

USSR

YURKYANETS, YE. A., and MATYUSHKIN, D. P., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 75, No 3, 1973, pp 16-19

tones the greater was the activation of one and inhibition of the other external ear muscle. The response is compared to the cocking of ears by animals. Though it has no acoustic value, it is a reliable sign of attentive listening and may possibly be utilized as an index of the functional state of the auditory apparatus.

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Physiology

UDC 612.815.816

USSR

MATYUSHKIN, D. P., and SHABUNOVA, I. A.

"Effect of Imidazole on the Nerve Impulse Transmitter and Neuromuscular Transmission of Excitation (as Related to the Hypothesis of the Existence of Chemical Feedback at the Synapse)"

Leningrad, Vestnik Leningradskogo Universiteta, Vol 2, No 9, May 72, pp 97-100

Abstract: Experiments with frog sciatic nerves treated in 9 mmole imidazole per liter for 45-60 min showed that imidazole decreased the nerve response potential (NRP) to 55.5%. Duration of the ascending phase of NRP increased by 44% due to imidazole. At the same time the neuromuscular transmission and the potentiation time decreased to 82.6 and 52.5%, respectively. The obtained results indicate that imidazole inhibits the function of sodium membrane channels and inactivates part of them. The effect of imidazole is positive with respect to the neurosecretory process and negative with respect to electrogenesis. If we assume that some imidazole-containing substance acts as a mediator of feedback at the synapse, then the dual effect of imidazole can be interpreted as being regulatory in the presynapse processes. It is also possible that we are dealing here with mechanisms of positive and negative feedback at the synapse, one of which constantly maintains the synapse function, and the other tries to limit it. The obtained results are inconclusive and further experiments are needed.

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UDC 534.222.2

USSR

KINELOVSKIY, S. A., ~~MATYUSHKIN, N. I.~~ TRISHIN, YU. A.

"Convergence of an Incompressible Ring Toward the Center Under the Action of Explosion Products"

V sb. Dinamika sploshn. sredy. Vyp. 5 (Dynamics of a Continuous Medium, No. 5 -- Collection of Works), Novosibirsk, 1970, pp23-32 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9B168)

Translation: The problem of the motion of a ring of incompressible fluid under the action of explosion products is discussed. The calculation is carried out for an ideal gas with an adiabatic index  $\gamma = 3$ . The relationship between pressure and density  $p = Ap^3$  (where  $A$  is a constant) are added to the equations describing the one-dimensional motion of a gas with cylindrical symmetry.  $P = c + v$  and  $H = c - v$ , where  $v$  is velocity and  $c$  is the speed of sound, are taken as the initial functions. The equations obtained are written in dimensionless form and are solved by the modified method of characteristics. The computational results are compared with experimental data. M. N. Kochina

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USSR

UDC 621.791.011:620.192.4:669.295

MATYUSHKIN, V. A., Candidate of Technical Sciences, GORSHEKOV, A. I., Candidate of Technical Sciences, SHORSHOROV, M. KH., Doctor of Technical Sciences

"Conditions and Methods of Preventing of Crack Formation From Pores in Titanium Alloys Occurring After Welding"

Moscow, Svarochnoye proizvodstvo, No 11, 1972, pp 48-51

Abstract: A study was made of the conditions of crack formation from pores during prolonged static loading and the possibility of preventing them technologically. In the case under consideration, the cracks are arranged as a rule across the weld perpendicular to the effect of the tensile stresses. Most frequently the cracks are formed in the annular welds where the tensile stresses reach 52-57 kilogram-force/mm<sup>2</sup>. The studies were performed on the titanium alloys VT1-1, OT4, OT4-2, VT20, and VT14 in sheets 3 mm thick. Theoretical and experimental evidence is presented that the formation of cracks from pores depends on the level of the residual stresses in the welded joint, the plasticity index, and the structure of the metal. With an increase in the stresses, a decrease in plasticity, and increase in grain size of the metal, the probability of crack formation from the pores increases. A high concentration of stresses in the vicinity of the pore and an increase in the gas content (hydrogen, oxygen, and nitrogen) in the weld metal accelerates the process of crack development

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MATYUSHKIN, V. A., et al., Svarochnoye proizvodstvo, No 11, 1972, pp 48-51

from the pores with a comparatively low level of general stressed state of the welded structure. Annealing for stress relief with a comparatively small content of gas impurities is one of the basic conditions of preventing crack formation from pores in the weld metal.

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(8)

USSR

UDC 632.95

BLIZNYUK, N. K., KHOKHLOV, P. S., KVASHA, Z. N., MARKOVA, L. L., LEVSKAYA, G. S., PROTASOVA, L. D., SOLNTSEVA, L. M., MATYUKHINA, Ye. N., VARSHAVSKIY, S. A., BARANOV, Yu. I., LIBMAN, B. Ya., ZHEMCHUZHIN, S. G.

"Method of Production of Dichlorides or Dibromides of Thiophosphonic Acids or Their Bis Analog"

USSR Author's Certificate No 332095, filed 19/08/69, published 17/04/72  
(Translated from Referativnyy Zhurnal Khimiya, No 24(II), 1972, Abstract No 24N591, by T. A. Belyayeva)

Translation: Compounds of the formula  $RP(X)X_2$  (I) (R=alkyl, aryl, aralkyl; X=Cl or Br) and  $X_2P(S)A(S)PX_2$  (II) (A=bivalent hydrocarbon radical) were produced by the reaction of mono- or dihalo hydrocarbons with S, P and  $PX_3$  with heating to 250-400° in an autoclave of stainless steel or nickel in the presence of catalytic quantities of  $I_2$  or its compounds. Example. A mixture of 0.24 mole  $PhCl$ , 0.24 g-atom S, 0.16 g-atom white P, 35 ml  $PCl_3$  and 0.05 g  $I_2$  is heated at 290-330° for seven hours in an autoclave of stainless steel, the  $PCl_3$  is distilled, then vacuum distillation is used to separate I (R=Ph, X=Cl), yield 60%, B. T. 109-112°/3,  $n^{20}_D$  1.6241. Similarly, I were produced (given R, X, yield in %, B. P. in °C/mm,  $n^{20}_D$ ): 4- $ClC_6H_4$ , 1/2

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BLIZNYUK, N. K., et al., USSR Author's Certificate No 332095, filed 10/08/69, published 17/04/72

Cl, 53.5; 124-3/1.5-2, 1.6229; p-MeC<sub>6</sub>H<sub>4</sub>, Cl, 54.5, 125-7/1, 1.6120; 4-FC<sub>6</sub>H<sub>4</sub>, Cl, 72.2, 95-7/0.5, 1.6028; Ph, Br, 61, 127-130/2, 1.6850; 4-FC<sub>6</sub>H<sub>4</sub>, Br, 55, 135-8/1, 1.6758; PhCH<sub>2</sub>, Cl, 76.4, 120-3/2, 1.6150; 3-FC<sub>6</sub>H<sub>4</sub>, Cl, 108-110/1.5, 1.5908; 4-MeC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, Cl, 53.3, 126-9/2, 1.6035; 4-ClC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, Cl, 61.6, 129-133.2, m. p. 74-6°, --; 2-FC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, Cl, 61.6, 129-133.2, m. p. 48-9°, --; 2.4-Me<sub>2</sub>C<sub>6</sub>H<sub>3</sub>CH<sub>2</sub>, Cl, 47.5, 140-1.6045; 2.4-Cl<sub>2</sub>C<sub>6</sub>H<sub>3</sub>CH<sub>2</sub>, Cl, 43.4, 147-9/2, m. p. 100-1°, --. Also produced were II (X=Cl, A=CH<sub>2</sub>CH<sub>2</sub>), yield 61.5%, m. p. 92-3°. I and II are intermediate products for the production of insecticides, acarocides, fungicides and herbicides.

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USSR

UDC: 519.1

ABRAMOV, B. M., MATYUSHKOV, L. P.

"An Algorithm for Identification of Trees"

Vychisl. tekhn. v mashinostr. Nauch.-tekhn. sb. (Computer Technology in Machine Building. Scientific and Technical Collection), 1972, Sep., pp 9-17 (from RZh-Kibernetika, No 5, May 73, abstract No 5V514 by V. Zemlyachenko)

Translation: In a root tree we shall use  $\mu_j$  to denote a chain connecting the root with vertex  $x_j$ , and  $|\mu_j|$  to denote the length of this chain. The root tree may be normalized, i. e. its suspended vertices different from the root may be numbered starting from "1" so that  $\mu_j = (1, 2, \dots, |\mu_j|)$  ( $v$  is the number of suspended vertices different from the root). Such a normalized tree is uniquely determined by a sequence of  $(2v - 1)$  numbers (sequence of splicings):

Исходный текст на русском языке

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USSR

ABRAMOV, B. M., MATYUSHKOV, L. P., Vychisl. tekhn. v mashino-  
str. Nauch.-tekhn. sb., 1972, Sep., pp 9-17

In the paper abstracted here, the authors consider an algo-  
rithm for establishing isomorphism of root trees given by  
sequences of splicings. The algorithm requires  $O(v^2)$  ele-  
mentary operations (rearrangements and comparisons of pairs  
of numbers).

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= 46 =

USSR

UDC: 8.74

MATYUSHKOV, I. P., SOSKIN, L. B.

"Determination of Characteristics of Technological Decisions"

Vychisl. Tekhn. v Mashinostr. Nauch.-tekhn. Sb. [Computer Equipment and Machine Building, Scientific and Technical Collection], 1971, pp 115-116 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V591, by the authors)

Translation: A method is studied for automatic determination of the characteristics of technological decisions (objects) during automation of technological planning.

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USSR

UDC 619:616.988.6-097:636.5

KOROVIN, R. N., KREYMER, Yu. Ye., MATYUSHKOV, V. S., LUKINA, V. A., NIKITIN, Ye. Ye., and KUDRYAVTSEV, F. S., All-Union Research Institute of Fowl Diseases

"The Effectiveness of Crude Viral Vaccine Against Marek's Disease"

Moscow, Veterinariya, No 8, 1973, pp 38-39

Abstract: A turkey herpesvirus antigenically related to the virus responsible for Marek's lymphoma was grown in chick embryo fibroblasts and utilized as a vaccine. The efficacy of the vaccine was tested on 1 day old chicks immunized intramuscularly with 500 PFU in 0.2 ml during an epizootic outbreak in Latvia. Mortality due to Marek's disease was 3.2-4.5 times less among the immunized chicks than among the unimmunized controls. Although 100% protection was not afforded the immunized chicks, the economic gains from an effective vaccine are obvious and indicate the importance of prophylactic immunization.

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MATHEMATICS

Higher Algebra and Geometry & Topology

USSR

UDC 519.1

MATYUSHKOV, V. V.

M

"Recurrent Relation Connected with Graph Contraction"

Novosibirsk, Sibirskiy Matematicheskiy Zhurnal, Vol 11, No 4, July-August 70, pp 822-842

Abstract: This article considers a class G of finite, unoriented graphs  $L = (X, U)$  without loops and parallel edges, where X is the set of vertices of the graph  $L \in G$  and U is the set of edges. The set U is broken down into  $\tilde{U}$  and  $\bar{U}$ , flexible and rigid edges, such that  $U = \tilde{U} \cup \bar{U}$  and  $\tilde{U} \cap \bar{U} = \emptyset$ . The authors discuss the numbers  $h_1^j(L)$ , introduced in an earlier paper (Odnovremennoye vychisleniye kolichestv nepolnykh raskrasok verшин i chaotichnykh styagivaniy grafa (Simultaneous Calculation of Quantities of Incomplete Vertex Colorings and Partial Graph Contractions) by A. A. Zykov, in Kibernetika, No 5, 1968, pp 58-62), which he terms important in the theory of graphs and combinatorial analysis.

