations to certain limits there is an intensification of vestibular (sensory and somatic) reactions which is of an exponential nature.

G. A. Arustamov, R. R. Galile and L. N. Gavrilova demonstrated that the mentioned behavior in general is traced when using Coriolis accelerations as a stimulus. A number of authors (Yu. G. Grigor'ev, et al.; Vizi; Mit) have demonstrated that under the influence of different pathological processes directly or indirectly influencing functioning of the vestibular analyzer one observes changes in the vestibulometric (cupulometric) curve; it acquires the form of a plateau, irregular broken line, etc. Daily, et al. discovered changes in the cupulometric curve under the influence of antihistaminics. R. R. Galile and M. D. Yemel'yanov in studying the influence of antihistaminics on the analyzer after subjects had remained a long time in a rotating system, noted a change in the vestibulometric curves in the form of development of equalizing and paradoxical reactions.

Despite the extremely encouraging results of vestibulometric investigations, they were not widely applied, primarily because such investigations require complex and unwieldy electrically rotated apparatus.

USSR

UDC 547.963.3

SPIRIN, A. S., and GAVRILOVA, L. P.

Ribosoma (The Ribosome), Moscow, "Nauka," 1971, 256 pp

Translation: Annotation: The book reviews aspects of the structure and functioning of intracellular ribonucleo protein particles -- ribosomes. A detailed treatment is presented of current views on the mechanism of protein synthesis in cells, the interaction of information RNA and adaptor RNA with ribosomes during protein synthesis, and the dynamic nature of work of the ribosome particle.

An objective presentation of modern views on a broad range of questions related to ribosomes and biosynthesis of proteins is given. A subjective logical analysis is also given of the whole body of experimental data used for formulating a large number of conceptions, hypotheses, and problems for further work. Therefore, the book may be useful to a broad range of biologists, physicists, and chemists interested in problems of molecular biology as well as to narrow specialists such as biochemists and biophysicists working directly in the area of protein biosynthesis and the quaternary structure of biopolymers.

There are seven tables, 27 illustrations, and 32 pages of bibliography.

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CSO: 1840-W

- END -

- 114 -

USSR

UDC [537.226+537.311.33]:[537+535]

GAVRILOVA, N. D., MELESHINA, V. A., NOVIK, V. K., KOPTSIK, V. A.

"Peculiarities in the Behavior of Pyroelectric Coefficients of Triglycine Sulfate (TGS) Crystals With Varying Domain Structure in the Region of the Phase Transition Point"

Elektron. tekhnika. Nauch.-tekhn. sb. Materialy (Electronic Engineering: Collection of Scientific and Technical Works on Materials), 1970, vyp. 8, pp 15-18 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE613 from summary)

Translation: The article presents results of experimental research on the pyroelectric coefficients of TGS crystals for naturally unipolar specimens with varying domain structure and bias fields.

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USSR

UDC [537.226+537.311.33]:[537+535]

GAVRILOVA, N. D., NOVIK, V. K., KOPTSIK, V. A., and IVANOVA, S. V.

"Pyroelectric Study of the Behavior of Domain Structure in Triglycine Sulfate (TGS) and Rochelle Salt Crystals"

Elektron. tekhnika. Nauch.-tekhn. sb. Materialy (Electronic Engineering: Collection of Scientific and Technical Works on Materials), 1970, vyp 8, pp 19-21 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE612 from summary)

Translation: The authors investigated the formation of domain structure in TGS and  $BaTiO_3$  crystals during phase transition under various electrical boundary conditions at the moment of crossing through the Curie point. The difference in the behavior of closed and open specimens is discussed from the viewpoint of domain topography and the presence of charged domain boundaries.

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USSR

UDC 621.382

NOVIK, V. K., ~~GAVRILOVA, N. D.~~

"Pyroelectricity and the Prospects for its Practical Use"

Elektron. tekhnika. Nauch.-tekhn. sb. Materialy (Electronics Technology. Scientific-Technical Collection. Materials), 1970, Issue 8, pp 22-32 (from RZh-Elektronika i yeye primeneniye, No 9, September 1971, Abstract No 9B7)

Translation: This paper is a summary of works devoted to problems of the search for new pyroelectric materials, the study of the causes influencing the magnitude of the macroscopic polarization of ferroelectrics, and problems of the use of pyroelectricity together with the ferroelectric effect. A table is presented of the values of the pyroelectric coefficient and the dielectric constant for 15 substances with monocrystalline structure. An electrical equivalent circuit is described which reflects all the extrinsic properties of a pyroelectric as a temperature-electrical voltage converter. A classification system is given for the principal course for study of pyroelectric crystals, taking into account all the complex of electrical properties. In systems of thermal vision [teplovideniye], transmission of an image at a wavelength of 7-8 micrometer makes it possible to attain a  
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USSR

NOVIK, V. K., GAVRILOVA, N. D., Elektron. tekhnika. Nauch.-tekhn. sb. Materialy (Electronics Technology. Scientific-Technical Collection. Materials), 1970, Issue 8, pp 22-32 (from RZh-Elektronika i yeye primeneniye, No 9, September 1971, Abstract No 9B7)

sensitivity threshold of  $10^{-5}$  watt/cm with a resolution of 5 lines/mm and a modulation frequency of 10 frames/sec. By means of pyroelectric sensing units, their response to a  $2 \cdot 10^{-5}$  degree temperature change is experimentally established. The prospects for a constructive conference on film pyroelectric data units with film semiconductor amplifiers are indicated. 24 ref. K.S.

2/2

- 22 -

1/3 029 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--ON THE PERFORMANCE OF A PYROELECTRIC WITH A FIELD EFFECT TRANSISTOR  
-U-  
AUTHOR--(05)-NOVIK, V.K., NIKONOV, A.S., SOPOV, O.V., LEVINA, I.A.,  
GAVRILOVA, N.D.  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 3, MAR 70, PP 642-644  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.  
TOPIC TAGS--PYROELECTRIC DETECTOR, FIELD EFFECT TRANSISTOR, ELECTRONIC  
AMPLIFIER, ELECTROMAGNETIC NOISE, VOLT AMPERE CHARACTERISTIC, SILICON,  
SILICON DIOXIDE, THERMAL EFFECT  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAHE--1987/1465 STEP NO--UR/0109/70/000/003/0642/0644  
CIRC ACCESSION NO--AP0104759  
UNCLASSIFIED

2/3 029

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0104759

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER IS CONCERNED WITH THE PERFORMANCE OF PYROELECTRIC ELEMENTS (INFRARED AND MILLIMETER WAVE DETECTORS, THERMOMETERS, ETC.) WITH A FIELD EFFECT TRANSISTOR. A GROUP OF DEVICES COMBINING RECEIVING AND AMPLIFYING ELEMENTS IN ONE DEVICE WAS INVESTIGATED. THE DEVICES WERE BASED ON SILICON METAL OXIDE SEMICONDUCTOR (MOS) TRANSISTORS WITH P AND N TYPE CHANNELS. THE BASIC GOAL OF THE INVESTIGATION WAS THE DETERMINATION OF THE MAXIMUM VALUE OF THE THERMAL NOISE  $R$  WHICH ASSURES ABSENCE FROM BREAKDOWN OF THE GATE IN THE PRESENCE OF VARIOUS THERMAL EFFECTS (OVER ALL SLOW CHANGE OF TEMPERATURE, POWER PULSE EXPOSURE, ETC.). THE DEVICES WERE ASSEMBLED IN THE CASINGS OF TYPE GT-313 TRANSISTORS. THE SENSING ELEMENTS WERE PREPARED FROM CRYSTALS OF TRIGLYCINESULFATE AND MEASURED SIMILAR TO 3 BY 3 BY 0.5 MM. MOUNTING OF THE ELEMENTS AND THE ELECTRODES TO THEM WAS DONE WITH SILVER PASTE. THE INVESTIGATIONS SHOWED THAT THE STABILITY OF DEVICES WITH A P TYPE CHANNEL WAS DEFINITELY HIGHER. IT WAS DETERMINED THAT THE OPTIMUM VALUE OF  $R$  IS 1 G OHM. WITH SUCH A LOAD, THE THRESHOLD SENSITIVITY IN THE 20 HZ, 20 KHZ RANGE AMOUNTS TO SIMILAR TO 3 TIMES 10 PRIME NEGATIVE 7 WATT. IT WAS FOUND THAT TRANSISTORS WITH A VOLTAGE CUT OFF OF 5 V ARE MOST SUITABLE FOR OPERATION WITH PYROELECTRIC ELEMENTS. IN THAT CASE, THE BIAS VOLTAGE WHICH IS FED TO THE GATE FROM THE DRAIN SOURCE ASSISTS LONG TERM MAINTENANCE OF THE MACROSCOPIC POLARIZATION OF THE CRYSTAL. THE WRITERS CONCLUDE THAT FIELD EFFECT TRANSISTORS ARE PROMISING AMPLIFYING ELEMENTS FOR OPERATION WITH PYROELECTRIC ELEMENTS.

UNCLASSIFIED

3/3 029

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0104759

ABSTRACT/EXTRACT--USE OF MCS TRANSISTORS IS SUITABLE UP TO A FREQUENCY OF SIMILAR TO 1 KHZ. AT HIGHER FREQUENCIES WHERE A SMALLER VALUE OF R IS PERMISSIBLE, IT IS ADVISABLE TO USE DEVICES WITH A P-N JUNCTION HAVING LESS NOISE. 2 FIG. 8 REF. RECEIVED BY EDITOR: 20 FEB 69.

UNCLASSIFIED

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USSR

UDC: 621.382.323

NOVIK, V. K., NIKONOV, A. S., SOPOV, G. V., LEVINA, I. A.,  
GAVRILOVA, N. D., and YEGINA, Ye. K.