1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--SYNTHESIS OF OLIGOURETHANES WITH DISUBSTITUTED NITROGEN ATOMS IN  
THE MAIN CHAIN -U-  
AUTHOR-(03)-MATYUSHOV, V.F., GIRTSENKO, T.M., SINYAVSKIY, V.G.  
COUNTRY OF INFO--USSR  
SOURCE--UKR. KHIM. ZH. 1970, 36(3), 275-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ETHYL CARBAMATE, OLIGOMER, ORGANIC SYNTHESIS, ORGANIC NITROGEN  
COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3008/0904 STEP NO--UR/0073/70/016/003/0275/0277  
CIRC ACCESSION NO--AP0137932  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137932

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF CLCH SUB2 ROCH  
SUB2 CL (R EQUALS CH SUB2 CH SUB2 OR (CH SUB2 CH SUB2) SUB2 O) WITH H  
SUB2 NCO SUB2 R PRIME (R PRIME IS ME OR ET) AT 200DEGREES GRADUALLY  
INCREASING TO 150DEGREES GAVE 96-99PERCENT LOW MOL. WT. (CH SUB2 OROCH  
SUB2 NICO SUB2 R PRIME) SUBN. SIMILARLY THE REACTION OF CLCH SUB2 NCO  
WITH R PRIME2 OLL (R PRIME2 IS ME OR OU) GAVE SMALLER THAN OR EQUAL TO  
99PERCENT LOW MOL. WT. (CH SUB2 NICO SUB2 R PRIME2) SUBN.  
FACILITY: INST. KHIM. VYSOKOMOL. SOEDIN., KIEV, USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--COPOLYMERIZATION OF OLIGOESTER MALEATE URETHANES --U-  
AUTHOR--(02)--OMELCHENKO, S.I., MATYUSHOVA, V.G. M  
COUNTRY OF INFO--USSR  
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 377-80  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--COPOLYMERIZATION, ORGANIC ISOCYANATE, ETHYL CARBAMATE,  
STYRENE, IR SPECTROSCOPY, POLYURETHANE RESIN  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3007/0956 STEP NO--UR/0460/70/012/005/0377/0380  
CIRC ACCESSION NO--AP0136386  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 026

CIRC ACCESSION NO--AP0136386

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

ABSTRACT. THE REACTION OF OCNRNCO (R IS (CH  
 SUB2) SUB6, (P,C SUB6 H SUB4) SUB2 CH SUB2, OR 2,4-TOLYLENE) WITH HIO(CH  
 SUB2 CH SUB2 O) SUBN COCH:CHCO) SUBM (OCH SUB2 CH SUB2) SUBN OR IN  
 EQUALS 1, 2, OR 3) IN STYRENE SOLN. IN THE PRESENCE OF PEROXIDES GIVES  
 OLIGOPOLYURETHANES, OCNRNHCO(O(CH SUB2 CH SUB2 O) SUBN COCH:CHCO)(OCH  
 SUB2 CH SUB2) SUBN O SUB2 CNHRNCO (I), WHICH THEN ARE COPOLYMO. WITH  
 STYRENE. IR SPECTROSCOPY SHOWED THAT I REACTS WITH STYRENE TO GIVE SOME  
 GROUPS RESULTING FROM STYRENE ADDN. TO N. THIS RESULT WAS CONFIRMED BY  
 DTA OF A I-STYRENE MIXT. AND 2,4-TOLYLENE DIISOCYANATE, STYRENE  
 COPOLYMERS, WHICH HAVE II UNITS. FACILITY: INST. KHIM.  
 VYSOKOMOL. SOEDIN., KIEV, USSR.

UNCLASSIFIED



1/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--INFLUENCE OF STRUCTURE OF INITIAL COMPONENTS OF RADIATION CURING OF  
UNSATURATED OLIGOESTERS AND OLIGOESTERURETHANES -U-  
AUTHOR--(OS)-CMELCHENKO, S.I., VIDENINA, N.G., MATYUSHOVA, V.G.,  
CHERYETSOVA, I.N., PYANKOV, G.N.  
COUNTRY OF INFO--USSR

SOURCE--IND. ENG. CHEM., PROD. RES. DEVELOP. 1970, 9(2), 143-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RADIATION POLYMERIZATION, OLIGOMER, MALEIC ANHYDRIDE,  
ETHYLENE, ETHYLENE GLYCOL, PHTHALIC ANHYDRIDE, ADIPIC ACID, SEBACIC  
ACID, ETHYL CARBAMATE, THERMAL STABILITY, CHEMICAL RESISTANCE, POLYMER  
STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3002/1144

STEP NO--US/CDC/70/009/002/0141/0146

CIRC ACCESSION NO--AP0126566

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125585

ABSTRACT/EXTRACT--(U) GP-U- ABSTRACT. THE IRRADN. COPOLYMN. OF UNSATD. OLIGOESTERS AND OLIGOESTER URETHANES WAS INVESTIGATED. THE UNSATD. OLIGOESTERS WERE SYNTHESIZED FROM MALEIC ANHYDRIDE, C SUB2 H SUB4, AND DIETHYLENE GLYCOL, PHTHALIC ANHYDRIDE, AND ENDOMETHYLENTETRAHYDROPHthalic ANHYDRIDE, ADIPIC AND SEBACIC ACIDS BEING USED AS MODIFIERS. UNSATD. OLIGOESTER URETHANES OF VARIOUS FREE ISOCYANATE GROUP CONTENTS WERE PRODUCED BY INTERACTION OF OLIGOETHYLENE, OLIGOETHYLENE, AND OLIGOTRIETHYLENE MALEATES WITH TOLYLENE, DIPHENYLMETHANE, AND HEXAMETHYLENE DIISOCYANATES. THE RELATIVE CURING RATE DEPENDS ON THE STRUCTURE OF THE OLIGOMERS, ESP. THE MONOMERS. IN THE CASE OF UNSATD. OLIGOESTER URETHANES, ISOCYANATE GROUPS PARTICIPATE IN THE CURING REACTION. IN IRRADN. COPOLYMN., BOTH THE YIELD OF INSOL. FRACTION AND CONVERSION OF DOUBLE BONDS ARE HIGHER THAN IN THE PRESENCE OF PEROXIDES. PHYS. AND MECH. PROPERTIES, THERMAL STABILITY, AND H SUB2 O AND CHEM. RESISTANCE ARE, AS A RULE, HIGHER FOR POLYMERS OBTAINED DURING HIGH ENERGY IRRADN. FACILITY: INST. HIGH MOL. CHEM., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 621.378.533.9

BURAKOV, V. S., MAUMENKOV, P. A., IVANOV, V. P., and KOLOSOVSKIY, G. A.

"Study of the Passage of High-Power Laser Radiation Through an Optically Dense Plasma"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 16, No 2, Feb 72, pp 239-242

Abstract: The article describes results of an experimental study of the passage of ruby-laser radiation (density  $10^6 - 5 \cdot 10^8$  W/sq cm, duration  $3 \cdot 10^{-8}$  sec) through a quasistationary plasma with a temperature of 3-4 eV and a comparatively high absorption coefficient ( $4 - 7$  cm $^{-1}$ ). Nonlinear phenomena were found during the passage of the laser radiation through the plasma: viz., bleaching and an increase in the absorptivity of the plasma. The mechanism of the observed plasma bleaching is discussed.

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Acc. Nr. **A0048356** - Abstracting Service: Ref. Code: **F70 UR 0141**  
INTERNAT. AEROSPACE ABST.

**A70-25153 #** Observations of Jupiter, Venus and 3C 273 at the wavelengths of 2 and 8 mm (Nablizdeniia Iupitera, Venery i istochnika 3C 273 na volnakh 2 i 8 mm). V. A. Efinov, A. G. Kisliakov, I. G. Moiseev, and A. I. Muimov (Gor'kovskii Gosudarstvennyi Universitet, Gorki, USSR). Radiotekhnika, vol. 13, no. IZV VUZ, 2, 1970, p. 219-224. 15 refs. In Russian.

Results of observations carried out in May 1968, using a 22-m radio telescope. The brightness temperature of Venus, found by comparison with that of Jupiter, appeared to be equal to 290 plus or minus 25 K at 2.16 mm and 495 plus or minus 20 K at 8 mm. The densities of the radiation fluxes of the source 3C 273 at the same wavelengths are equal to  $(114 \text{ plus or minus } 14) \times 10^{-10}$  to the minus 26th W/sq m-Hz and  $(62 \text{ plus or minus } 4) \times 10^{-10}$  to the minus 26th W/sq m-Hz. The data are presented without taking into account the errors in determining the brightness temperatures of Jupiter, the latter accepted to be equal to 150 plus or minus 20 K at 2.16 mm and 144 plus or minus 20 K at 8 mm. (Author)

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REEL/FRA  
19800063

USSR

UDC 66.063.5

KOSTIKOV, V. I., MAURAKH, M. A., and NOZHKINA, A. V., Moscow Institute of Steel and Alloys

"Wetting of Diamonds and Graphite by Liquid Alloys of Iron With Titanium"

Kiev, Poroshkovaya Metallurgiya, No 1 (97), Jan 71, pp 79-82

Abstract: A study was made of the wetting of single diamond crystals and plates cut from them along the (100) facet and pyrolytic graphite. The test procedures are described and the results of the experiments are presented. The tendency of liquid iron and its alloys with titanium toward wetting diamonds is higher for the (100) facet and lower for the (111) natural facet. Pyrographite occupies an intermediate position. Introduction of more than 30% titanium into the iron improves wettability of diamonds and graphite by it. The magnitude of the contact angle of pure iron in pyrographite is 50°, and that of iron alloy with 3.9% C is about 110°. The energy of adhesion of iron to diamonds along the (100) facet is 3,160 ergs/cm<sup>2</sup>, and on the (111) facet, 2,590 ergs/cm<sup>2</sup>. The energy of adhesion to pyrographite is 2,960 ergs/cm<sup>2</sup>. It was found that titanium increases the energy of adhesion of iron to graphite and diamonds.

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USSR

KOSTIKOV, V. I., et al, Poroshkovaya Metallurgiya, No 1 (97), Jan 71, pp 79-82

Graphs are presented showing the wetting contact angle of diamonds and graphite by FeTi alloys as a function of titanium content, the variation of the wetting contact angle of diamonds and pyrographite by iron as a function of contact time for both the (100) and (111) facets, and the spreading of Fe-Ti alloys over diamonds and pyrographite as a function of Ti content.

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1/2 045 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--INFRARED ABSORPTION OF METABORATE ION IN A POTASSIUM BROMIDE  
CRYSTAL AT LOW TEMPERATURES -U-  
AUTHOR--MAURING, T. *M*  
COUNTRY OF INFO--USSR  
SOURCE--EESTI NSV TEAD. AKAD. TOIM., FUUS., MAT. 1970, 19(1), 104-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--IR ABSORPTION, ABSORPTION BAND SPECTRUM, CRYOGENIC PROPERTY,  
VIBRATION SPECTRUM, NEGATIVE ION, BORATE, POTASSIUM BROMIDE, IONIC  
CRYSTAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1996/1475 STEP NO--UR/0458/70/019/001/0104/0107  
CIRC ACCESSION NO--AP0118464  
UNCLASSIFIED

2/2 045 UNCLASSIFIED PROCESSING DATE--30OCT70  
CIRC ACCESSION NO--AP0118464  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VIBRATIONS OF THE BO SUB2 PRIME  
NEGATIVE ION WERE STUDIED AT LIQ. N AND LIQ. H TEMPS. TEMP. DECREASE  
LEADS TO A RAPID DROP IN THE ABSORPTION COEFF. OF THE COMBINATION  
FREQUENCIES UPSILON SUB3 PRIME EQUALS (0,1,1) MINUS (0,1,0) AND V SUB3  
PRIME PRIME EQUALS (0,2,1) MINUS (0,2,0), WHICH CONFIRMS THEIR  
INTERPRETATION AS HOT TRANSITIONS. A LINEAR SHIFT OF ALL BANDS TO LOWER  
WAVELENGTHS (6 TIMES 10 PRIME NEGATIVE3 CM PRIME NEGATIVE1 PER DEGREE)  
AS WELL AS THEIR NARROWING WAS OBSD. THE GAMMA SUB3 ABSORPTION BAND OF  
PRIME11 BO SUB2 PRIME NEGATIVE AND OF PRIME10 BO SUB2 PRIME NEGATIVE IS  
ACCOMPANIED BY A SATELLITE BAND, LOCATED AT 1.9 CM PRIME NEGATIVE1 TO  
LOWER WAVENOS. FROM THE PRINCIPAL BAND. THIS SATELLITE BAND IS  
ATTRIBUTED TO THE UPSILON SUB3 VIBRATION OF THE ION DIFFERENTLY ORIENTED  
IN THE CRYSTAL FIELD; THE 2 ORIENTATIONS COINCIDE WITH THE C SUB3 AND C  
SUB4 AXES. FACILITY: INST. FIZ. ASTRON., TARTU, USSR.