"Pyroelectric Operation with Field Effect Transistor"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No. 3, 1970, pp 642-644

Abstract: The authors list four advantages of pyroelectric elements which have made them objects of engineering interest: high input impedance; lower noise level; possibility of combining sensor and amplifying elements in a single device; possibility of designing planar and epitaxial integral sensor and amplifier systems. The pyroelectric detector has a low noise level, and its sensitivity depends on the condition that the product of the frequency, the load resistance, and the crystal capacitance exceed unity, a condition not easily realized in various types of transistor. Other characteristics of pyroelectric transistors are briefly listed. The authors of this brief communication

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USSR

NOVIK, V. K., et al, Radiotekhnika i Elektronika, Vol 15, No 3,  
1970, pp 642-644

Abstract:

tested combined sensor-amplifier pyroelectric units with silicon junctions; the purpose of these tests was to establish the maximum value of load resistor required to evade gating breakdown for various thermal reactions such as slow temperature changes, power flare spots, etc. Photographs and a schematic sketch of these devices are shown, and some details of their fabrication are given. The tests showed that the optimal value of the load resistor was 1 Gohm; at this value, the threshold sensitivity in the 20 Hz to 20 kHz was about  $3 \cdot 10^{-7}$  watts. Conclusions arrived at by the authors are: field effect transistors are promising amplifier elements for working with pyroelectric detectors; it is better to combine sensing and amplifying elements in a single package than to mount the pyroelectric directly on the transistor p-n structure.

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USSR

UDC: 8.74

GAVRILOVA, N. L.

"Man in the Control Loop for Synthesis in an Informational Game"

Kibernet. i vychisl. tekhn. Resp. mezhved. sb. (Cybernetics and Computer Technology. Republic Interdepartmental Collection), 1972, vyp. 13, pp 90-92 (from RZh-Kibernetika, No 5, May 73, abstract No 5V839 by the author)

Translation: It is shown that for one informational differential game the problem of synthesis breaks down into the task of determining the center of some randomly changing set and construction of a control as a function of this center. It is proposed that the first problem be treated as a problem of situation recognition and that it be handled by a person, as the system most effective for solving such problems, i. e. by the best means within a given time.

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1/2 009 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--THE EFFECT OF TEMPERATURE OF FERMENTATION ON THE PRODUCTION OF  
HIGHER ALCOHOLS BY THE YEAST SACCHAROMYCES CARLSBERGENSIS -U-  
AUTHOR--(04)-GRACHEVA, I.M., VESELOV, I.YA., GAVRILOVA, N.N., KOVALEVICH,  
L.S.  
COUNTRY OF INFO--USSR  
SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 322-326  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--FERMENTATION, ALCOHOL, YEAST, SACCHAROMYCES, CARBOHYDRATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1983/1408 STEP NO--UR/0220/70/039/002/0322/0326  
CIRC ACCESSION NO--AP0054271  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054271

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEMPERATURE WAS FOUND TO BE AN IMPORTANT FACTOR IN THE PRODUCTION OF BY PRODUCTS BY SACCH. CARLSBERGENSIS XI DURING FERMENTATION, E.G. ON ACCUMULATION OF HIGHER ALCOHOLS, THE DEGREE OF CARBOHYDRATE FERMENTATION TO ETHANOL BEING ALMOST THE SAME. THE TOTAL CONCENTRATION OF HIGHER ALCOHOLS RISED 1.95 FOLD WHEN TEMPERATURE OF FERMENTATION WAS INCREASED FROM 20DEGREES TO 20DEGREES. THE FOLLOWING INCREASE OF TEMPERATURE UP TO 30DEGREES RESULTED IN A DECREASE OF HIGHER ALCOHOLS 3.6 FOLD, MAINLY AT THE ACCOUNT OF ISOAMYL ALCOHOL. THE ACCUMULATION OF ISOBUTYL AND N-PROPYL ALCOHOLS WAS NOT MUCH AFFECTED BY TEMPERATURE. THEIR MAXIMAL CONCENTRATION WAS REGISTERED AT 23 TO 25DEGREES.

UNCLASSIFIED

USSR

UDC 621.357.7:669.38

CAVRILLOVA, N. YA., LITVISHKO, N. P., OZEROV, A. M., Volograd Institute of  
Municipal Economy Engineers

"Electrodeposition of Copper-Nickel Alloy by Pulse Electrolysis"

Moscow, Zashchita Metallov, No 4, 1972, pp 490-492.

Abstract: A comparative study is performed of electrodeposition of Cu-Ni alloy from pyrophosphate electrolytes by pulsating and constant current. Up to  $Q=10$ , the permissible current density remains practically unchanged with increasing frequency; with values of  $Q$  between 10 and 100, permissible current density decreases with increasing frequency. The duty factor of the pulses has the greatest influence on the process of electrocrystallization of the alloy. Pulsed electrolysis allows a significant intensification of the process of deposition of the alloy. The yield of alloy per current is significantly greater with low duty factors (1.1-2) than when DC is used. The higher the frequency, the greater the yield per current in this case. As duty factor  $Q$  increases, the content of nickel in the alloy increases, most sharply between 1.1 and 4. Pulsed electrolysis inhibits electrocrystallization of copper more sharply than nickel, leading to enrichment of the alloy with nickel.

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USSR

UDC 621.357.7

GAVERLOVA, N. YA., and OZEROV, A. M., Volgograd Institute of Municipal Service Engineers

"Electrodeposition of Copper-Nickel Alloy"

Moscow, Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 342-344

Abstract: Electrolytic copper-nickel alloys with high corrosion resistance and an attractive appearance can be obtained from pyrophosphate electrolytes. The authors investigated the possibility of increasing the effective current density for two electrolytes suggested by P. S. TITOV (electrolytes No 1 and No 2) and for an electrolyte developed by the authors (electrolyte No 3) containing less scarce nickel (composition, g/l:  $50K_6Cu(P_2O_7)_2 + 50K_6Ni(P_2O_7)_2$

$+ 66K_4P_2O_7 \cdot 3H_2O + 25KNaC_4H_4O_6$ ). Gram-equivalent ratio  $\frac{Cu}{Cu + Ni} = 0.504$ , pH

9.3. Total copper and nickel concentration 0.944 g-eqv/l. An alloy containing ~8 percent Ni can be obtained from this electrolyte. The introduction of  $NaNO_3$  into electrolytes No 1 and 2 permits a significant increase in the

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USSR

GAVRILOVA, N. YA., and OZEROV, A. M., Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 342-344

effective current density. The introduction of  $\text{NaNO}_3$  into electrolyte No 3 likewise increases the upper current density limit, permissible for obtaining good-quality coatings, especially at a concentration of 15-20 g/l.

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USSR

UDC 632.95

BRYZGALOVA, N. I., ~~GAVRILOVA, T. B.~~, GOLOVKIN, G. V., KARAKHANYAN, L. L.

"Soviet Carrier Porochrome-1 for Gas Chromatographic Analysis of Pesticides"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov profilakt. zagryaz-  
neniya imi produktov nitaniya, kormov i vnesh. sredy (Works of the Second All-  
Union Conference on the Investigation of Pesticide Residues and Preventive  
Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp  
38-43 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N418)

Translation: It is demonstrated that the Soviet carrier porochrome-1 inocu-  
lated with hexamethyldisilazane can replace the foreign carrier chromosorb W  
when analyzing pesticides by the gas chromatographic method with an electron  
capture detector.

1/1

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USSR

UDC: 51:801

GAVRILOVA, T. L.

"Concerning the Structure of a Grammatical Model as a Function of the Level of Analysis of the Initial Text. 1"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works), vyp. 24, Moscow, "Nauka", 1971, pp 191-225 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V608)

Translation: The paper describes a certain regular method of constructing generating grammars on the basis of consideration of a text with a given grammatical structure. A sequence of grammars is constructed which is obtained at various levels of text analysis such that each succeeding level of analysis contains certain additional information as compared with the preceding level. Consideration is given to the kinds of languages generated by grammars constructed in this way, and to the way in which each of these languages relates to the text used as the basis for construction of the grammars. Author's abstract.

1/1

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Acc. Nr: AP0037228

G

Ref. Code: UR 0391

PRIMARY SOURCE: Gigiyena, Truda i Professional'nyye  
Zabolevaniya, 1970, Nr 2, pp 14-17

HYPOTHALAMIC NEUROSECRETION AND THE STATE OF SUPRARENALS  
IN DOGS EXPOSED TO VIBRATION

Kiseleva, V. I.; Gul'yants, E. S.; Ellanskiy, Yu. G.;  
Gavrilova, T. M.

Summary

The response of hypothalamo-hypophysial-adrenal system to the effect of whole-body vibration (with frequency of 25 per/sec, vertical amplitude of 0.30 mm and horizontal one — of 0.13—0.14 mm) applied daily for one hour over different time-intervals (3, 10, 20, 50 and 90 days) was studied in 15 dogs through tracing neurosecretory material in the hypothalamus and micrometry of neurons, as well as by analyzing histochemically lipoids, ascorbic acid and chromophil elements in the adrenal glands. Vibration was found to produce after different time-intervals qualitatively dissimilar shifts in the hypothalamic neurosecretion function. Alternation of a stronger and weaker functional activity of neurons reflects the development of a phasic state. Final adaptation of hypothalamic neurosecretion to test conditions takes place by the 90th day of the observation. By this time the activity of the system under study proceeds at a higher functional level.

D.n.

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REEL/FRAME  
19730152



GAVRILOVA, V. A.

UNCLASSIFIED

SECTION V SUB-SECTION A

Name: Institute of Photosynthesis, Pushchino  
Description:

PCS-89  
JUNE 71

(U) During this quarterly reporting period, one new article was

located from the Institute of Photosynthesis in Pushchino. On the basis of this 1970 article on plant growth, it was possible to associate three new persons with the institute: S. G. Khruslova, V. L. Shmeleva, and Ye. F. Yegorova (32).

To the present time it has not been possible to identify very many persons with the institute; however, the complete listing of staff members identified to

date is given below:

ALL STAFF OF PHOTOSYNTHESIS

- Akhilova, Ye. A.
- Gavrilova, V. A.
- Khruslova, S. G.
- Lebedev, A. Ia
- Hakarov, A. D.
- Mol'yan, A. N.
- Mukhin, Ye. N.
- Olovyanishnikova, G. D.
- Popova, N. B.
- Prokhorova, L. I.
- Sadovnikova, N. D.
- Shmeleva, V. L.
- Sidorov, A. N.
- Serikov, L. F.
- Stolovitskiy, Yu. N.
- Supovtsev, V. Ia.
- Yegorova, Ye. F.
- Yevstigneyev, V. B.

И ИНИЦИАЦИОН

USSR

UDC 621.785.661.65

KUZ'MICHEV, Yu. S., LUPAKOV, I. S., BOROK, B. A., and GAVRILOVA, V. K.,  
Central Scientific Research Institute of Ferrous Metallurgy imeni I. P.  
Bardin

"Investigation of the Effect of Boron on the Thermal Conductivity and Thermal  
Expansion of Titanium"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug 70, pp 78-82

Abstract: Results are presented of an investigation of the effect of boron  
on thermal conductivity and linear expansion of titanium. The investigation  
was carried out by the comparative method using samples containing 1, 2, 3, and  
4 wt. % boron. Boron increased the thermal conductivity of titanium. The  
thermal conductivity of titanium with boron, derived experimentally was some-  
what higher than the rated one based on the heterogeneity of the alloy and  
if it is considered that the alloy consists of a solid boron solution in  
titanium and titanium diborides. The coefficient of linear expansion of  
titanium decreased appreciably with the introduction of boron into it.

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USSR

UDC 632.95

BERIM, N. G., ~~GAVRILOVA, V. P.~~, KOZLOVSKAYA, V. I., and RADISHCHEVA, D. F.

"On Combined Employment of Rogor and Benzimidazole or 5-Aminobenzimidazole Against Cabbage Pests"

Zap. Leningr. s.-kh. in-ta (Notes of Leningrad Agricultural Institute), 1972, 180, pp 20-27 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14N446 by T. A. Belyayeva)

Translation: Spraying cabbages with an 0.3% solution of Rogor during the mass pedogenesis period cuts down the numbers of spring cabbage fly by 87%, but adversely affects the plants' physiological condition: ascorbic acid content declines and photosynthetic activity lessens. Under the influence of benzimidazole (I) and 5-NH<sub>2</sub>-I there is an increase in the resistance to Rogor both of the plant and of the insect pest. The optimum variant is simultaneous application of Rogor and I or 5-NH<sub>2</sub>-I. A significant rise in the resistance of insects was found when plants were pretreated with benzimidazole solutions and subsequently sprayed with Rogor.

1/1

USSR

UDC 669.71:620.172.251.226

VOROB'YEV, A. Z., GAVRILOVA, Ye. A., DOTSENKO, A. M., and YEKIMENKOV, L. N.

"On the Form of Fatigue Curves for Some Aluminum Alloys"

Moscow, Zavodskaya Laboratoriya, Volume 7, 1971, pp 832-834

Abstract: Although the initial fatigue process which terminates in the formation of macro cracks is relatively insensitive to the frequency of the applied strain, this is not true of the subsequent stage, the propagation of the cracks to destruction. In addition to frequency, other factors such as periodic overload and long-term exposure to higher temperatures were found to have different effects on the durations of the two stages in the fatigue process. In general, the equations normally used to describe the complete process of fatigue breakdown, e.g.,  $N (\sigma - \sigma_R)^m = \text{constant}$ , describe the process of crack formation fairly accurately, but do not reflect the effect of various factors on the second process.

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6 Steel

USSR

BLISOUK, A. I. In: *Journal of Applied Chemistry*, Vol. 33, No. 10, p. 1800-1802, 1960, 12 refs. Inorganic Chemistry, Kiev, Ministry of Coal and Fuel Industry.

"Investigation of the Corrosion Properties of Stainless Steels Modified by Cerium and Mirconian"

Kiev, Ukrainianskii Khimicheskiy Zhurnal, Vol. 33, No. 10, Aug. 1960, p. 1800-1802.

Abstract: A potentiodynamic method was used to study the effect of cerium modification of stainless steels by mirconian and cerium ads on their corrosion properties in solutions of hydrochloric and nitric acid, and in sulfuric acid with hydrazoic acid admixt at room temperature and higher. The beneficial effects of the modifier on the corrosion resistance of type 304 stainless steel and the nature of the passive film were investigated. It was found that a slight positive effect on the corrosion resistance of 304 stainless steel steels obtained by adding cerium while the addition of cerium had a slight beneficial effect on the corrosion resistance of 304 stainless steel in sulfuric acid and in a mixture of nitric and hydrazoic acids, modified cerium increases the stability of the passive state in all grades of stainless steel studied.

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USSR

UDC: 548.5

FESENKO, Ye. G., ~~GAVRILYACHENKO, V. G.~~, SPINKO, R. I., MARTY-  
NYENKO, M. A., GRIGOR'YEVA, Ye. A., FERONOV, A. D., Rostov  
State University

"Growth of Lead Titanate Crystals and Investigation of Their  
Domain Structure"

Moscow, Kristallografiya, Vol 17, No 1, Jan/Feb 72, pp 153-157

Abstract: A method is described for growing laminar  $PbTiO_3$   
crystals in the  $PbO-TiO_2-B_2O_3$  system, and the results of a  
study of the domain structure by the optical method and the  
method of etching are presented. In numerous experiments on  
crystal growing in this system, it was found that lead tita-  
nate sometimes crystallizes in the form of transparent plane-  
-parallel plates with a perfect {100} face. Experiments  
showed that the yield of perfect laminar crystals depends on  
the temperature gradient with respect to height in the melt,  
and the cooling rate. The optimum conditions are less than

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USSR

FESENKO, Ye. G. et al., Kristallografiya, Jan/Feb 72, pp  
153-157

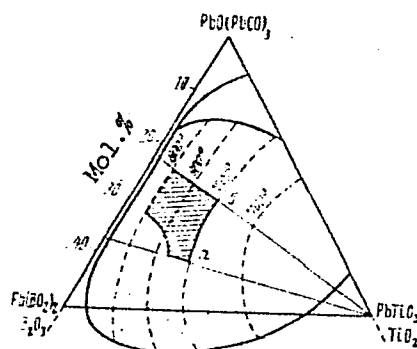
20 deg/hr for the cooling rate, and less than 20 deg/cm for the vertical temperature gradient with an approximate ratio of 1:1 between these parameters. The region of laminar crystal growth is shown by the shaded portion on the phase diagram. It was found that observation of optimum conditions gives fairly large crystals (up to 1.5 cm<sup>2</sup>) with thicknesses from 10-15  $\mu$  to 1-1.5 mm. The domain structures of the crystals are classified. Etching figures are shown which correspond to 180° domain configurations, as well as to large monodomain regions with stable antiparallel domains in the surface layer. Some of the particulars of the phase transition are discussed. Four figures, bibliography of eighteen titles.

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USSR

FESENKO, Ye. G. et al., Kristallografiya, Jan/Feb 72, pp 153-157



Phase diagram of the PbO-B<sub>2</sub>O<sub>3</sub>-TiO<sub>2</sub> system and the region of lamellar crystal growth (shaded area)

3/3



1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--SPONTANEOUS POLARIZATION AND COERCIVE FIELD OF LEAD TITANATE -U-

AUTHOR--(04)--GAVRILYACHENKO, V.G., SPINKO, R.I., MARTYENKO, M.A., FESENKO, YE.G.  
COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1532-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--LEAD COMPOUND, TITANATE, ELECTRODE, CURIE POINT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3003/0161

STEP NO--UR/0181/70/012/005/1532/1534

CIRC ACCESSION NO--AP0129417

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129417

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPONTANEOUS POLARIZATION, P SUBS  
EQUALS 75 MICROCOULOMBS-CM PRIME2 AND THE COERCIVE FIELD, E SUBO EQUALS  
6.75 KV-CM. ON REPOLARIZATION IN STRONG FIELDS, ALPHS DOMAINS ARE  
FORMED, WHICH SPREAD PROGRESSIVELY OVER THE ENTIRE SURFACE OF THE  
ELECTRODE. THE TEMP. DEPENDENCE OF SPONTANEOUS POLARIZATION SHOWS THAT  
WITH INCREASING HEATING, P SUBS DECREASES MONOTONICALLY TO SIMILAR TO  
50PERCENT OF ITS VALUE AT ROOM TEMP., AND AT THE CURIE POINT THE JUMP IS  
40 MICROCOULOMBS-CM PRIME2. FACILITY: ROSTOV.-NA-DONU GOS.  
UNIV., ROSTOVON DON, USSR.

UNCLASSIFIED

USSR

UDC 616.61-002.151-02

AGAFONOV, V. I., Maj Gen Med Serv, Docent; LEV, M. I., Col Med Serv; NOSKOV, F. S., Lt Col Med Serv, Candidate of Medical Sciences; KONIKOVA, R. Ye., Candidate of Biological Sciences; YELIGULASHVILI, R. K., Candidate of Medical Sciences; GAVRILYUK, B. K., Doctor of Medical Sciences; KULIKOV, I. A., Lt Col Med Serv; YEFIMOV, L. S., Lt Col Med Serv; SERGEYCHIK, I. I., Capt Med Serv; BELYAYEVA, H. S.