UNCLASSIFIED



USSR

UDC: 535.371

REBANE, K. K., SAARI, P. M., and MAURING, T. Kh.

"Hot Luminescence of Impurity Molecular Ions in Alkali-Halide Crystals"

Moscow, Izvestiya Akademii Nauk SSSR--Seriya Fizicheskaya, No 4, 1973,  
pp 848-854

Abstract: This article is a short review of the results of experimental and theoretical work published on hot luminescence (HL) in rapidly relaxing impurity centers of a crystal. Some new experimental data is given, along with discussions of some general questions. Hot luminescence is here defined as the luminescence emitted before the establishment of thermal equilibrium in the course of oscillatory relaxation of the impurity center. The differences between hot luminescence in rapidly relaxing systems and HL in slowly relaxing systems are: the possibility of interference of HL with combination dispersion; its duration -- i.e., the afterglow following instantaneous excitation; its unique extinction processes. HL is interesting because: it offers a method of studying relaxation processes; it is a component of secondary glow, which must be considered in the interpretation of experiments on dispersion; it is an independent and new component of secondary glow. Bibliography of 25.

1/1

USSR

UDC 669.721.046.4

MAURITS, A. A., MEDEUOV, Ch. K., SHADSKIY, S. V.

"Thermochemical Investigation of Ammonium Carnallite"

Tr. Vses. N-i Proyechn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 77-83. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G190 by the authors).

Translation: The integral heats of dissolution of anhydrous, dihydrate, and hexahydrate ammonium carnallite at 25° are experimentally determined. Based on the data produced, the thermal effects of the processes of dehydration and decomposition of ammonium carnallite are calculated:  $\text{NH}_4\text{Cl} \cdot \text{MgCl}_2 \cdot 6\text{H}_2\text{O} = \text{NH}_4\text{Cl} \cdot \text{MgCl}_2 \cdot 2\text{H}_2\text{O} + 4\text{H}_2\text{O} = 60.5 \text{ kcal}$ ;  $\text{NH}_4\text{Cl} \cdot \text{MgCl}_2 \cdot 2\text{H}_2\text{O} = \text{NH}_4\text{Cl} \cdot \text{MgCl}_2 + 2\text{H}_2\text{O} + 30.6 \text{ kcal}$ ;  $\text{NH}_4\text{Cl} \cdot \text{MgCl}_2 = \text{MgCl}_2 + \text{NH}_3 + \text{HCl} + 46.08 \text{ kcal}$ . 1 table, 8 biblio refs.

1/1

USSR

UDC 669.721.046.4

MAURITS, A. A., MEDEUOV, Ch. K., BERSENEV, P. D.

"Tensometric Study of Ammonium Carnallite"

Tr. Vses. N-i. Proyechn. In-ta. Alyumin., Magn. i Elektroden. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 84-89. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G191 by the authors).

Translation: Experimental results are presented from determinations of the vapor pressure over ammonium carnallite crystal hydrates and its anhydrous complex as a function of temperature. The thermal effects of the processes of dehydration and decomposition of carnallite are calculated on the basis of the data produced by a statistical method, using the isobar equations of the chemical reactions. The dependence of the equilibrium constant of dissociation of anhydrous carnallite on temperature is determined. 4 figs; 1 table, 9 biblio refs.

1/1

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70  
 TITLE--ALIPHATIC ACIDS SYNTHESIZED BY ASPOROGENIC YEASTS -U-  
 AUTHOR--(021)-MAVLANI, M.I., GULYAMOVA, N. *M*  
 COUNTRY OF INFO--USSR  
 SOURCE--UZB. BIOL. ZH. 1970, 14(2), 17-19  
 DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
 TOPIC TAGS--YEAST, BIOSYNTHESIS, PAPER CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
 PROXY FICHE NO----FD70/605008/E11 STEP NO--UR/9079/70/014/002/0017/0019

CIRC ACCESSION NO--AP0140010  
 UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--A0140010

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPN. OF VOLATILE AND  
NONVOLATILE ALIPHATIC ACIDS SYNTHESIZED BY ASPOROGENIC YEASTS (MONILIA  
CANDIDA, CANDIDA MYCODERMA, TORULOPSIS BACILLARIS, BRETTANOMYCES VINI,  
AND RHODOTORULA GLUTINIS) WAS DETD. USING PAPER CHROMATDG. THE HIGHEST  
ACID FORMING CAPACITY WAS FOUND IN M. CANDIDA, B. VINI AND C. MYCODERMA.

UNCLASSIFIED

acc. Nr.

ATO107999

Abstracting Service:  
CHEMICAL ABST..

6-70

Ref. Code

WA0425

125814m Segregation of silver during the growth of antimony telluride single crystals from a melt. Sherov, P.; Marinov, S.; Maylonov, Sh. (Fiz.-Tekh. Inst. im. Ugarova, Dzhambul, USSR). Dokl. Akad. Nauk Tadzh. SSR 1970, 13(2), 19-21 (Russ). The distribution coeff. (K) of Ag in the process of growing Sb<sub>2</sub>Te<sub>3</sub> single crystals, contg. desired amts. of Ag, was detd. with the aid of <sup>110</sup>Ag. The melt contained  $3 \times 10^{-4}\%$  Ag. The ratio C/C<sub>0</sub> at different sections of the crystal increased with the length of the crystal. The increase was most pronounced at high rates of growth, i.e. 12 mm/hr. At 6 mm/hr, K =  $2.5 \times 10^{-3}$ . GBJR

CB

18

REEL/FRAME  
19891579

USSR

UDC 547.241\*565.2.057

MAY, L. A., and PAVARE, B. G., Institute of Inorganic Chemistry, Academy of Sciences Latv. SSR

"Reaction Products of Catechol with Methylphosphonic Acid Dichloride"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 4, 1973, pp 485-490

Abstract: The reaction of pyrocatechol with methylphosphonic acid dichloride occurs via a primary or secondary phenol-dienone rearrangement [phenol  $\rightarrow$  cyclohexanedione]. Such rearrangements often accompany electrophilic and radical substitution reactions of phenols such as halogenation, nitration, alkylation, free radical oxidation, but so far no such rearrangement has been noticed in reactions of phenols with organophosphorus compounds.

1/1

USSR

UDC 541.571.546.18

MAY, L. A., Institute of Inorganic Chemistry, Academy of Sciences, Latv SSR

"Effective Charges on Phosphorus in Some Compounds"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 4, 1973, pp 394-396

Abstract: A correlation function has been developed for the 2p-electron binding energy and effective charges on the phosphorus atom. The charges were calculated by means of a combination of the Haber-Born cycle and the Kapustinskiy equation for the lattice energy. The function has the form:

$$z = 0.813 \sqrt[4]{W - 130.1.1}$$

1/1



USSR

UDC 543.422.25:547.241

MAY, L. A., and LUKEVITS, O. K., Institute of Inorganic Chemistry, Academy of Sciences Latv. SSR

"PMR Spectra of 1-Aminoethylidene-1,1-diphosphonic Acid"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 4, 1973, pp 443-445

Abstract: NMR- $H^1$  spectra (60 Mcps) of the aqueous solution of 1-aminoethylidene-1,1-diphosphonic acid taken on the instrument INM-3M-60 at room temperature are reported and discussed. In addition to water, a 1:1 mixture of water and deuterium oxide was used as well as water plus deuterium oxide plus dimethyl sulfoxide.

1/1

- 47 -

Acc. Nr: **AP0041858**

Abstracting Service:  
CHEMICAL ABST.

4/70

Ref. Code:  
UR 0366

M

89455) Structure and reactivity of hydrazine derivatives.  
 XX. Kinetics of the acid hydrolysis of carboxylic acid hydrazides. Grekov, A. P.; ~~Mansurov, O. V.~~; Malyutenko, S. I. (Inst. Khim. Vysokimol. Soedin., Kiev, USSR). Zh. Org. Khim. 1970, 0(1), 94-7 (Russ). The reaction rates, equilibrium constants, activation energies, and Arrhenius frequency factors were detd. for RCONHNH<sub>2</sub> (R = Me, Pr, MeOCH<sub>2</sub>, PhOCH<sub>2</sub>, Ph, *p*-MeOC<sub>6</sub>H<sub>4</sub>, *p*-MeC<sub>6</sub>H<sub>4</sub>, *m*-ClC<sub>6</sub>H<sub>4</sub>, *p*-Me<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, *m*-O<sub>2</sub>N-C<sub>6</sub>H<sub>4</sub>, or *p*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>) hydrolysis at 70 or 80° in 1 to 5M H<sub>2</sub>SO<sub>4</sub> solns. The structure of R has only a minor effect on the hydrolysis kinetics due to a nearly simultaneous protonization and (H<sub>3</sub>O)<sup>+</sup> addn. reaction. CPJR

CPJR

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REEL/FRAME  
19751739

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Acc. Nr:

AP0041859

Abstracting Service:

CHEMICAL ABST.

4170

Ref. Code:

U# 0.366

M

89456k Structure and reactivity of hydrazine derivatives.  
 XXI. Kinetics of the alkaline hydrolysis of carboxylic acid  
 hydrazides. Grekov, A. P.; Shevchenko, Korzhumetshava, L.  
 K.; Malyutenko, S. A.; Mavrenko, O. V. (Inst. Khim. Vyso-  
 komol. Soedin., Kiev, USSR). Zh. Org. Khim. 1970, 6(1), 98-  
 101 (Russ). The reaction rates, activation energies, Arrhenius  
 frequency factors, and reaction enthalpies were detd. of alk.  
 RCONHNH<sub>2</sub> (I), R = Ph, *p*-MeC<sub>6</sub>H<sub>4</sub>, *p*-MeOC<sub>6</sub>H<sub>4</sub>, Pr, Me, or  
 MeOCH<sub>2</sub>) hydrolysis at 25, 40, or 60°. The ionization of I in-  
 creases very rapidly with the concn. of alk. solns.; in 5% KOH,  
 90% I is ionized. The ionization hinders the attack of OH<sup>-</sup> on  
 the CO group of I. Thus, the hydrolysis rate decreases with an  
 increase in the alk. soln. concn. Electron-donating substituents  
 of R also hinder the attack of OH<sup>-</sup>, but they also decrease the  
 ionization of I. Therefore, the effect of R structure on the  
 kinetics of I hydrolysis is only slight.

CPJR

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1000

REEL/FRA  
19751740

7

1/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--OUTER SPHERE AND INNER SPHERE COMPLEXES OF COBALT II, NICKEL II,  
AND COPPER II -U-  
AUTHOR--(04)-MIRONDOV, V.YE., MAKASHEV, YU.A., MAVRINA, I.YA.,  
KRYZHANOVSKIY, M.M.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1301-4  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COBLAT COMPLEX, NICKEL COMPLEX, COPPER COMPLEX, CHLROINE,  
BROMINE, NITRATE, SULFATE, STABILITY CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3008/0943

STEP NO--UR/0078/70/015/005/1301/1304

CIRC ACCESSION NO--AP0137971

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137971

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STABILITY CONSTS. WERE DETD. FOR INNER AND OUTER SPHERE COMPLEXES OF CO(II), NI(II), AND CU(II) HEXAAQUA IONS WITH HALIDES, THIOCYANATE, SULFATE, AND NITRATE IONS. THE TENDENCY TO INNER AND OUTER SPHERE INTERACTION DECREASES IN GOING FROM CL PRIME NEGATIVE TO BR PRIME NEGATIVE. THIS IS ATTRIBUTED TO THE ELECTROSTATIC NATURE OF THE OUTER SPHERE BONDS. THE TENDENCY FOR NITRATE AND SULFATE IONS IN THE CU COMPLEXES TO ENTER THE INNER SPHERE IS SMALL AND APPROX. THE SAME. THE HIGHER STABILITY OF THE CU SULFATE COMPLEXES IS RELATED TO THE HIGH STABILITY OF INNER SPHERE SULFATE ASSOCNS. FACILITY: Leningrad. Gos. Pedagog. Inst. Im. Gertsena, Leningrad, USSR.

UNCLASSIFIED

Acc. Nr: AP0037231

M

Ref. Code: UR 0391

PRIMARY SOURCE: Gigiyena, Truda i Professional'nyye  
Zabolevaniya, 1970, Nr 2, pp 34-37

FUNCTIONAL RESPIRATORY DISORDERS IN PATIENTS WITH CHRONIC  
BRONCHITIS AND PNEUMOCONIOSIS CAUSED BY THE EFFECT  
OF THE CEREAL GRAIN DUST

Mavrina, Ye. A.

Summary

A total of 424 workers continually exposed to the effect of grain dust were examined at the elevators of the Saratov region, with 17.6% of the found to suffer from chronic bronchitis and 21.8% — from pneumosclerosis. Pneumotachometry established disturbed function of the external respiration in 69.3% of the examined, and not only in those with pulmonary pathology, but in practically healthy ones as well. A detailed spiographic investigation of the respiratory function involving determination of 10 characteristics made in 40 persons showed chronic dust-induced bronchitis in workers handling grain to lead to the development of marked respiratory insufficiency of the II and III degrees after A. G. Dembo, while noncomplicated pneumoconiosis to be accompanied by respiratory incompetence of the I degree. Disturbed function of external

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REEL/FRA  
19730155

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AP0037231

respiration is an early sign of the grain dust effect. Expiration force, maximum pulmonary ventilation and Tiffineaux index are the most sensitive tests reflecting the state of bronchial patency. In detecting functional and organic elements in deranged bronchial patency a definite significance is attached to inhalation tests with ephedrine. Spirography and pneumotachometry may be recommended for wide use in practical work. (

D. H.

2/2

19730156

USSR

UDC 621.397.61

SOROKA, Ye. Z., KHLEBORODOV, V. A., MAVRITSYN, V. G.

"Color Subcarrier Synthesizer for the PAL Color Television System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obratstsy, tovarnyye znaki, No 7, Mar 71, Author's Certificate No 295208, filed 2 Apr 69, published 4 Feb 71, p 170

Translation: This Author's Certificate introduces a color subcarrier synthesizer for the PAL color television system. The synthesizer contains a controlled quartz-crystal color subcarrier oscillator with an automatic phase control system, a module for a +25 Hz frequency shift and a frequency converter. The converted line frequency signals are sent to the converter inputs. As a distinguishing feature of the patent, the synthesizer is simplified by connecting one of the inputs of the frequency converter to a line frequency pulse source through a filter of the 227 harmonic of the line frequency, while the second input is connected to the same source through a frequency divider by four and the above-mentioned filter.

1/1

- 97 -



1/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--DESIGN CHARACTERISTICS OF PS72M MOTORS --U--

AUTHOR--(02)-MAVROMATI, G.S., NASEDKIN, L.P.

*M*

COUNTRY OF INFO--USSR

SOURCE--IZV. VUZ. SSSR ELEKTROMEKH. (USSR), NO. 2, P. 170-2 (FEB. 1970)

DATE PUBLISHED----FEB70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--ELECTRIC MOTOR, DESIGN HANDBOOK, SPEED REGULATOR,  
ARMATURE/(U)PS72M ELECTRIC MOTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3008/0313

STEP NO--UR/0144/10/000/002/0170/0172

CIRC ACCESSION NO--AP0137418

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137418

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPEED STABILISATION IN PS72M MOTORS IS ACHIEVED BY VARYING THE EXCITATION. IN THIS CASE, THE DISTORTION OF THE RESULTANT FIELD IN THE AIR GAP, GOVERNED BY THE LATERAL REACTION OF THE ARMATURE, IS RELATIVELY HIGH WITH CONSEQUENT DEGRADATION OF THE SWITCHING CAPACITY OF THE MACHINE, FOR THIS REASON, IN THE DESIGN OF SUCH MOTORS IT IS NECESSARY TO SELECT A LINEAR LOAD, ON THE BASIS OF COMMUTATION REQUIREMENTS AND NOT, AS IS USUAL, ON THE BASIS OF THERMAL EXCHANGE REQUIREMENTS WHEN USING INCREASED HEAT RESISTANT INSULATION.

UNCLASSIFIED

Nitrogen Compounds

USSR

UDC 542.91:547.362

<sup>3</sup>  
PAVROV, M. V., VOSKANYAN, E. S., SEVERINA, T. A., and KUCHEROV, V. F.,  
Institute of Organic Chemistry Imeni N. D. Zelinsky, Academy of Sciences  
USSR

"Synthesis of Diacetylenic Hydroxyamines"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, 1971,  
pp 1088-1091

Abstract: Several new types of polyfunctionally substituted diacetylenes were synthesized by the condensation of 4-hydroxy-3-alkyl(or dialkyl) amino-butyne-1 with different bromoacetylenes under Kadio-Khotkevich conditions. The highest yields of the desired products (70-90 percent) were obtained when (Ia) was condensed in methanol solution in the presence of catalytic amounts of  $Cu_2Cl_2$ , and in an aqueous solution of ethylamine with a 1.5-2 fold excess of the corresponding bromoacetylenic compounds at temperatures not higher than  $-10^{\circ}$ . Infrared spectra of these compounds contain absorption bands in the  $2200-2260\text{ cm}^{-1}$  region. They are of moderate intensity corresponding to the conjugated substituted diacetylenic group. Also found in the spectra are absorption bands corresponding to the bond vibrations of the functional groups.

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USSR

MAVROV, M. V., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, 1971, pp 1088-1091

After exhaustive catalytic hydrogenation in alcoholic solution in the presence of a Pt-catalyst, diacetylenic hydroxylamines readily absorb 4 moles of  $H_2$  (forming previously unknown aliphatic hydroxylamines (III)). No other synthetic pathways were known for these products.

2/2

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1/2 025

TITLE--LINEAR ORGANOSILICONE  
CARBON FUNCTIONAL TERMINAL  
AUTHOR--(031)-MAY, L., FISERS, G., TSERETELI, I.YU.

UNCLASSIFIED  
COMPOUND OLIGOMERS AND POLYMERS CONTAINING

PROCESSING DATE--30OCT70

CCOUNTRY OF INFO--USSR

*M*

SOURCE--USSR 262,394  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--26JAN70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--OLIGOMER, CHEMICAL PATENT, SILOXANE, POLYMER, HYDROXYL  
RADICAL, ORGANOMAGNESIUM COMPOUND, SACCHARIDE

CCNTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/1450

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128849

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0128849

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPOD., WITH TERMINAL GROUPS CONTG. LARGER THAN OR EQUAL TO 3 OH GROUPS BOUND WITH C ATOMS, ARE PREPD. BY REACTION OF AN ALPHA, OMEGA, DICHLOROPOLY(DIALKYL (ARYL, ALKENYL)SILOXANE) POLYMER HOMOLOG MIXT. WITH AN ORGANOMAGNESIUM COMPO., RMGX, IN WHICH R IS ALPHA FULLY ACETYLATED RESIDUE OF ANY MONO OR OLIGOSACCHARIDE, AND X IS CL OR BR. DIACETYLATION IS CARRIED OUT BY KNOWN METHODS. FACILITY: SSR AND SPECIAL CONSTRUCTION BUREAU OF CHEMIZATION OF THE NATIONAL ECONOMY, LATVIAN SSR AND SYNTHETIC RUBBER.

1971 ACCEPTEB

1/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--MECHANISM OF THE FORMATION OF DIMETHYLSILAZINE POLYMERS -U-

AUTHOR--(02)-RUMBA, G., MAY, L.

*M*

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS. KIM. SER. 1970, (11), 90-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANOSILICON COMPOUND, AMMONIA, METHANE, THERMAL EFFECT, POLYMERIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1999/1868

STEP NO--UR/0464/70/000/001/0070/0095

CIRC ACCESSION NO--AP0123656

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--230CT70

2/2 025

CIRC ACCESSION NO--AP0123656

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIMETHYLSILAZANE (I, A MIXT. OF CYCLIC TRIMERS AND TETRAMERS) WAS HEATED WITH 0.5-10 WT. PERCENT KOH AT 200-385 DEGREES. EVOLUTION OF NH SUB3 WAS FOLLOWED BY EVOLUTION OF CH SUB4 YIELDING I POLYMERS WHICH WERE ULTIMATELY CROSSLINKED. CH SUB4 EVOLUTION INCREASED WITH TEMP. AND DURATION OF HEATING AND DETERMINED THE DEGREE OF POLYMN. A MECHANISM WAS PROPOSED POSTULATING FORMATION OF AN ACTIVE INTERMEDIATED FROM A TRIMER AND A TETRAMER, WITH LOSS OF ACTIVE INTERMEDIATED FROM A TRIMER AND A TETRAMER, WITH LOSS OF NH SUB3 BY DISPLACEMENT WITH THE OH AND SUBSEQUENT POLYMN. THROUGH THE SI ATOMS WITH LOSS OF CH SUB4.

FACILITY: INST. NEORG. KHIM., RIGA, USSR.

UNCLASSIFIED



1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--NEW SYNTHESIS OF  
2,3,4,5,TETRA,O,ACETYL,1,6,DIBROMO,1,6,DIDEOXY,MANNITOL -U-  
AUTHOR-(03)-MAY, L., BERZATE, A., FISERS, G.  
COUNTRY OF INFO--USSR  
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 119-20  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CHEMICAL SYNTHESIS, MANNITOL, ACETATE, MAGNESIUM COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/0677 STEP NO--UR/0464/70/000/001/0119/0120  
CIRC ACCESSION NO--AP0119585  
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119585

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PBR SUB5 (0.06 MOLE) AND 0.02 MOLE D-MANNITOL HEXAACETATE ARE MIXED AND HEATED ON A BOILING WATER BATH 3-4 HR TILL THE SEPN. OF HBR STOPS GIVING THE TITLE COMPD., (ALPHA) PRIME20 SUBD MINUS 17.6DEGREES (CHCL SUB3), D 1.902. WITH MG THE PRODUCT FORMED A DI-GRIGNARD DERIV., 1 MOLE OF PRODUCT DISSOLVED 2 G ATOMS MG, AND THE MG-COMP. FORMED GAVE A POS. TEST WITH MISCHLER'S KETONE.  
FACILITY: INST. NEORG. KHIM., RIGA. USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--ALUMINUM OXYGEN BOND ENERGIES IN SOME CHELATE COMPOUNDS OF ALUMINUM  
-U-  
AUTHOR--(03)-MAY, L., VEVERE, I., STRAUSS, I.  
COUNTRY OF INFO--USSR  
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SEV. 1970, (1), 118-19  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ALUMINUM COMPLEX, BOND ENERGY, MASS SPECTROMETRY  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/0670 STEP NO--UR/0464/70/000/001/0118/0119  
CIRC ACCESSION NO--AP0119578  
UNCLASSIFIED

PROCESSING DATE--23OCT70

UNCLASSIFIED

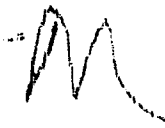
2/2 013

CIRC ACCESSION NO--AP0119578  
ABSTRACT/EXTRACT--(U) GP-0-

BETA OXOENOLATES AND BETA OXOENOLATOALKOXIDES ARE DETD. BY UTILIZING THE  
EMPIRICAL RELATION OF THE ENERGY OF THE IONIC RUPTURE OF THE AL-O BOND  
TO THE POLARIZABILITY OF THE BOND AND THE ELECTRONEGATIVITY OF THE AL  
ATOM. THE CALCD. ENERGIES AGREE WITH THE VALUES DETD. BY USING THE MASS  
SPECTROMETRIC METHOD.