"Etiological Decoding of an Outbreak of Hemorrhagic Fever With a Renal Syndrome"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 9, Sep 71, pp 46-49

Abstract: In June and July 1970, in the southern area of Khabarovskiy Kray, an outbreak of hemorrhagic fever with a renal syndrome (HFRS) occurred among workers employed on construction work and housed in a tent camp located on a hill surrounded by swampy meadows. Despite repeated rodent extermination, the camp area was infested with rodents and ticks. Relocation of the workers to a nearby village halted the outbreak. Only one of the 34 hospitalized workers died. The onset of the

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SSR

AGAFONOV, V. I., et al, Voyenno-Meditsinskiy Zhurnal, No 9,  
Sep 71, pp 46-49

disease was acute, and fever of 39-41°C lasted 3-15 days. Renal and cardiovascular insufficiency developed in five patients. The clinical picture was atypical, suggesting both HFRS and leptospirosis. After test for *Leptospira* proved negative in all patients, two types of tests for hemorrhagic fever antigens were performed: indirect hemagglutination inhibition and agglutination tests, sheep erythrocytes sensitized with antibodies against the 10-10 strain of hemorrhagic nephrosonephritis (HNN) were used. All tests were positive. The fluorescence tests yielded green granular fluorescence in spleen smears. It is concluded that the green granular fluorescence is specific for HNN, and that the granules represent areas of replication of the HNN virus.

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GAVRILYUK, B.K.

MEDICINE

VORONKO-VEDISTINSKIY ZHURNAL, NO. 4, 1970, pp. 67-71  
USE OF INDIRECT HEMAGGLUTINATION REACTION FOR DETECTION AND IDENTIFICATION OF THE VIRUS OF EPIDEMIC HEMORRHAGIC FEVER (EHF)

by  
E. S. Novkov, Lt. Col. of Med. Serv.,  
B. K. Gavrilyuk

In spite of the solution of the viral etiology of EHF in principle, until now no sufficiently reliable method could be worked out for its laboratory diagnostics. However, as the researches of recent years showed, the method of fluorescent antibodies can be used for these purposes (A.P. Polyayeva et al., 1965). With its help we could isolate the virus of EHF, and could passage it in a one-layer culture of the renal cells of human embryo.

In the present communications data are presented on the elaboration of the method of obtaining active preparations of red cells sensitized with antibodies against EHF virus, and their use in an indirect hemagglutination test (IHT) for the detection of homologous viral antibodies in tissue cultures. The experiments were made with the "Viroflavov" strain of EHF virus which was isolated from a patient's blood.

The preparation of red cells was based upon sensitization of fixed red cells with antibodies with the aid of the bifunctional compound dihydrofluorite-4, 4' dimethylolene-bis-diazotium. From hyperimmune serum obtained by immunization of rabbits with killed-veter EHF virus according to the method of Finger and Hunter (1962) electrophoretically homogeneous gamma-globulin was isolated with Konig's adsorbent method. Red cells were fixed with mercuric ac-

ording to the method which we have elaborated. For this purpose, red cells from sheep's fresh defibrinated blood were washed twice in a 0.15 M sol. of NaCl. Their sediment was added to the acetone solution (0.15 M sol. of NaCl). Their sediment was added to the acetone solution (0.15 M sol. of NaCl) ... 2 ml; chemically pure acetone ... 2.5 ml; ... 7.6 - 7.7) in such an amount that a 2% suspension can be obtained in the reagent mixture. The fixation was made with constant stirring on the magnetic mixer for 30 minutes at room temperature. Then, the red cells were washed 10 times in physiological solution by centrifugation at 7000 rpm for 10 minutes with subsequent suspension in the washing fluid. The washed red cells were finally suspended in 0.01 M phosphate buffer solution (PBS) which contained 0.15 M NaCl, pH 7.2 - 7.4, as a 30-40% suspension. No mercurifluorite was added (final concentration 1:10,000) and it was stored at 4°C. Before use, the fixed red cells were once or twice washed in PBS, and suspended in the fixed red cells were once or twice

dark bottles at the temperature, in such a condition, its activity did not change in 2 years (time of observation, which was confirmed by titration with Scheffer scale solutions).

For the combination of antibodies ... solution of gamma globulin was prepared in PBS, pH 7.2 - 7.8 which was heated 15 minutes at 56°C. To the gamma-globulin solution red-cells suspension was added to a final concentration (5%), and then the prescribed amount of the aqueous sol. of bis-diazotium salt. The latter was prepared directly before its use. For an hour the mixture stood at room temperature with mechanical stirring.

USSR

UDC 616.61-002.26:612.118.221.2

NOSKOV, F. S., Lt Col Med Serv and GAVRILYUK, B. K.

"The Use of the Indirect Hemagglutination Reaction for Detection and Identification of Hemorrhagic Nephroso-Nephritis Virus"

Moscow, Voenno-Meditsinskiy Zhurnal, No 4, 1970, pp 67-71

Abstract: Fluorescent antibodies against hemorrhagic nephroso-nephritis virus (HNW) were obtained from hyperimmune rabbit serum. Erythrocytes were sensitized with fluorescent antibodies and a preparation for the indirect hemagglutination reaction was obtained. This preparation was specific and efficacious with HNW antigen in solution. It was concluded that the indirect hemagglutination inhibition reaction may be used for identification and titration of antibodies to hemorrhagic nephroso-nephritis virus. This is a possible practical method of serodiagnosis of hemorrhagic fever.

1/3

1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--INVESTIGATION OF REPRODUCTION OF VIRUS OF HEMORRHAGIC  
NEPHROSONEPHRITIS, HEMORRHAGIC FEVER WITH RENAL SYNDROME BY MEANS OF THE  
AUTHOR--(04)--NOSKOV, F.S., GAVRILYUK, B.K., YERMAKOV, N.V., AVDEYENKO, M.M.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 2, PP 225-231

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMORRHAGIC FEVER, FLUORESCENT ANTIBODY, TISSUE CULTURE, BLOOD  
SERUM, GAMMA GLOBULIN, SYNDROME, NEPHRITIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0739

STEP NO--UR/0402/70/000/002/0225/0231

CIAC ACCESSION NO--AP0108945

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0108945

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DYNAMICS OF REPRODUCTION OF VIRUS OF HEMORRHAGIC NEPHROSONEPHRITIS, HEMORRHAGIC FEVER WITH RENAL SYNDROME (HNN-HFRS) IN HUMAN EMBRYO KIDNEY CELL CULTURES WAS STUDIED BY MEANS OF INDIRECT AND DIRECT FLUORESCENT ANTIBODY TECHNIQUE WITH COUNTERSTAINING OF THE BACKGROUND. SPECIFIC FLUORESCENT GAMMA GLOBULINS AGAINST HNN-HFRS VIRUS HAVE BEEN PREPARED FOR THE FIRST TIME FROM HYPERIMMUNE RABBIT SERA; THEY ARE HIGHLY SPECIFIC, HAVE GOOD STAINING ACTIVITY AND MAY BE USED FOR LABORATORY DIAGNOSIS OF HNN-HFRS.

UNCLASSIFIED



1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--ABSENCE OF THE 11 S COMPONENT IN GLOBULINS OF WILD SPECIES OF SOJA  
HISPIDA -U-  
AUTHOR--(03)-GAVRILYUK, I.P., SATBALDINA, S.T., KONAREV, V.G.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1229-31  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PLANT PHYSIOLOGY, GLOBULIN, PROTEIN  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3005/1668 STEP NO--UR/0020/70/190/005/1229/1231  
CIRC ACCESSION NO--AT0133573  
UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AT0133573  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEEDS FROM 14 SPECIMENS OF  
CULTIVATED SOYBEAN PLANTS AND 13 OF WILD VARIETIES WERE USED AS PROTEIN  
SOURCE. THE EXTD. PROTEIN MASS WAS DIALYZED AND SUBJECTED TO  
IMMUNOELECTROPHORETIC ANAL. THE SALT AND WATER EXTRACTABLE FRACTIONS OF  
THE SEED PROTEINS FROM THE WILD PLANT VARIETIES LACK THE 11 S FRACTION  
WHICH IS PRESENT IN THE CULTURED VARIETIES. THE SEEDS OF G. USSURIENSIS  
CONTAIN A PROTEIN THAT IS CLOSE IN STRUCTURE TO THE 11 S COMPONENT OF  
GLYCINE MAX GLOBULINS AND POSSIBLY ACTS AS ITS PRECURSOR.  
FACILITY: VSES. INST. RASTENIEVOD IM. VAVILOVA, LENINGRAD, USSR.

UNCLASSIFIED

AA0044630- GAVRILYUK M.A. UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

241530 DIGITAL BRIDGE BALANCED REGISTER BY REGISTER  
characterized by inclusion of "OR" gates.

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It contains null-unit (1), code-resistance converter (2), and memory register (3) consisting of triggers (4-8), valves (9-13) connected to inputs of "zero" adjustment for triggers, and valves (14-18) connected to inputs of "unit" adjustment for triggers. It contains also clock pulse generator (19) connected to control unit (20), digital display indicator (21) and circuit of "OR" gates (22-29). When triggers (4-8) are "zero" adjusted, the outputs of first "OR" gates (22-25) will be at zero potential, and the outputs of second "OR" gates (26-29) will be at negative potential.

Valves (9-18) pass the impulses incoming from outputs (30) and (31) of control unit (20) only if they are also given zero potential from "OR" gates.

At the beginning of measuring cycle the impulse from output (31) adjusts to "unit" trigger (4) of the highest register (because only valve (14) receives zero potential from the gate "OR" (21). Afterwards on the output of gate "OR" (22)

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19771318

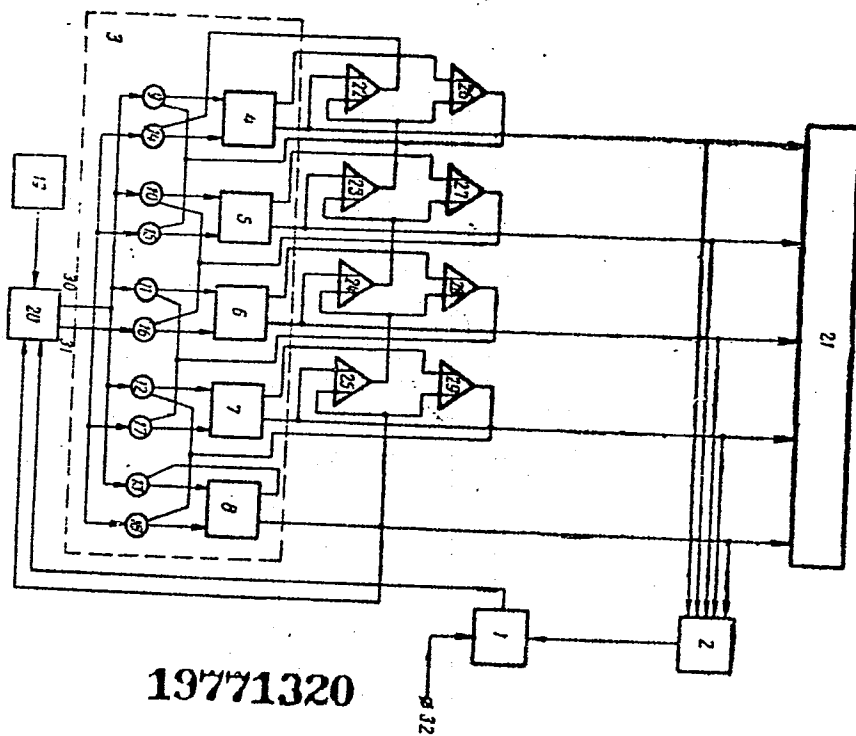
AA0044630

appears negative potential and of gate "OR" (26) zero potential which prepares valves (9) and (15). If the resistance being measured and connected to the input (32) of the null-unit is greater than those stored in memory register (3), then, during the passing of the pulse from generator (19), the control unit adjusts through valve (15) the trigger (5) to "unit". If the resistance is smaller than those stored in memory register, then the control unit gives impulses simultaneously on outputs (30) and (31) adjusting trigger (5) to "unit" and trigger (4) to "zero". Afterwards, on the output of "OR" gate (23) appears negative potential which, through gates (22) and (26), closes valves (14), (9) and (15), whereas output of "OR" gate (27) acquires zero potential which opens valves (10) and (16). In the next step, trigger (6) will be "unit"-adjusted and adjustment of trigger (5) will depend on the result of comparison of the resistance being measured with the output resistance of converter (2), and so on. When trigger (8) becomes "unit"-adjusted, its output will send a signal of the termination of the measuring process.

26.1.68 as 1212946/18-10. M.A. GAVRILYUK et al.  
LVOV LENIN ORDER POLYTECHNIC. (19.9.69). Bul 14/  
18.4.69. Class 2le. Int.Cl.G 01 r.

19771319

AA0044630



3/4

19771320

gc

AA0044630

AUTHORS: Gavrilyuk, M. A.; Kotlyarov, V. L.; Sogolovskiy, Ye. P.

L'vovskiy Ordena Lenina Politeknicheskoy Institut

4/4  
19771321

AA0044815

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

243711 STEP-BY-STEP BALANCING A.C. BRIDGE for measuring parameters of impedance where for simplifying the search for the minimum of unbalance signal after every step of any of the higher decades, a test step is made by the lowest element of the subsequent decade, the signs of increment in un-balance signal are compared, and even if one of the signals is positive, the previously switched on element of higher decade is reset. If both signs are negative, then the element of the higher decade is left switched on.

17.7.67 as 117395 3/18-10.M.A.GAVRILYUK & E.P.  
SOGLOVSKII. L'VOV POLYTECHNIC INST.(26.9.69)  
Bul 17/14.5.69. Class 2le. Int.C1.G 01 r.

AUTHORS: Gavrilyuk, M. A.; Sogolovskiy, Ye. P.  
L'vovskiy Ordena Lenina Politekhnicheskiy Institut

19771665

USSR

UDC 621.791.053:620.192.41:539.3

PROKHOROV, N. N., Doctor of Technical Sciences, PROKHOROV, M. N., Candidate of Technical Sciences, and GAVRILYUK, M. N., Engineer

"The Nature of Deformation of Metals during Crystallization in Welding"

Moscow, Svarochnoye Proizvodstvo, No 6, 1971, pp 5-9

Abstract: A study was made of the concepts of the deformation of metals in the area of the solidus temperatures and a description is given of the specific features of the process of deformation of metals in a welded joint from the standpoint of the deformation of discrete media. An analytic solution is presented to the problem of the deformation ability of solid-liquid metals as applicable to the equilibrium crystallization process. Calculations of the deformation ability of metals in the brittleness temperature interval are performed, allowing the influence of the form and dimensions of crystals as well as the relationship of volumes of existing phases to be considered. The question of the redistribution of deformations in the transitional area, i.e., upon transition from the two-phase to the one-phase state, is analyzed. The phenomenon of concentration of deformations, resulting from chemical and physical heterogeneity of boundaries, is described, and the concept of the non-deformed complexes of crystals is introduced.

1/1

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USSR

UDC 539.121.72/75

VISHNEVSKIY, I. N., GAVRILYUK, V. I., KUPRYASHKIN, V. T.,  
LATYSHEV, G. D., MAKOVETSKIY, YU. V., and KHALOV, V. G., In-  
stitute of Nuclear Research Academy of Sciences, Uk-  
rainian SSR

"Annihilation of Positrons in Copper and Brass Subjected to  
Different Heat Treatments"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 18, No 10, October  
1973, pp 1599-1604

Abstract: Using a high-resolution magnetic spectrometer, the  
authors find the distributions of the annihilation quanta by  
energy  $Q(E)$  and the distribution of electrons by impulses  $n$   
( $p_z$ ) in samples of copper and brass subjected to different  
heat treatments. They find that for the annealed samples of  
copper and brass, broader distributions are produced for  $Q(E)$   
and  $n(p_z)$  than for the quenched ones. This effect may be

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USSR

VISHNEVSKIY, I. N., et al., Ukrainskiy Fizicheskiy Zhurnal, Vol 18, No 10, Oct 73, pp 1599-1604

used for studying the influence of the technological procedure of producing the samples on their properties. After defining the problem in the introduction, the authors give a detailed account of the method used in the investigation, after which they analyze the results. The article contains 8 figures and 6 bibliographic references.

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USSR

UDC: 539.163.546.662

GAVRILYUK, V. I., GROMOV, K. YA., KLYUCHNIKOV, A. A., KUPRYASHKIN, V. T., LATYSHEV, G. D., MAKOVETSKIY, YU. V., and FEOKTISTOV, A. I.

"Studying the Internal Conversion Electron Spectrum of  $^{146}\text{Gd}$ "

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 37, No 9, 1973, pp 1839-1845

Abstract: The authors study the individual sections of the internal conversion electron spectrum of  $^{146}\text{Gd}$  with the aid of a  $\sqrt{2}$  magnetic beta-spectrometer with high discrimination. This involved three problems: 1. More accurate measurement of conversion line intensity on the L-subshells of atoms for gamma-114.67, gamma-115.52, and gamma-154.58 than has been done previously in order to determine more precisely the E2-component admixture in these M1-transitions. 2. Study the possible direct transitions  $K260.19$ ,  $2^- \rightarrow 4^-$  and  $K269.28$ ,  $1^- \rightarrow 3^-$  according to the decay scheme. 3. Detect the  $K421$  and  $K576$  transitions. The results show that the calculated spectrum was more compressed than the experimental. Further study of the levels of  $^{146}\text{Eu}$  will show what is the real order of the levels.

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Optics & Spectroscopy

USSR

AGEYEV, V. A., GAVRILYUK, V. I., KUPRYASHKIN, V. T., LATYSHEV, G. D., LYUTYY, I. N., MAYDANYUK, V. K., MAKOVETSKIY, Yu. V., and FEOKTISTOV, A. I., Institute of Physics of the Academy of Sciences UkrSSR

"Study of Conversion Electron Spectrum of Nb<sup>96</sup>"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No. 8, Aug 70, pp 1614-1617

Abstract: Individual segments of the conversion electron spectrum of Nb<sup>96</sup> associated with the doublet structure of transitions found by Monaro and others are also possible according to the decay scheme of Nb<sup>96</sup> are studied. The measurements were made on the magnetic  $\beta$ -spectrometer of the type  $\pi/2$  of the Institute of Physics of the Academy of Sciences UkrSSR. The measurements showed K-line doublets of transitions in the regions 350, 720, and 810 keV and K241.3 is apparently a single line. The results of the measurements are given in a table. The energy of all transitions observed was determined with an error of  $\pm 0.3$  keV. The K-lines of the transitions 350.1 and 352.1 keV were weak and therefore only an estimate of their intensity is given. For all transitions observed,  $\alpha_K$  were determined with respect  $1/2$

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AGEYEV, V. A., et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 8, Aug 70, pp 1614-1617

to the ratios of the intensities of the conversion lines to the intensities of  $\gamma$ -rays. The values of  $\alpha_K$  for the transitions 350.1 and 352.1 were estimated. All transitions correspond to multipolarities M1 or E2. The exception was  $\gamma_{812.4}$ , for which the internal conversion ratio was less than that established from  $Tc^{96}$  decay. The ground states are evaluated on the basis of the shell model.

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GAVRILYUK, V.M.

AA0044628

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent

243685 TRANSMISSION SET OF A PULSE CODING SYSTEM.

The distributor of the data units is connected to one input of the module testing these units. The other inputs of the module testing the data units are connected to the distributor of the data units' digits. The outputs of the data units are connected to the inputs of the coding module. One input of the switching module is connected to the line module and the other one to the module checking the code. The output of the switching module is connected to the line module.

16.2.68 as 1219005/18-24.D.D.ANDREYEV et al(8.10.69)  
Bul 17/14.5.69. Class 21c, 74b. Int.Cl.G 05f,  
G 08c.

2/70

AUTHORS: Andreyev, D. D.; Milenko, E. B.; Rudenko, V. N.;  
Yurkov, V. A.; Gavrilyuk, V. M.