FACILITY: INST. NEORG. KHIM., RIGA, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--CONDENSATION PRODUCTS OF ALUMINUM CHELATES WITH MANNITOL AND  
SORBITOL HEXAACETATES -U-  
AUTHOR--VEVERE, I., RIYEKSTINA, D., MAY, L.   
COUNTRY OF INFO--USSR  
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 3-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ALUMINUM COMPLEX, ORGANOALUMINUM COMPOUND, CONDENSATION  
REACTION, ORGANIC COMPLEX COMPOUND, NEUTRON ACTIVATION ANALYSIS,  
ACETATE, ALCOHOL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1987/1065 STEP NO--UR/0464/70/000/001/0003/0005  
CIRC ACCESSION NO--AP0104463  
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104463

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDENSATION PRODUCTS OF AL  
CHELATES (ACETYLACETONATES, ETHYL ACETOACETATES) WITH MANNITOL AND  
SORBITOL HEXAACETATES CONTG. 1, 2, AND 3 CHELATE GROUPINGS HAVE BEEN  
OBTAINED AND IDENTIFIED. THE DETN. OF AL IN THESE COMPS. BY MEANS OF  
NEUTRON ACTIVATION ANAL. IS REPORTED.

UNCLASSIFIED

USSR

UDC 547.241

LUKEVITS, O. K., and MAY, I. A., Institute of Inorganic Chemistry, Academy of Sciences Latvian SSR

"Synthesis of Aminoalkyl(aryl)diphosphonic Acids"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, Seriya Khimicheskaya, No 6, 1970, pp 732-734

Abstract: Compounds  $RC(NH_2)/P(O)(OH)_2/2$  (I)  $\rightleftharpoons RC(NH_3^+)/P(OH)_2/P(O)(OH)$ .  $O^-$  (Ia) were prepared by reacting nitriles with  $PBr_3$ . Upon addition of 3g acetonitrile to 31.8 g  $PBr_3$  under cooling with ice + NaCl, stirring of the mixture for 20 hrs at room temperature, further stirring at room temperature for 20 hrs on addition of 19.5 g. glacial acOH, and decomposition with ice water, l-aminoethane-1,1-diphosphonic acid (I, Ia; R = Me) was obtained with a yield of 4.1 g (28%) in the form of a precipitate that formed on evaporation of the solution. On recrystallization from aqueous acetone, 3.5 g. with m. pt. 277°. l-phenyl-1-aminomethane-1,1-diphosphonic acid (I, Ia; R = Ph) was prepared similarly from benzonitrile and  $PBr_3$ . Its yield was 51% and its m. pt. on washing with dioxane 188.5-190°. Stirring on addition of glacial AcOH was carried out for only 4 hrs in the preparation of this  
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LUKEVITS, O. K., and MAY, I. A., Izvestiya Akademii Nauk Latvviyskoy SSR, Seriya Khimicheskaya, No 6, 1970, pp 732-734

compound; at this point, the mixture thickened. The product precipitated spontaneously on decomposition of the mixture with ice water, after the mixture had been allowed to stand. The IR spectra of the two compounds were determined.

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1/2 C19 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--CHELATE ALLYLATES OF ALUMINUM -U-  
AUTHOR--(02)-MAY, L., VEVERE, I. M  
COUNTRY OF INFO--USSR  
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIN. SER. 1970, (1) 110-11  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--IR SPECTRUM, PROTON, MAGNETIC RESONANCE, ALUMINUM COMPLEX,  
ACETOACETATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1989/0429 STEP NO--UR/0464/70/000/001/0110/0111  
CIRC ACCESSION NO--AP0107045  
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107045

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEXES OF ALLYL ALG. (ROH) WITH AL. HAVING THE GENERAL FORMULA  $L(RO)AL(OR)SUB2 AL-(OR)2L$ , WHERE L IS THE ANION OF THE ENOL FORM OF ACETYLACETONE OR ETHYL ACETOACETATE, WITH 1 BRIDGING OR GROUPS, ARE FORMED BY THE ACTION OF ALLYL ALG. ON METALLIC AL IN THE PRESENCE OF ACETYLACETONE OR ETHYL ACETOACETATE. FRESHLY PREPD., THESE COMPS. HAVE MOL. WTS. CORRESPONDING TO DIMERS, BUT UPON STORAGE THE MOL. WTS. INCREASE, CORRESPONDING POSSIBLY TO TRIMERIC STRUCTURES CONTG. 6 MEMBERED RINGS. THE IR AND PMR SPECTRA OF THESE COMPS. WERE STUDIED.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--CONDENSATION PRODUCTS OF ALUMINUM MONOCHELATES WITH TRIETHANLAMINE  
-U-  
AUTHOR--(02)-VEVERE, I., MAY, L. *M*  
COUNTRY OF INFO--USSR  
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 19-22  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CONDENSATION REACTION, IR SPECTRUM, SPECTROSCOPIC ANALYSIS,  
ORGANIC COMPLEX COMPOUND, ETHANOL, AMINE DERIVATIVE, ORGANICALUMINUM  
COMPOUND, ALUMINUM COMPLEX, PICRATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1993/0732 STEP NO--UR/04664/70/000/001/0019/0022  
CIRC ACCESSION NO--AP0113596  
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--16JCT70

CIRC ACCESSION NO--AP0113596

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO NEW COMPS. ARE OBTAINED AND IDENTIFIED FROM THE CONDENSATION OF MONOCHELATES (2,4-PENTADIONATO DIISOPROPOXIDE AND ETHYLACETOACETATO DIISOPROPOXIDE) OF AL WITH TRIETHANOLAMINE. THEY FORM PICRATES AS EASILY AS TRIETHANOLAMINE AND THEIR IR SPECTRA ARE REPORTED. FACILITY: INST. NEORG. KHIM., RIGA, USSR.

UNCLASSIFIED

Organophosphorus Compounds

USSR

UDC 543.422.25:547.241

MAY, L. A. and LUKENICH, O. K., Institute of Inorganic Chemistry, Academy of Sciences Latvian SSR

"NMR Spectra of 1-Hydroxyethyliden-1,1-diphosphonic Acid"

Riga, Izvestiya Akademii Nauk Latviskoy SSR, No 3, 1973, pp 372-373

Abstract: The nmr spectra of the title compound (II) were made and compared with that of 1-aminoethyliden-1,1-diphosphonic acid. The spectra of (II) were made in H<sub>2</sub>O, D<sub>2</sub>O, and D<sub>2</sub>O plus traces of dimethylsulfoxide (DMSO) and showed a very clear and symmetrical triplet of CH<sub>2</sub> protons having a J = 13.5 hertz. Splitting of the triplet components, as seen in the spectra of (I), was not observed. The center of the triplet for I & II were similar: 1.0±.1 m.d. for DMSO and 3.2±0.03 for H<sub>2</sub>O. The center of the triplet in other cases may be taken to be 8.42±0.05. In contrast to the spectra of (I), some signals (for example the tert. OH-group) were not observed in spectra of (II) before and after the H<sub>2</sub>O signal. The triplet and H<sub>2</sub>O signal are identical, apparently as a consequence of proton exchange.

1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--300C170  
TITLE--ANTIFROTHING AGENTS FOR AQUEOUS SYSTEMS CONTAINING SURFACE ACTIVE  
AGENTS -U-  
AUTHOR--(03)--GOLOMB, L.M., MAY, L.S., GONCHAROVA, G.G.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. PROM. UKR. 1970: (2), 41-3 M  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--ANTIFOAM ADDITIVE, SURFACE ACTIVE AGENT, EMULSION,  
POLYSILOXANE/(U)PMS1000A POLYSILOXANE, (U)OS2 EMULSIFIER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/0959 STEP NO--UR/0436/70/0001 02/0041/0043  
CIRC ACCESSION NO--AP0124619  
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30DCY70

CIRC ACCESSION NO--AP0124619

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GOOD RESULTS WERE OBTAINED WITH THE PRODUCT SE-2, CONSISTING OF A 30PERCENT EMULSION OF POLY(METHYLSILOXANE) PMS-1000A MADE IN A 3PERCENT AQ. SOLN. OF THE EMULSIFIER OS-2 BY MIXING AT 300 RPM. THIS ANTIFROTHING AGENT USED IN AMTS. OF 0.01-0.05PERCENT WAS EFFECTIVE IN PREVENTING FROTH FORMATION AND IN BREAKING THE FROTH IN AQ. SOLNS. CONTG. ANIONACTIVE AND NONIONIC SURFACTANTS. FACILITY: RUBEZHAN. FILIAL, NIOPK, RUBEZHNOE, USSR.

UNCLASSIFIED

USSR

Powder Metallurgy

UDC 621.77.2

KOVAL'CHENKO, M. S., and MAY, M. M., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Creep During Hot Extrusion of Titanium Diboride Powder"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug 73, pp 23-27

Abstract: The a process of hot extrusion of titanium diboride powders with a varying particle size and varying content of iron impurity was investigated and an analysis of the phenomenon of creep during powder compaction was made. The powders contained 0.1 and 0.4 mass % Fe. The powder with 0.4 mass % Fe was put into a vibration grinder for three hours, after which its iron content was increased to 1.5 mass % Fe and the average particle size was less than one micron. Chemical Composition of the Titanium Diboride powders was (in Mass %):

Technically pure	Ti	B	C	Fe
Batch 1	69.0	30.3	0.32	0.1
Batch 2	68.0	30.8	0.54	0.4
1-micron powder	67.7	30.3	0.3	1.5

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USSR

KOVAL'CHENKO, M. S., and MAY, M. M., Poroshkovaya Metallurgiya, No 8, Aug 73, pp 23-27

The relationship between relative density of the extruded powders and temperature, time, and applied load was established and it is shown that the process of compacting  $TiB_2$  powders can be described by an equation for the volumetric viscous flow of a porous body which includes the equation of  $\kappa$ -creep. The derived creep rates of the solid phase in the compacting process were determined and the proportionality of their cube of pressure for the technically pure powder was established along with the fourth degree of pressure for the powder with 1.5 mass % Fe. The magnitudes of Laplace pressure and creep activation energies were evaluated. It was established that upon increasing the Fe content in the titanium diboride powder there is a substantial increase in the rate of compaction and grain growth, a lowering of activation energy and stopping of compaction in the last stage of hot extrusion. Three figures, one table, nine bibliographic references.