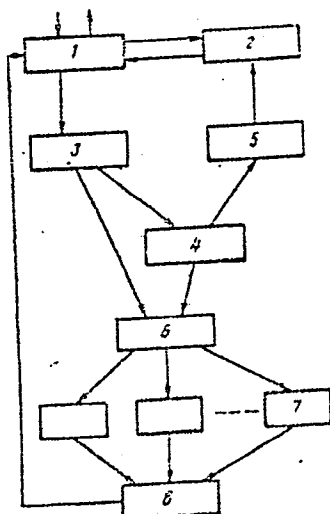
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Institut Avtomatiki

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AA0044628



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19771315

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ANODIC ISOLATION OF THE ALPHA PHASE FROM KH18N10T STEEL, AND ITS  
ANALYSIS -U-  
AUTHOR--(02)-MALTSEV, V.F., GAVRILYUK, YE.D.  
COUNTRY OF INFO--USSR  
SOURCE--ZAVOD. LAB. 1970, 36(2), 161  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--STAINLESS STEEL, ALLOY DESIGNATION, METAL  
CORROSION/(U)KH18N10T STAINLESS STEEL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1996/1897 STEP NO--UR/0032/70/036/002/0161/0161  
CIRC ACCESSION NO--AP0118859  
UNCLASSIFIED



2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118859  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STAINLESS STEEL KH18N10T IS  
DECOMP. BY ANODIC DISSOLN. IN ELECTROLYTE CONTG. 74 G KCL, 10 G  
THIOUREA, AND 19 ML CONCD. HCL-L., AT A C.D. OF 20-100 MA-CM PRIME2.  
THE ALPHA PHASE IS SEPD. FROM THE INSOL. RESIDUE WITH A MAGNET, WASHED,  
IDENTIFIED BY X RAYS, DISSOLVED IN 15PERCENT H SUB2 SO SUB4, AND  
ANALYZED. C 1.14, MN 0.50, SI 28.21, CR 4.04, FE 66.11PERCENT, AND TI  
TRACES IS THE REPORTED COMPN. OF THE ALPHA PHASE. AN AMT. OF  
0.65-0.68PERCENT ALPHA PHASE IS FOUND IN THE STEEL BY THE PRESENT  
METHOD; THE PARALLEL MAGNETOMETRIC DETN. GIVES 0.70PERCENT.  
FACILITY: VSES. NAUCH.-ISSLED. KONSTR.-TEKHNOL. INST. TRUB. PROM.,  
DNEPROPETROVSK, USSR.

UNCLASSIFIED

2/3 012

UNCLASSIFIED

PROCESSING DATE--20NOV76

CIRC ACCESSION NO--AT0120161

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF LITERATURE DATA AND LAB EXPTS., THE MECHANISM OF THE REMOVAL OF S DURING OXIDIZING FIRING OF FLUXED PELLETS FROM 2 CONTG. CONCS. CAN BE REPRESENTED BY THE FOLLOWING: (1) REACTIVE DIFFUSION OF S IN THE PARTICLE OF THE CONC.; (2) ADSORPTION OF O AND SO<sub>2</sub> AT THE SURFACE OF THE FE AND CA OXIDES; (3) SULFURIZATION OF THE METAL OXIDES AND THE SULFIDES DURING THEIR INTERACTION WITH S GASES, WITH THE FORMATION OF INTERMEDIATE COMPLEXES AND SULFATES; (4) INTERACTION OF THE SULFATES WITH AL<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, AND Fe<sub>2</sub>O<sub>3</sub>, WITH THE FORMATION OF ALUMINATES, SILICATES, AND FERRITES OF CA AND OF SO<sub>2</sub>; (5) DESORPTION OF SO<sub>2</sub> FROM THE SURFACE OF THE SOLID PARTICLES; (6) MOL. DIFFUSION OF SO<sub>2</sub> AND O BETWEEN THE SOLID PARTICLES AND IN THE BOUNDARY FILM OF THE GAS AT THE SURFACE OF THE PELLET. THE RATE OF THE REACTIVE DIFFUSION DEPENDS ON THE CONC. GRADIENT OF S IN THE PARTICLE OF THE CONC. CONSEQUENTLY, THE S CONTENT IN THE FIRED PELLETS DEPENDS ON THE UNIFORMITY OF THE DISTRIBUTION OF THE PYRITE BETWEEN THE PARTICLES OF THE CONC., ON THE COARSENESS OF THE PARTICLES OF THE CONC., AND ON THE TOTAL S CONTENT IN IT. MUCH MORE IMPORTANT THAN THESE, HOWEVER, IS THE EFFECT OF THE FIRING TEMP. ON THE RATE OF DESULFURIZATION OF THE PELLETS. INCREASING THE FIRING TEMP. FROM 400 TO 1200 DEGREES LEADS TO A SIGNIFICANT SPEEDING UP OF THE REACTIVE DIFFUSION, AND CONSEQUENTLY IN A SHORTENING OF THE INDUCTION PERIOD.

UNCLASSIFIED

3/3 012

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0120161

ABSTRACT/EXTRACT--THE OBSD. LINEAR DEPENDENCE BETWEEN THE LOGARITHM OF THE AV. RATE DURING 10 MIN FIRING AND THE INVERSE TEMP. VALUE POINTS TO AN EXPONENTIAL RELATION BETWEEN THE RATE OF REMOVAL OF S AND THE FIRING TEMP. WITH INCREASING TEMP., THE RATE OF OXIDN. OF S INCREASES. AT 400-600DEGREES, THE SULFURIZATION PROCESS OF CAO DOES NOT EXERT A STRONG EFFECT ON THE DESULFURIZATION RATE AND IS DETD. BY THE MOL. DIFFUSION OF SO SUB2. THE DESULFURIZATION RATE AT 500 AND 600DEGREES IS HIGHER THAN AT 400DEGREES. THE STAGES OF THE DESULFURIZATION PROCESS OF FLUXED PELLETS DURING OXIDIZING FIRING ARE DISCUSSED. FACILITY: CHELVABINSK. NAUCH.-ISSLED. INST. MET., CHELYABINSK, USSR.

UNCLASSIFIED

Refractory Materials

USSR

UDC 546.623'21+546.74'21):541.123.2

GAVRISH, A. M., ZOZ, YE. I., ANSIMOVA, T. A., PITAK, N. V., and KARYAKIN, L. I., Ukrainian Scientific Research Institute of Refractory Materials

"Processes Taking Place in the  $Al_2O_3$ -NiO System During Heating in Oxidizing and Reducing Media"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 8, No 6, Jun 72, pp 1175-1177

Abstract: An investigation was made of the change of phase composition of the carrier during heating in oxidizing and reducing media in the presence of a nickel catalyst. The specimens were prepared from the principal components of the carrier, electrocorundum (with 98.8%  $Al_2O_3$ , grain size  $< 50 \mu$ ), technical alumina (98.6%  $Al_2O_3$ , grain size  $< 50 \mu$ ), and nickel nitrate ( $Ni(NO_3)_2 \cdot 6H_2O$ ). The corundum and alumina specimens had additions of 1, 10, 25, and 50% nickel nitrate. With an increasing concentration of nickel nitrate, there are only weak lines of spinel at  $1500^\circ C$ ; at 10% the spinel develops at  $1200^\circ C$ , and at 25% it develops at  $900^\circ C$ . According to findings of other authors, the development of spinel was observed at  $700^\circ C$  and up to  $1500^\circ C$ . The behavior of corundum and alumina specimens in the process of

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USSR

GAVRISH, A. M., et al., Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 8, No 6, Jun 72, pp 1175-1177

temperature increase up to 1500°C and during holding in air is discussed and compared with data of other authors. One table, eight bibliographic references.

2/2

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USSR

UDC: 534.852.2

RALKO, A. V., KURSENKO, I. V., MANCHUK, K. I., GAVRISH, A. P., KOVENSKIY, B. G., "Kiev "Order of Lenin" Polytechnical Institute imeni the Fiftieth Anniversary of the Great October Socialist Revolution

"A Method of Making Ferrite Magnetic Heads"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 30, Oct 71, Author's Certificate No 317100, Division G, filed 22 May 70, published 7 Oct 71, p 184

Translation: This Authors' Certificate introduces a method of making ferrite magnetic heads by adding a vitrifying material in the working gap between ferrite cores, and heating it to the vitrification point. As a distinguishing feature of the patent, the manufacturing process is simplified by impregnating a porous material such as ash-free filter paper with the vitrifying material, drying, and placing a sheet of the impregnated material between the ferrite cores.

1/1

Ecology

USSR

GAVRISH V., Nonstaff Izvestiya Correspondent

"Hunting With a Radar Set"

Moscow, Izvestiya, 18 Mar 72, p 6

Translation: The permafrost zone, which occupies more than 1 million sq km here, and also the sea of the Arctic Basin is the "working site" of the scientists at the Institute of Biological Problems of the North, which was established in Magadan recently.

Zoologists began to fly around the tundra and forest tundra. Aerial photography made it possible to disclose the places where wild deer and elk gather and to better clarify the reasons for and the ways of their migration.

A station organized on the Anadyr' River is devoted to the study of the hitherto unutilized fish stocks of the reservoirs in the Far North. The ornithological laboratory located at the very edge of the Arctic Ocean not far from Cape Dezhnev began to study the bird world, which has more than 100 species, some of them very little known to science. Scientists began to observe the birds' transmigration routes. In addition to bird banding, the institute is using the radar method for the first time in ornithology.