2/2

- 27 -

USSR

UDC 621.762:621.772

MAY, V. K., DENISENKO, E. T., and KHIRYENKO, A. F., Institute of the Problems of Material Science, AN UKrSSR

"Effect of Nichrome Powder Structure Characteristics of Hot Pressuring Kinetics"

Kiyev, Poroshkovaya Metallurgiya, No 6 (102), Jun 71, pp 25-28

Abstract: The metallographic investigation of hot pressed Nichrome specimens did not reveal a substantial growth of grains with increasing temperature and increasing pressure. Therefore, the main parameters characterizing the structural factor must be of the size of the initial powder particles and the magnitude of the mosaic blocks established during the hot pressing process. The effect of initial powder particle sizes on the packing rate was experimentally investigated on powder of Nichrome Kh20N80. Its packing kinetics and calculated deformation change kinetics during hot pressing are shown. The structural factor characterizing the packing rate during hot pressing was found to be a monotonically decreasing function of the average powder particle size. The character and direction of the substructure change during hot pressing are determined not only by temperature and the hot pressure, but they depend also on preliminary thermal treatment of the powder. Four illustr., two tables, five formulas, five biblio. refs.  
1/1

1/2 028 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--GLAUCOMA TREATMENT AT THE EYE DEPARTMENT OF THE PICKET SANATORIUM  
-U-  
AUTHOR--MAYACHENKOVA, YE.V.  
COUNTRY OF INFO--USSR  
SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 2, PP 90-91  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--EYE DISEASE, MEDICAL FACILITY, HYPERTENSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1986/0696 STEP NO--UR/0357/70/000/002/0090/0091

CIRC ACCESSION NO--AP0102680

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--0200170

CIRC ACCESSION NO--AP0102630

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KISLOVEDSK SANATORIUM "RICKET" HAS A SPECIALIZED EYE DEPARTMENT WHICH HAS BEEN IN SERVICE FOR OVER 10 YEARS. THERE, FOR THE FIRST TIME IN THE SOVIET UNION, NATURAL CURATIVE FACTORS HAVE BEEN USED IN TREATING GLAUCOMA. THE METHOD OF HEALTH RESORT THERAPY WAS INITIATED BY LATE PROF. N. M. PAVLOV. THE PRINCIPAL ELEMENTS OF THE HEALTH RESORT THERAPEUTIC COMPLEX ARE NARSAN (MINERAL WATER) BATHS, CLIMATIC PROCEDURES, TERRAIN CURE, THERAPEUTIC EXERCISE, VARIOUS HYDRO AND PHYSICAL PROCEDURES. IMMEDIATE RESULTS OF THE TREATMENT INCLUDE: VISUAL ACUITY INCREASE BY 0.1 IN 48.4PERCENT OF CASES, DECREMENT OF THE INTRAOCULAR TENSION IN 74.7PERCENT OF CASES, OF WHICH 51.6 TO THE NORMAL LEVEL, IMPROVEMENT OF PERIPHERAL VISION IN 84.3PERCENT OF INSTANCES. THESE RESULTS PERSISTED FOR 6 TO 10 MONTHS. AFTER HEALTH RESORT TREATMENT, AND PARTICULARLY ON ITS REPETITION, THE FURTHER DEVELOPMENT OF GLAUCOMA WAS HALTED.

UNCLASSIFIED

172 026

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--THE ANTIGENIC STRUCTURE OF SOLUBLE COMPONENTS OF LYMPH NODES OF  
GUINEA PIGS -U-

AUTHOR--MAYANSKIY, A.N.

M

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,  
NR 5, PP 78-82

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIGEN, AQUEOUS SOLUTION, LYMPHOID TISSUE, IMMUNOLOGY,  
ELECTROPHORESIS, SPLEEN, BONE MARROW, LIVER, GUINEA PIG

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1998/0093

STEP NO--UR/0219/70/069/005/0078/0082

CIRC ACCESSION NO--AP0120793

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--23DCT70

CIRC ACCESSION NO--AP0120793

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN REACTIONS OF GEL PRECIPITATION (OUCHTERLONY'S METHOD AND IMMUNOELECTROPHORESIS) AND INDIRECT HEMAGGLUTINATION THE AUTHOR STUDIED WATER SOLUBLE ANTIGENS OF GUINEA PIG LUMPH NODS. IMMUNOELECTROPHORETICALLY IN A WATER SOLUBLE EXTRACT 13 ANTIGENIC COMPONENTS WERE REVEALED. BASING UPON AN ANALYSIS OF IMMUNOCHEMICAL INTERRELATIONS WITH EXTRACTS OF THE SPLEEN, BONE MARROW, LIVER, LUNGS, AND KIDNEYS SIX "GROUPS" OF LYMPH NODE ANTIGENS WERE REVEALED, WHICH WERE CHARACTERIZED BY A DIVERSE RANGE OF IMMUNOCHEMICAL SIMILARITY WITH SOLUBLE COMPONENTS OF DIFFERENT ORGANS. THE PRESENCE OF ANTIGENS SPECIFIC FOR LYMPH NODS, FOR LYMPH NODS, SPLEEN AND BONE MARROW, LYMPH NODS AND LIVER. THE COMPLICATED IMMUNOCHEMICAL FEATURE OF SOLUBLE COMPONENTS MAY BE A REFLECTION OF THE FUNCTIONAL VARIETY OF LYMPH NODS. FACILITY: KAZAN SCIENTIFIC RESEARCH INSTITUTE OF EPIDEMIOLOGY AND MICROBIOLOGY.

UNCLASSIFIED

Acc. Nr: **AP0044189**

Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 2, pp 67-72

ALLERGEN FRACTIONS OF BACTERIA OF INTESTINAL FAMILY  
REPORT I  
IMMUNOCHEMICAL AND ALLERGOLOGIC CHARACTERISTICS OF THE PREPARATIONS OBTAINED BY ANDO — VERZHIKOVSKY'S METHOD FROM VARIOUS STRAINS OF THE SAME SPECIES (ENTEROBACTER CLOACAE)

K. S. Zobnina, Mayanskiy, A. N.

Experiments were performed on sensitized guinea pigs. An allergen activity of an extracellular fraction, isolated by the method of Ando — Verzhikovskiy from the broth culture filters of bacterial species Enterobacter cloacae was demonstrated. The preparations produced from 10 strains of Ent. cloacae, which belonged to the same and different O — K-types, had an affiliated immunochemical structure and gave cross skin-allergic reactions. From 13 to 15 antigenic components were revealed immunophoretically in the Ando — Verzhikovskiy's fraction. A supposition was put forward on the presence of a complicated set of allergy-producing components in the microorganisms.

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UDC 617-001,28-089:616,419-089.843)-030.8-008.931:577.154.25

MAYANSKIY, D. N., Chair of Pathological Physiology, Kazan Medical Institute

"Isoenzymatic Spectrum of Lactic Dehydrogenase in Xenogenic Radiation Chimeras"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol. 70, No. 7, Jul 70, pp 47-50

Abstract: The bone marrow, spleen, liver, and erythrocytes were studied in mice irradiated with a lethal dose of 850 r and protected after 24 hours by implantation of rat myeloid cells. New "chimeric" spectra of isoenzymes of lactic dehydrogenase were qualitatively determined which gradually stabilized within 30-60 days. With the aid of an isoenzymatic marker, it was possible to determine all types of donor hematopoietic cells and to evaluate the distribution of donor cells and the quantitative ratio of hematopoietic series of the donor and recipient at different periods of chimerism with sufficient accuracy. Employment of an isoenzymatic tag was based on differences in electrophoretic motility and on the percentage ratios of lactic dehydrogenase isoenzymes in rat and mouse organs fractionated in agar gel.

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Acc. Nr.: **APD030993**

M

Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 1, pp 61-64

THE FORMATION OF RAT IMMUNOGLOBULINS IN MICE BY RAT SPLEEN CELLS TRANSPLANTED IN THE EARLY POSTNATAL PERIOD

Mayanskiy, D.N.  
Kazan Medical Institute

The author administered intraperitoneally  $1.10^6$ — $4.7.10^7$  rat spleen cells to neonate mice during the first 12 hours after birth.  $2\frac{1}{2}$  weeks after transplantation  $1.9.10^7$ — $2.10^7$  and  $4.2.10^7$ — $4.7.10^7$  cells in mouse blood appeared rat immunoglobulins of type IgG and IgM. immunoglobulins of IgG type continued to appear in the blood of the rat-mouse chimera for 5 weeks from the moment of transplantation. The presence of rat globulins in the blood of chimera coincided with accumulation in bone marrow of cells containing alkaline phosphatase with marked manifestations of festoons disease.

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REEL/FRAME

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19691019

USSR

UDC: 681.327.8

MAYANTS, V. I., LUTISO, V. P.

"A Device for Automatic Telephone and Videotelephone Communications"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratzy, Tovarnyye Znaki,  
No 10, Apr 72, Author's Certificate No 332583, Division H, filed 13 Apr 70,  
published 14 Mar 72, p 227

Translation: This Author's Certificate introduces a device for automatic telephone and videotelephone communications which contains automatic offices with connecting lines, a video attachment, and a video channel commutator matrix. As a distinguishing feature of the patent, the device is designed for uniting the videotelephone and telephone systems while reducing the equipment complement, which is accomplished by using a recognition device for the called party to control the video channel matrix. This recognition device is connected by a control circuit to a marker generator. The marker generator is connected through a telephone subscriber identifier to the lines of the automatic offices with video attachments in such a way that the recognition device is connected to the video channel commutation matrix by the contactors in a matrix which is

1/2

USSR

MAYANTS, V. I., LUPTSO, V. P., USSR Author's Certificate No 332583

connected to the subscriber lines by a delay circuit. The recognition device is made in the form of parallel circuits connected to the output of the marker generator. Each of these circuits is connected into the corresponding line of the video subscriber's automatic office, which is connected in turn to a NOR logic stage whose output is connected to the recognition device for the called party. The first input of the NOR circuit is connected to one conductor of the lines through an inverter whose output is connected to the matrix through the delay circuit. The second input of the NOR circuit is connected to the input of a flip-flop. One input of the flip-flop is connected to the second conductor of the line, and the output of the telephone subscriber identifier is connected to the other input of the flip-flop.

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- 52 -

1/3 024 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--VAGOTOMY IN SURGERY OF PEPTIC ULCER -U-  
AUTHOR--(03)-MAYAT, V.S., PANTSYREV, YU.M., GRINBERG, A.A.  
COUNTRY OF INFO--USSR  
SOURCE--KHIRURGIYA, 1970, NR 6, PP 28-34  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SURGERY, STOMACH, DIGESTIVE SYSTEM DISEASE, SECRETION,  
INSULIN, HEMORRHAGE

CONTROL MARKING--NC RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0052

STEP NO--UR/0531/70/000/006/0028/0034

CIRC ACCESSION NO--AP0137243

UNCLASSIFIED

2/3 024

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137243

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF LITERATURE DATA AND PERSONAL OBSERVATIONS THE AUTHORS PRESENT A PATHOPHYSIOLOGICAL SUBSTANTIATION OF DIFFERENT METHODS IN THE SURGICAL TREATMENT OF PEPTIC ULCER. THE NECESSITY OF DIFFERENTIATED APPROACH IN SOLVING THE PROBLEM OF THE OPERATIVE TECHNIQUE WITH DUE CONSIDERATION OF THE LOCALIZATION AND COURSE OF ULCER, FEATURES SPECIFIC TO THE SECRETORY AND MOTOR FUNCTION OF THE STOMACH, IS EMPHASIZED. OUT OF 345 OPERATIONS IN PEPTIC ULCER 150 WERE PERFORMED IN COMBINATION WITH VAGOTOMY. IN OVER 80 PER CENT OF PATIENTS THERE WERE ABSOLUTE OPERATIVE INDICATIONS. ECONOMIC RESECTION OF THE STOMACH IN COMBINATION WITH VAGOTOMY IS THE OPERATION OF CHOICE IN CHRONIC DUODENAL ULCER. PYLOROPLASTY WAS CARRIED OUT ONLY IN PATIENTS WITH A MARKED PREVALENCE OF SECRETION AFTER INSULIN STIMULATION. IN STENOSIS OF THE PYLORUS THE OPERATIVE TECHNIQUE IS MAINLY DETERMINED BY THE DEGREE OF STENOSIS AND STATE OF THE GASTRIC MOTOR ACTIVITY. A RARE INHIBITION OF THE LATER SHOULD SERVE AS A CONTRAINDICATION TO VAGOTOMY. SPARING OPERATIONS ARE PARTICULARLY EXPEDIENT IN EMERGENCY SURGERY IN PERFORATING ULCERS AND PROFUSE ULCEROUS HEMMORRHAGES. THE IMMEDIATE RESULTS OF 180 OPERATIONS WITH VAGOTOMY ARE SATISFACTORY. OUT OF 80 PLANNED OPERATIONS THERE WAS ONE LETHAL ISSUE. THE GREATEST LETHALITY WAS OBSERVED IN THE GROUP OF PATIENTS OPERATED FOR PROFUSE HEMORRHAGE. RELAPSES OF PEPTIC ULCER WERE NOT OBSERVED. THERE WERE SEEN NO MARKED POSTGASTRECTOMY DISORDERS. AT REMOTE POSTOPERATIVE PERIODS A MODERATE DIARRHEA WAS REVEALED IN 2 OUT OF 65 CLINICALLY EXAMINED PATIENTS.