1/1

USSR

UDC 621.791.927:621.921

YUZVENKO, Yu. A., ZHUDRA, A. P., FRUMIN, Ye. I., and GAVRISH, V. A., Ye. O.  
Paton Electric Welding Institute

"Features of Gas-Abrasive Wear of Composite Alloys"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 1972, pp 35-38

Abstract: Composite alloys were studied which were produced by a method involving separate introduction of hard particles of ground eutectic alloy of tungsten monocarbide and semicarbide into the multicomponent binder. Solidification produces a single or multiple-phase alloy, cementing the particles introduced before crystallization. The gas-abrasive wear of composite alloys consisting of a matrix and specially introduced grains of cast tungsten carbide occurs selectively and depends linearly on the test time. Wear of alloys decreases with increasing wear-resistant phase grains. With low and moderate angles of attack ( $10-30^\circ$ ), wear of the alloys decreases as matrix hardness increases to HV 350-400, while further increases in hardness have little influence on wear. With cast tungsten carbide grain diameters of about 2 mm, wear depends little on properties of the matrix or angle of attack.

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USSR

UDC 624.074.001.24+539

GAVRISH, V. S., SHAPOVALOV, A. P., TAMUROV, N. G., TANTSURA, V. YA.,  
Zaporozh'ye Affiliate of Dnepropetrovsk Metallurgical Institute

"Study of the Stability of Cylindrical Shells Weakened by Circular Openings  
Beyond the Elasticity Limit"

Kiev, Prikladnaya mekhanika, No. 11, Nov 71, pp 105-109

Abstract: A series of experiments on shells fabricated with high precision was conducted to determine the effect of circular cuts on the stability of cylindrical shells under axial compression. The radii of the openings, the number of openings, and their mutual position were varied in the samples tested. The samples were fabricated of thin-walled tubes obtained by high-precision rolling on a special mill. The tube material was heat-resistant steel with a diameter of 46 mm, an average radius of 22.8 mm, a wall thickness of 0.4 mm, and a length of 135 mm. A total of 200 shells were tested to obtain values of the critical forces. The critical force for shells with constant dimensionless parameters was determined on no less than three samples. The spread in the values of the experimental critical forces fluctuated within a 3% range, indicating the careful preparation of the experiments. Three values of the experimental critical

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GAVRISH, V. S., et al, Prikladnaya mekhanika, No. 11, Nov 71, pp 105-109

experimental forces were determined:  $T_c$ , the lower value corresponding to the moment of the appearance of plastic reduction at the contour of the opening in the zone of maximum perturbation of the compressing stresses;  $P_k$ , the upper value corresponding to the beginning of the development of plastic deformation over the entire weakened cross section (the growth in radial and longitudinal displacements without an increase in load); and  $P_0$ , the upper value of the critical forces without the weakening opening. In the shells tested,  $P_0 = 1.4 \cdot 10^4$  n. The parameter  $\omega = \rho^2/R\delta$  was used to evaluate the effect of weakening openings on shell stability, where  $\rho$  is the radius of the weakening opening,  $R$  is the radius of the shell, and  $\delta$  is the wall thickness. It was shown that the appearance of plastic folding at the edge of the opening for a shell with  $\omega < 1$  coincides in time with the appearance of plastic waves over the generatrix in the unweakened zones of the cell. A comparison of critical forces obtained experimentally for unweakened shells and shells weakened by small openings showed that they are practically the same (differing by no more than 4%) and therefore one can assume that  $P_0 = P_k = P_c$  for the characteristic  $\omega < 1$ . For shells with  $\omega > 1$ , a loss in stability is of a local character and also begins at the edges of the openings coinciding with the zones of maximum compressing forces. It can be concluded that for  $h/\rho > 3.5$ , where  $h$  is the distance between openings and the openings are on the same side with a constant value of  $\omega$  and  $h$  and symmetry over the height of the shell that displacements of the first pair of openings and the value of the critical force for any number of openings will be the same as for shells weakened by two openings.

# GAVRISHCHENKO, Yu.V.

# Radiation Chemistry

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USSR

UDC 612.83+612.85

GAVRIYSKI, V. S., Chair of Physiology and Biochemistry, Higher Institute of Physical Culture imeni G. Dimitrov, Sofia

"Effects of Sound Stimulation on the Human Electroretinogram"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 56, No 9, Sep 70, pp 1,215-1,218

Abstract: The length and amplitude of beta- and alpha-waves and the latent time on the electroretinogram were found to increase in human subjects under the influence of sound stimulation. The visual motor reaction time (time elapsed between a visual stimulus and the pushing of an electric button by the subject) also increased during sound stimulus. An interaction is assumed to exist between the visual and auditory centers of the cerebral cortex. The sound stimulus (duration, 5-6 min) had a stronger effect than the visual stimulus, probably because it was longer. The inhibitory effect spreading from the auditory center produced a negative induction at the visual center, resulting in a weakening of control of the visual center over inhibition in the retina. In other words, disinhibition took place in the visual center -  
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GAVRIYSKIY, V. S., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 56, No 9, Sep 70, pp 1,215-1,218

retina system. The lengthening of the visual motor reaction time indicates that a similar effect was exerted on the cortical motor center controlling this reaction.

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GAUROVSKAYA, L. K.

TRANSFORMATION OF 8-CLOMINANTHINS TO CANNABINOLS BY MEANS OF QUATERNARY  
BY AROMATIC RADICALS

Article by S.P. Terf, N.G. Sazonova, V.P. Cherepanova, L.K. Gaurovskaya, E.I. Kozlovskaya, Department of Pharmacology, Institute of Pharmacology and Toxicology, Moscow, U.S.S.R.; Institute of Experimental Medicine (IEM) Moscow, U.S.S.R. submitted 1 February 1972; pp 367-369

It was shown that quaternization of m-cholinolytic or amari by aromatic radicals leads to the appearance in it of m-cholinolytic, antispasmodic and hypotensive activity of the compounds. The m-cholinolytic activity of the radical (Pharmacology and Toxicology, No. 5, p 537, 1972).

Quaternization of nitrogen containing groupings of atropine or scopolamine leads to the appearance in it of m-cholinolytic properties. The m-cholinolytic effect was 100% after washing of the radicals (Terf, S.P., Cherepanova, V.P., Sazonova, N.G., Kozlovskaya, E.I., and Gaurovskaya, L.K., 1970).

Our investigation involved the synthesis and pharmacological activity of quaternary-ammonia derivatives of other simple amino ethers. The results of the work is to establish whether there appears a marked regulatory effect on the inhibition of amyl which is a pure m-cholinolytic. From the results of the work it is concluded that quaternization of the radical (Pharmacology and Toxicology, No. 5, p 537, 1972).

(1) mass	2
1500-1510	CH <sub>2</sub>
1480-1490	CH <sub>2</sub>
1450-1460	CH <sub>2</sub>
1420-1430	CH <sub>2</sub>
1390-1400	CH <sub>2</sub>
1360-1370	CH <sub>2</sub>
1330-1340	CH <sub>2</sub>
1300-1310	CH <sub>2</sub>
1270-1280	CH <sub>2</sub>
1240-1250	CH <sub>2</sub>
1210-1220	CH <sub>2</sub>
1180-1190	CH <sub>2</sub>
1150-1160	CH <sub>2</sub>
1120-1130	CH <sub>2</sub>
1090-1100	CH <sub>2</sub>
1060-1070	CH <sub>2</sub>
1030-1040	CH <sub>2</sub>
1000-1010	CH <sub>2</sub>
970-980	CH <sub>2</sub>
940-950	CH <sub>2</sub>
910-920	CH <sub>2</sub>
880-890	CH <sub>2</sub>
850-860	CH <sub>2</sub>
820-830	CH <sub>2</sub>
790-800	CH <sub>2</sub>
760-770	CH <sub>2</sub>
730-740	CH <sub>2</sub>
700-710	CH <sub>2</sub>
670-680	CH <sub>2</sub>
640-650	CH <sub>2</sub>
610-620	CH <sub>2</sub>
580-590	CH <sub>2</sub>
550-560	CH <sub>2</sub>
520-530	CH <sub>2</sub>
490-500	CH <sub>2</sub>
460-470	CH <sub>2</sub>
430-440	CH <sub>2</sub>
400-410	CH <sub>2</sub>
370-380	CH <sub>2</sub>
340-350	CH <sub>2</sub>
310-320	CH <sub>2</sub>
280-290	CH <sub>2</sub>
250-260	CH <sub>2</sub>
220-230	CH <sub>2</sub>
190-200	CH <sub>2</sub>
160-170	CH <sub>2</sub>
130-140	CH <sub>2</sub>
100-110	CH <sub>2</sub>
70-80	CH <sub>2</sub>
40-50	CH <sub>2</sub>
10-20	CH <sub>2</sub>

MRS 58895  
30 Jan 73  
Key: L. Gabor

Hematology

USSR

DOLETSKIY, S., Professor, GAVRYUSHOV, V., Doctor of Medical Sciences,  
BAZAKOV, L., Candidate of Medical Sciences

"Direct Blood Transfusion"

Moscow, Meditsinskaya Gazeta, 5 Feb 71, p 3

Abstract: Infusions of stored donor blood to which preservatives have been added do not always yield the desired results, because such blood loses its ability to raise the coagulability of the recipient's blood and to stimulate regenerative processes in his tissues, especially during infection. For this reason, the method of direct blood transfusion has been reintroduced at the Children's Surgical Clinic. Parents or relatives of the children serve as blood donors after they have been medically examined and their blood has been typed and matched with that of the recipient. The transfusion is done by means of a special instrument supplied with a gentle finger-type pump. If the donor shows signs of emotional strain, he or she is kept in a different room than the child, and blood is transfused with a simple syringe. The amounts range from 10 to 30 ml of blood per kg body weight of the child per transfusion, with 1-10 transfusions performed at intervals of 3-4 days. To enhance the therapeutic effect, the donors are previously immunized with  
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DOLETSKIY, S., et al, Meditsinskaya Gazeta, 5 Feb 71, p 3

staphylococcus toxoids and are given prodigiosan -- a biological stimulant of immunogenesis. Direct blood transfusions are conducted on children with severe staphylococcal infections, acute hemorrhagic osteomyelitis, purulent inflammations of lungs and pleura, ulcerative and necrotic enterocolitis, and other septic diseases. The results obtained from 135 direct transfusions performed on 34 children are promising. Most children began to improve after 1-3 transfusions. Weight loss was halted and was followed by weight gain. Sloughing of necrotic tissue as well as granulation and epithelization of wounds were accelerated. Apparently, fresh blood has special beneficial effects on tissue metabolism, endocrine glands, and the autonomic nervous system. The method of direct blood transfusion should find wide clinical applications, especially in the treatment of the newborn.

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USSR

UDC 620.193.013:669.295

TOMASHOV, N. D., CHUKALOVSKAYA, T. V., CHERNOVA, G. P., BUDBERG, P. B., and GAVZE, A. L., Institute of Physical Chemistry, Academy of Sciences USSR'

"Study of the Corrosion Resistance of Alloys of the Titanium-Tantalum--Niobium System"

Moscow, Zashchita metallov, Vol 8, No 1, Jan-Feb 72, pp 3-7

Abstract: Tantalum effectively raises the corrosion resistance of titanium-base alloys; its use, however, is limited due to cost factors and scarcity. The study of the ternary Ti-Ta-Nb system is essential for determining the feasibility of partial replacement of tantalum with the more readily available niobium. The corrosion and electrochemical behavior of the alloys was studied as annealed and quenched in a 5% HCl solution at 100°C. Analysis of the phase transformation and microstructure of the alloy indicates an isothermal section at 600°C which is characterized by a narrow region of  $\alpha$ -solid solution, a wide two-phase ( $\alpha+\beta$ ) region, and a wide region of  $\alpha$ -solid solution. At about the same average compositions, Ti-Ta-Nb alloys with single-phase structures exhibit corrosion resistance values which are one or two orders of magnitude higher than those shown by two-phase alloys. The higher resistance is characteristic of annealed Ti-Ta-Nb alloys with  
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TOMASHOV, N. D., et al., Zashchita metallov, Vol 8, No 1, Jan-Feb 72, pp 3-7

a more stable  $\beta$ -phase. Alloying of Ti with Nb and, specifically, with Ta results in a considerable increase in corrosion resistance, the total content of alloying elements, ranging from 20-40% for annealed and 10% for quenched alloys. The study demonstrates the feasibility of replacing tantalum with niobium without reducing markedly the corrosion resistance of the above alloys. (3 illustrations, 1 table, 9 bibliographic references).

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Corrosion

USSR

UDC 669.14.018.8

TOMASHOV, N. D., CHERNOVA, G. P., KALNINA, G. S., BUDBERG, P. B.,  
and GAVZE, A. L., Institute of Physical Chemistry, Academy of  
Sciences USSR

"Investigation of the Structure and Corrosion Behavior of  
Alloys of the System Ti - Ta - Cr "

Moscow, Zashchita Metallov, Vol 7, No. 4, Jul-Aug 71, pp 387 -391

Abstract : The structure and corrosion behavior of alloys of the  
system Ti - Ta - Cr , containing Cr from 2.5 -20 % and Ta up to  
30 %, were investigated, using for the analysis of the phase equi-  
librium the microstructure, roentgenophase, differential-thermal,  
and dilatometry methods and characteristic diagrams of the alloys  
subjected to hot plastic deformations in the temperature interval  
of 1,000 -500 deg. and subsequent hardening ( 1,200 -500 deg. ).  
Depending on the temperature of heat treatment, these alloys can

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TOMASHOV, N. D., et al., Zashchita Metallov, Vol 7, No 4, Jul-Aug 71,  
pp 387-391

have a homogeneous structure of a  $\beta$ -solid solution or a heterogeneous structure  $\alpha + \beta + \gamma$ . The investigation results are discussed by reference to the shown microstructure and diagrams of polythermal cuts of the alloys by different correlation of their components and effects of the alloying components on the corrosion rate. It was found that the stability region of the  $\beta$ -phase on the state diagram increases and the beginning eutectoid transformation  $\beta \rightarrow \alpha + \gamma$  shifts into the region of higher contents of alloying elements and lower temperatures by increasing the relative content of Ta to Cr relations of 1:3, 1:1, and 3:1. The corrosion rate of alloys with homogeneous structure is lower than that of alloys with heterogeneous structure by 2-10 times and more. The Ti - Ta - Cr alloys with Ta:Cr=3:1 and the Ti - Ta alloys with a Ta-content of 20% and higher are corrosion-resistant in 5% HCl at 100 deg. The Cr-alloying of Ti decreases its corrosion properties in the HCl-solution and the corrosion rate increases with increasing Cr-content, particularly for alloys with heterogeneous structure. Four illustr., eight biblio. refs.

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USSR

UDC 689.295.5'294'26

GAVZE, A. L., and BUDBERG, P. B., Moscow

"Investigation of Phase Equilibriums of the System Ti-Ta-Cr"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan-Feb 1970, pp 134-138

Abstract: Microstructural and x-ray phase analysis was used in constructing isothermal sections of the system Ti-Ta-Cr at 700 and 600° C. Four polythermal sections (titanium/tantalum ratios of 4:1, 3:2, 2:3, and 1:4) were constructed on the basis of an investigation of the phase structure of alloys of the system, data from differential thermal local x-ray spectral analyses, and determinations of temperature at the beginning of alloy meeting.

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Acc. Nr:

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Abstracting Service: 5/70  
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Ref. Code:  
UR 0370

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A70-23787 # Study of phase equilibria in the Ti-Ta-Cr system (Issledovanie fazovykh ravnovesii v sisteme Ti-Ta-Cr). A. I. Gavze and P. B. Budberg. *Akademiia Nauk SSSR, Izvestia, Metall.*, Jan.-Feb. 1970, p. 184-188. In Russian.

Study of the phase diagram of the Ti-Ta-Cr system in the region bounded by the Ti-Ta side and the section passing through the compounds TiCr<sub>2</sub>-TaCr<sub>2</sub>. Isothermal sections of the Ti-Ta-Cr system at 700 and 600 C are constructed by the methods of microstructural and X-ray phase analysis. From the results of a study of the phase structure of alloys of the system, from the findings of differential thermal and local X-ray spectral analyses, and from a determination of the melting point of the alloys by means of optical pyrometry, including certain general premises of physicochemical analysis, four polythermal sections are plotted which contain titanium and tantalum in the ratios 4:1, 3:2, 2:3, and 1:4.

A.B.K.  
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UDC 669:15.018.8:539.42:669.4

GAVZE, M. N., SOKOLOV, V. D., and DZHRINSKAYA, YE. G.

"Effect of Lead Melt on the Character of the Failure of Some Brands of Alloyed Boiler Steel"

Vliyaniye rasplava svintsa na kharakter razrusheniya nekotorykh narok legirovannoy kotel'noy stali (cf. English above. Institute of Metallurgy, Academy of Sciences USSR), Moscow, 1970, 9 pp, ill., bibliography with seven titles (no 2361-70 Dep.) (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 31611 DEP by authors)

Translation: The article states the fundamental principles of the rational selection of alloyed steel for refining boilers and describes results of a study of the brittle failure of steel under the action of a melt of partially refined Pb. It is shown that the risk of this phenomenon can be significantly lessened by complex alloying.

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1/2 012  
UNCLASSIFIED  
TITLE--NONCONTROLLED ERROR ACCUMULATION AS SOURCE OF CONTRADICTIONS IN  
SYSTEM OF PREFERRED NUMBERS -U-  
AUTHOR--GAY, A.F.  
COUNTRY OF INFO--USSR  
SOURCE--STANDARTY I KACHESTVO, 1970, NR 3, PP 13-17  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATHEMATICAL SCIENCES  
TOPIC TAGS--QUALITY CONTROL, ERROR STATISTICS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1987/0120  
CIRC ACCESSION NO--AP0103800  
STEP NO--UR/0422/70/000/003/0013/0016  
UNCLASSIFIED



2/2 012

CIRC ACCESSION NO--AP0103800

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ANOTHER ARTICLE CONTAINING A  
MATHEMATICAL ANALYSIS OF THE SYSTEM OF PREFERRED NUMBERS. THE FIRST  
ARTICLE WAS PUBLISHED IN "STANDARTY I KACHESTVO", 1970, NO. 2.

UNCLASSIFIED

1/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--CLEAR SKIES FOR THE TU 154 -U-

AUTHOR--GAY, D.

COUNTRY OF INFO--USSR

SOURCE--VECHERNYAYA MOSKVA, JULY 30, 1970, P 2, COL 8

DATE PUBLISHED--30JUL70

SUBJECT AREAS--AERONAUTICS

TOPIC TAGS--AIR PASSENGER AIRPORT/(U)TU154 AIRCRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/0875

STEP NO--UR/9027/70/000/000/0002/0002

CIRC ACCESSION NO--AN0122919

UNCLASSIFIED

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CIRC ACCESSION NO--AN0122919

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE "TU 154" IS SOON TO UNDERGO TESTS BY THE STATE SCIENTIFIC TECHNICAL INSTITUTE OF CIVIL AVIATION GOSNIIGA. R. V. SAKACH, THE FIRST DEPUTY CHIEF OF THE INSTITUTE, HAS CHARACTERIZED THE "TU 154" AS AN AIRPLANE HAVING A FINE POWER PLANT, HIGH DEGREE OF AUTOMATION, AN ORIGINAL DESIGN OF THE WING, AND THE CAPABILITY OF TAKING OFF AIRDROMES WITH SHORT RUNWAYS AND TO FLY UNDER DIVERSE CLIMATIC CONDITIONS. THE NEW AIRLINER WILL CARRY 158 PASSENGERS AT A CRUISING SPEED OF 900 KM PER HOUR. ITS CEILING IS 13,000 METERS AND THE RANGE MORE THAN 5,000 KM. ACCORDING TO L. V. ZHOLUDEV, FIRST DEPUTY MINISTER OF CIVIL AVIATION, IT IS ANTICIPATED THAT THE "TU 154" WILL BEGIN ITS FIRST COMMERCIAL RUN IN 1971.

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