UNCLASSIFIED


3/3 024  
CIRC ACCESSION NO--AP0137243  
ABSTRACT/EXTRACT--FACILITY:  
N. I. PIROGOVA.

UNCLASSIFIED

PROCESSING DATE--27NOV70

KAFEDRA GOSPITAL'NDY KH'URGIL. IIMII IMENI

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--PERITONITIS 6N PATIENTS WITH ACUTE APPENDICITIS -U-  
AUTHOR--(03)-MAYAT, V.S., FEDOROV, V.D., NIKITIN, A.M.   
COUNTRY OF INFO--USSR  
SOURCE--KHIRURGIYA, 1970, NR 4, PP 89-97  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, SURGERY, PERITONEUM, ANTIBIOTIC DRUG EFFECT  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1983/1232 STEP NO--UR/0531/70/000/004/0089/0097  
CIRC ACCESSION NO--AP0054127  
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054127

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR A TWENTY YEAR PERIOD THE CLINIC OPERATED UPON MORE THAN 20,000 PATIENTS WITH ACUTE APPENDICITIS, DURING THE LAST TEN YEARS THERE WAS NOTED AN INCREASED INCIDENCE OF EXTREME FORMS OF DESTRUCTION OF THE VERMIFORM APPENDIX AND SUCH COMPLICATIONS AS PERFORATION AND DIFFUSE SUPPURATIVE PERITONITIS. THIS RESULTED IN AN AUGMENTED POSTOPERATIVE LETHALITY. DIFFERENT FORMS OF PERITONITIS WERE OBSERVED IN 790 PATIENTS OUT OF THE LAST 5200 (15PERCENT) APPECTECTOMIES. LETHAL OUTCOMES WERE OBSERVED ONLY IN PATIENTS ADMITTED WITH MANIFESTATIONS OF PERITONITIS. COMPLEX TREATMENT PROVED TO BE LEAST EFFECTIVE IN DIFFUSE AND GENERAL SUPPURATIVE PERITONITIS. BACTERIOLOGICAL INVESTIGATIONS ENABLED TO SUBSTANTIATE THE NECESSITY OF USING ANTIBIOTICS OF THE NEOMYCIN SERIES. BEST RESULTS WERE OBTAINED IN PATIENTS IN WHOM SANATION OF THE ABDOMINAL CAVITY WAS CARRIED OUT BY MEANS OF WIDE LAPAROTOMY AND MASSIVE IRRIGATION WITH AN ISOTONIC SOLUTION WITH SUBSEQUENT PROLONGED FLOW IRRIGATION (5 TO 6 LITERS OF RINGER'S SOLUTION WITH 5 TO 6 GM OF CANAMYCIN PER 24 HOURS). AN ANALYSIS OF CLINICAL OBSERVATIONS ENABLED TO CONCLUDE THAT TO REDUCE THE LETHALITY IN ACUTE APPENDICITIS IT IS NECESSARY TO FURTHER IMPROVE THE TECHNIQUES OF TREATING SUPPURATIVE PERITONITIS, TO WIDEN THE SANITARY EDUCATION WORK AND TO INCREASE THE QUALIFICATION OF PHYSICIANS IN THE DIAGNOSIS OF ACUTE SURGICAL DISEASES OF ABDOMINAL ORGANS.

NOT RECORDED



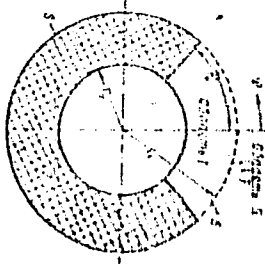
MAYATSKIY, V. I.

Sound Radiation

JPRS 57267  
26 October 1971

ARTICLE FROM THE JOURNAL OF SOUND RADIATION  
REPRODUCED BY A LETTER TO THE EDITOR  
[Article by V. I. Mayatskiy, V. I. Grudnikov, and V. I. Mayatskiy, Moscow,  
Akusticheskiy Zhurnal, No. 12, pp. 1973-1975, 1971.]

A rigorous solution is obtained for the problem of sound radiation by an infinite cylindrical resonator having part of its surface covered by a sound-soft material layer of arbitrary thickness, while the oscillatory velocity is defined on the remaining part. The solution is based on the use of an expansion technique. The calculated radiation pattern is compared with a pattern obtained experimentally. We will provide a rigorous solution to the problem of sound radiation by an infinite cylindrical resonator having part of its surface bounded by two generating elements, covered by a layer of sound-soft material of arbitrary thickness.



Key: 1. Region  
Figure 1

USSR

UDC 621.396.677.49.012.12

LEYKO, N. S. and MAYATSKIY, V. I.

"Statistical Properties of the Radiation Patterns and Selection of Ratings for Dolph-Chebyshev Arrays"

Moscow, Antenny, No 12, 1971, pp 3-12

Abstract: Since antenna excitation is always accompanied by random errors, the authors apply statistical procedures to the problem of determining the extreme radiation pattern sidelobe level and the optimal selection of the nominal excitation of Dolph-Chebyshev arrays on the assumption that as the sidelobe level approaches 0, these arrays display a binomial distribution. Considering the ratios of the nominal beamwidth to the nominal and statistical sidelobe levels in a field at the 0.7 level, the normally distributed phase and amplitude errors are determined and the probability density distribution for a vectorized random radiation pattern is given, including an asymmetry factor  $K^2$ . The statistical sidelobe level is then found from the variance of the amplitude and phase errors, the number of array elements, their spacing in wavelengths, and either the sidelobe level of the nominal radiation pattern or its main beamwidth. The formulas require computer solutions. They are simplified for engineering calculations and graphs are 1/2

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LEYKO, N. S. and MAYATSKIY, V. I., Antenny, No 12, 1971, pp 3-12

shown for various sidelobe levels and probabilities when  $K^2 = 1$ . If  $K^2 \neq 1$ , the problem generally cannot be solved. A comparison of the statistical and nominal curves shows a considerable difference for small sidelobe values, which is explained by the nature of the distribution as the main beamwidth increases. The minimum statistical sidelobe level is found from the Rayleigh distribution to correspond to some value of the minimum nominal level, which also determines the optimal nominal Dolph-Chebyshev array parameters. Thus, for example, if the amplitude-phase variance sum is greater than 0.05, the minimum statistical level corresponds to sidelobe levels within the limits 0.01-0.03. The authors believe that their procedure will allow a more rational choice of the nominal array design parameters, since problems which cannot be solved when the sidelobe level is chosen less than a minimum value are eliminated and the statistical functions permit a more specific appraisal of the balance between low sidelobe levels and wide beamwidths.

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USSR

UDC 534.2

LEYKO, A. G., and MAYATSKIY, V. I.

"Concerning the Diffraction of Sonic Waves on a Periodic Cascade of Elliptical Cylinders"

Tr. Taganrog. Radiotekhn. In-ta (Works of the Taganrog Radiotechnical Institute) No 22, 1971, pp 56-63 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2B245 by Ye. F. Afanas'yev)

Translation: The article deals with a steady-state problem of the determination of a sound field, outside a cascade of elliptical cylinders and within the cylinders, during the incidence upon it of a plane sonic wave at an arbitrary angle. The medium outside the cylinders and within them is characterized by different densities. Local elliptical coordinates are used. The solution of the problem is sought in the form of series on the basis of Mathieu functions. For the unknown coefficients, an infinite system of linear algebraic equations is constructed. Dispersion coefficients are found which determine first-order diffraction waves with no account taken of the reciprocal action of the cylinders.

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USSR

UDC: 534.26

VOVK, I. V., GRINCHENKO, V. T., MAYATSKIY, V. I., Kiev

"Acoustic Field of an Infinite Circular Cylindrical Transducer Partially Covered by a Layer of Acoustically Soft Material"

Moscow, Akusticheskiy Zhurnal, Vol 18, No 3, pp 365-369

Abstract: A strict solution is given for the problem of sound emission by an infinite circular cylindrical transducer on which a part of the surface bounded by two generatrices is covered by a layer of acoustically soft material of arbitrary thickness, assuming a predetermined arbitrary distribution of the normal component of the oscillatory velocity over the uncovered region of the surface. The solution is based on use of the method of eigenfunctions. The final infinite system of linear algebraic equations is studied for quasiregularity. An analysis of the radiation pattern of a specific transducer using the proposed method agrees well with experimental results.

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USSR

UDC 619:616.081.42-084.47

ZHOVANIK, P. N., MAYBORODA, A. A., and YERZH, N. I., Ukrainian Scientific  
Research Institute of Experimental Veterinary Medicine

"Effectiveness of Nonagglutinogenic Vaccine Against Brucellosis"

Moscow, Veterinariya, No 6, Jun 73, pp 50-52

Abstract: In connection with a study of mutations of Brucella microorganisms, strains of nonagglutinogenic mutants were selected which had lowered virulence, exhibited pronounced immunogenicity, and did not stimulate the formation of antibodies that reacted with the ordinary brucellosis antigen. One of these strains, Br. abortus V-8, which was found to retain its cultural and biological characteristics for about 10 yrs, was used for the preparation of an antibrucellosis vaccine. Good results were obtained in field tests by applying this vaccine for the immunization of cattle.

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USSR

UDC 615.616.24-003.656.6

MAYBORODA, S. I., MAYBORODA, A. A., CHERNYAK, B. A.

"Effect of Foam Plastic Dust on the Lungs of Experimental Animals"

Nauch. tr. Irkutsk. med. in-t (Scientific Works of the Irkutsk Medical Institute), 1972, vyp. 110, pp 43-45 (from RZh--Farmakologiya. Khimioterapevticheskiye Sredstva. Toksikologiya, No 3, Mar 73, Abstract No 3.54.898)

Translation: Fifty miligrams of phenol formaldehyde resin molding coater in 0.5 ml of physiological solution were administered intratracheally to rats. During histologic studies for two months of observations, an exudative-proliferative reaction was noted in the lungs with subsequent development of polypose panbronchitis and initial manifestations of pneumosclerosis. The degree of expression of fibrosis depended on the magnitude of the foam plastic dust accumulations in the lung tissue. It is proposed that the foam plastic acting on the lung tissue causes the formation of autoantigens and that a significant role in the development of the pathologic processes played by the autoimmune component. USSR, Irkutsk, Medical Institute.

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Veterinary Medicine

USSR

UDC 636.2:615.371

ZHOVANI, P. N., Doctor of Veterinary Sciences, and MAYBOROM, A. A. and YERZH, N. I., Candidates of Veterinary Sciences, Ukrainian SSR Scientific Research Institute of Veterinary Science

"Tests of Strain B-8 Nonagglutinating Brucellosis Vaccine in Immunization Experiments on Young Cattle"

Moscow, Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokhozyaystvennykh Nauk imeni V. I. Lenina, No 8, 1972, pp 33-35

Abstract: Dry, live brucellosis vaccine obtained from cultures of nonagglutinating, weakly virulent mutant *Brucella abortus*, strain B-8 was tested in the laboratory of guinea pigs and 5-10 month old heifers and at two brucellosis-infected farms on 5-10 month old heifers. The preliminary laboratory experiments indicated that the vaccine did not cause appearance of agglutinins and generated stable immunity. No significant pathological changes due to the vaccine were noted. In a 2-year period 641 heifers at 2 farms were immunized at 5-10 months old and revaccinated 1-2 months prior to fertilization. Pathological changes were insignificant up to 6 weeks after vaccination, while none were noted among heifers slaughtered 10 months after vaccination. The vaccine culture was found to survive well for the 1st 3 weeks and then rapidly 1/2



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ZHOVANIK, P. N., et al., Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokhozyaystvennykh Nauk imeni V. I. Lenina, No 8, 1972, pp 33-35

disappear by the 6th week. Heragglutination and complement-fixation reactions were negative after vaccination and revaccination for all but 1 immunized heifer. The preventative properties of blood serum from 69 vaccinated heifers were tested on white mice. Such serum resulted in 41.3% survival of mice infected with a highly virulent strain, while only 22.6% of such mice survived when not treated with the serum. The immunity of 13 vaccinated and 12 control heifers was tested by infecting them with standard strain Br. abortus 544. While a generalized infection resulted among all control animals, 13 immunized heifers had complete immunity and 5 had partial immunity. All 5 animals infected after revaccination exhibited complete immunity. It is concluded that this vaccine should be tested further and employed on young animals to improve the condition of brucellosis-infected herds.

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USSR

UDC 669.721.018.9(088.8)

RYABUKHOV, S. I., KIMSTACH, G. M., PIRYAZEV, V. P., UTKIN, S. Ye., and MAYBORODA, M. V.

"Device for Production of Magnesium Alloy"

USSR Author's Certificate No 268450, Filed 30/12/66, Published 8/09/70  
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract  
No 2 G189 P)

Translation: A device suggested for the production of an Mg alloy includes an induction furnace with a rotating mechanism and a mold. To decrease the expenditure of Mg and improve the properties of the alloy, the device is equipped with a replaceable mold, hermetically placed on the crucible of the induction furnace. A steel plate which is melted during the process of melting the alloy is placed between the induction furnace and the mold in order to decrease the free surface over the melt and eliminate cold surfaces which would condense the Mg from its vapors.

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USSR

UDC 615.616.24-003.656.6

MAYBORODA, S. I., MAYBORODA, A. A., CHERNYAK, B. A.

"Effect of Foam Plastic Dust on the Lungs of Experimental Animals"

Nauch. tr. Irkutsk. med. in-t (Scientific Works of the Irkutsk Medical Institute), 1972, vyp. 110, pp 43-45 (from RZh--Farmakologiya. Khimioterapevticheskiye Sredstva. Toksikologiya, No 3, Mar 73, Abstract No 3.54.898)

Translation: Fifty milograms of phenol formaldehyde resin molding coater in 0.5 ml of physiological solution were administered intratracheally to rats. During histologic studies for two months of observations, an exudative-proliferative reaction was noted in the lungs with subsequent development of polypose panbronchitis and initial manifestations of pneumosclerosis. The degree of expression of fibrosis depended on the magnitude of the foam plastic dust accumulations in the lung tissue. It is proposed that the foam plastic acting on the lung tissue causes the formation of autoantigens and that a significant role in the development of the pathologic processes played by the autoimmune component. USSR, Irkutsk, Medical Institute.

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MAYBUROV, V. B.

JPRS 56371  
28 June 1972

MULTITUBE GENERATOR BANK

[Article by G.I. Zverev, V.I. Lyul'ev, V.B. Mayburov, I.S. Savchenko, and I.R. Yampol'skiy; Preprint-5, Russian, 26 November 1970, pp 1-13]

The experimental work in the study of the interaction of high-frequency fields with a plasma have required the creation of exceptionally powerful pulse generator systems in the 1-5 megahertz frequency range. Reference [1] contains a description of a setup and a high frequency 3-prong self-excited oscillator for studying the interaction of a traveling field with a plasma. This setup is characterized by the conditions of a strong connection of the circuit to the plasma. The installed power of the tubes of the self-excited oscillator is 60 megawatts.

In references [2, 3] on experimental studies of dynamic stabilization and confinement of a plasma, high frequency electromagnetic fields of quadrupole configuration rotating around the plasma column are used. The purpose of this research required the creation of a generator bank with an installed tube capacity of about 60 megawatts. The primary difficulties in treating generators of this type are connected with the necessity for exciting the power of a large number of tubes and insuring phasing such as to obtain rotating electromagnetic fields during operation of the generator on a variable load which depends on the plasma properties and the connection with the plasma.

In contrast to [1], the described generators are characterized by operating conditions determined by the low coupling of the high frequency field to the plasma (the level of the high frequency fields in the plasma region is relatively small). The losses in the plasma, as a rule, do not exceed 10-40 percent of the losses in the circuit. This permitted application of direct connection of the circuit to the tube without ~~the~~ ~~use~~ ~~of~~ ~~any~~ ~~special~~ ~~measures~~. In the mode without a plasma, the generator operates in a strongly overloaded mode. Additional loading of the circuit by the plasma does not lead to a significant reduction in voltage on the circuit, and the tube conditions approach critical.

In a number of cases were significant loading of the circuit by the plasma was observed. In order to maintain the strong voltage reductions in the circuit, independent excitation was used in these cases.

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USSR

MAYCHUK, Yu. F., Doctor of Medical Sciences, and ABAZOV, T. H., Clinical  
Viral Department of the Moscow Scientific Research Institute of Eye Diseases  
imeni Helmholtz

"Therapeutic Effectiveness of Florenal in Adenoviral Eye Diseases"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 10, 1971, pp 61-62

Abstract: According to data released by the All Union Scientific Research  
Chemcopharmaceutical Institute, the new Soviet drug florenal exerts a strong  
neutralizing effect on some viruses. The drug was tested by the authors on  
30 male and female patients, aged 10 to 80, who had had uni- and bilateral  
adenoviral conjunctivitis and keratoconjunctivitis for 2 to 21 days. The  
drug was applied to the eyes in the form of a 0.25% and 0.5% ointment 3-5  
times per day at first and 1-2 times per day subsequently. Patients who  
also had bacterial conjunctivitis were given topical drops of a 10% sulfa-  
pyridazine solution and corticosteroids in addition to florenal. Signifi-  
cant improvement was observed in 2-3 days, and complete clinical recovery  
took place in 6-15 days, with an average of 11 days. Side effects were  
observed in only one patient in the form of a colic in the eye. Otherwise,  
the drug was well tolerated and caused no irritation. It is concluded that  
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MAYCHUK, Yu. F. and ABAZOV, T. H., Meditsinskiy Zhurnal Uzbekistana, No 10, 1971, pp 61-62

florenal ointment is an effective drug for the treatment of adenoviral eye diseases.

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USSR

UDC 617.713-002-02:616.523/-085

MAYCHUK, YU. F., Doctor of Medical Sciences, POZDNYAKOV, V. I., Candidate of Medical Sciences and ABRAMISHVILI, R. I., Scientific Associate Virus Clinical Division, Moscow Institute of Eye Diseases named Helmholtz, Moscow

"Leukocyte Interferon and Its Combination With Methacil in the Therapy of Herpetic Keratitis"

Odessa, Oftal'mologicheskiy Zhurnal, No 3, 1971, pp 193-195

Abstract: It had been established that human leukocytic interferon inhibits the propagation of herpes simplex virus in tissue cultures and that it is effective in the therapy of experimental herpetic keratitis of rabbits. Clinical observations were carried out on 56 patients with herpetic keratitis who were treated by the application of leukocytic interferon in the form of eye drops. Interferon with an activity of 150-200 units/ml was found to have a therapeutic effect. In cases of superficial herpetic keratitis, epithelization of the cornea on its application usually set in within 4-15 days. In cases of deeper involvement of the cornea and participation of the uveal tract, epithelization set in later and additional treatment was required. Interferon with activity less than 100 units/ml had a weaker effect, while that with an activity of 500-700 units/ml had approximately the same effect  
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MAYCHUK, YU. F., et al., Oftal'mologicheskii Zhurnal, No 3, 1971, pp 193-195

as the preparation with 150-200 units/ml. Units of activity were determined on the basis of effect on a tissue culture infected with herpes virus. Interferon in combination with methacil had a greater therapeutic effect than interferon alone; use of the interferon-methacil mixture made it possible to reduce the number of applications from 5-6 to 3 per day. In a decision of 24 Apr 70, the Pharmacological Committee of the Ministry of Health USSR approved the use of leukocytic interferon for the treatment of virus diseases of the eyes.

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USSR

UDC 536.24:539.196.6

PETUKHOV, B. S., MAYDANIK, V. N., NOVIKOV, G. A.

"Experimental Study of Heat Transfer with Turbulent Flow of a Nonequilibrium  
Dissociating Gas in a Circular Pipe"

Moscow, Teplofizika Vysokikh Temperatur, Vol. 9, No. 2, Mar-Apr 71, p. 316-319.

Abstract: An experimental study is performed of heat transfer with turbulent flow of a nonequilibrium dissociating gas (nitrogen dioxide) in a circular pipe. The experimental data shows significant dependence of heat transfer on the rate of the dissociation reaction. A dependence is suggested for calculation of heat transfer considering the finite rate of the reaction.

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USSR

UDC 536.24.532.542.4.535.338

PETUKHOV, B. S., MAYDANIK, V. N., and NOVIKOV, G. A.

"Experimental Investigation of Heat Transfer with Turbulent Flow through Round Tube of Gas Under Dissociation Equilibrium"

Moscow, Teplofizika Vysokikh Temperatur, Akademiya Nauk SSSR, Vol 9, No 1, Jan-Feb 71, pp 116-123

Abstract: Experimental investigation of heat transfer with turbulent flow of nitrogen tetroxide was conducted. The gas was flowing through a round tube which was heated by electric current, the heat was transferred from the walls of the tube to the gas. The temperature of the tube wall was measured by thermocouples welded to the outside of the tube. The gas temperature was measured by thermocouples at the inlet and outlet of the tube. The relation between the gas temperature and the length of the tube was obtained by varying the length of the tube being heated.

The experiments were conducted with the range of pressures of 3 to 45 atmospheres, gas temperatures from 50 to 600°C, wall temperatures from 70 to 700°C, Reynolds number from 25,000 to 250,000.

The dissociation of nitrogen tetroxide occurs in two stages. At the  
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PETUKHOV, B. S., et al., *Teplofizika Vysokikh Temperatur*, Akademiya Nauk SSSR, Vol 9, No 1, Jan-Feb 71, pp 116-123

temperature from 20 to 180°C the nitrogen tetroxide dissociates into nitrogen dioxide, the proportion of the latter increases with the temperature. The change of such proportion occurs practically instantaneously with the change of temperature. Equilibrium condition is assumed to exist at each point at this stage. At the temperatures from 150 to 900°C the nitrogen dioxide dissociates into nitrogen monoxide and oxygen, this reaction occurs slowly and it is assumed that the chemical composition of the gas in this stage does not change along the length of the tube.

Graphs of gas temperature, wall temperature and heat transfer coefficient along the length of the tube are given for both stages of dissociation

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1/2 008 UNCLASSIFIED PROCESSING DATE--11SEPT0  
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