

USSR

DRITS, M. YE., et al., Struktura i svoystva legk. splavov, Moscow, Nauka Press, 1971, pp 118-122

that the indicated alloys can be used not only at room temperature but also on heating to 100°. The specific weight of the alloys (1.57-1.6 g/cm³) is lower than the specific weight of the pure Mg. Three illustrations, 4 tables, and a 10-entry bibliography.

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USSR

UDC 669.71:669-416:539.4:539.52

DRITS, M. YE., KADANER, E. S., TOROPOVA, L. S., KOP'YEV, I. M.

"Variation of the Strength and Plastic Properties of Aluminum Foil and Sheet Aluminum as a Function of Composition"

V sb. Struktura i svoystva legk. splavov (Structure and Properties of Light Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 28-32 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 41625)

Translation: A study was made of the dependence of the mechanical properties of Al rolled material A99 2-0.02 mm thick. It was established that the specific properties of the foil (a sharp drop in plasticity and an increase in strength) begin to appear with a thickness of the rolled material of 0.1 mm. A study was made of the dependence of the mechanical properties of the 2 mm sheet and 0.02 mm foil on composition for binary alloys of the Al-Cu, Al-Zn, Al-Mg, Al-Mn, and Al-Ti systems. The properties were determined both in the peened and annealed states. The nature of the dependence of the mechanical properties on the composition is analogous for foil and sheet, but the alloying effect is exhibited appreciably more strongly in the foil. The observed deviations from this relation are connected with the harmful effect of oxidation of the interfaces (internal and external) and the presence of microdefects caused by inclusions of solid and brittle phases. Stress relief of the foil has a cross section.

3 illustrations and a 6-entry bibliography.

1/1

- 2 -

USSR

UDC 620.186.5:669.71

DRITS, M. Ye., KADENER, E. S., and TOROPOVA, L. S., Institute of Metallurgy
~~Imeni A. A. Baykov~~

"Recrystallization of a Foil of Aluminum and Its Alloys"

Moscow, Metallovedeniye, No 5, 1971, pp 49-51

Abstract: A study was made of the effect of Cu, Zn, Ag, Mg, Ce, Nd, mixed metal, Mn, Cr, Ti, and Zr on the recrystallization temperature of a 20- μ -thick aluminum foil, and, for purposes of comparison, of the recrystallization of binary aluminum alloys on 2-mm-thick sheets. Results show the effect of alloying elements on recrystallization temperatures at the beginning and end of the recrystallization. Additions of Zr, Mn, Ti, and Cr most effectively impede the development of recrystallization processes in the foil. Recrystallization processes proceed in the foil much more intensively than in the material of the same composition but of massive cross-section. Two figures, one table, nineteen bibliographic references.

1/1

Magnesium

USSR

UDC 669.721.018

DRITS, M. Ye.

"Superlight Magnesium-Base Alloys"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow "Nauka", 1970,
pp 171-176, resume

Translation: Superlight alloys based on the Mg-Li system are of interest for specialists of various technological fields where a reduction of construction weight is required. Magnesium alloys, alloyed with lithium, have a specific weight (1.3-1.6 g/cm³) which is lower than the specific weight of magnesium (1.74 g/cm³). Data on properties of Mg-Li alloys developed in the USSR are presented. In addition examples are given of the application of Mg-Li alloys in aerospace, rocket, and aviation industries of the USA. One figure, two tables, sixteen bibliographic references.

1/1

USSR

UDC: 539.385

DRITS, M. YE., KADANER, E. S., KOP'YEV, I. M., TOROPOVA, L. S.
and DEMIDOV, YU. S., Institute of Metallurgy imeni A. A. Baykov,
Academy of Sciences USSR

"Factors Affecting the Fatigue Characteristics of Aluminum
Foil of Various Compositions"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press,
1971, pp 112-116

Translation: Aluminum foil finds applications in the production of miniature computer membranes operated under cyclic loading conditions. There are almost no data in reference sources on the fatigue strengths of aluminum foil. This study deals with the effect of alloying components on the limited service life of aluminum foil. Ordinary fatigue curves have been plotted for pure A99 aluminum and Al alloy with 4% Zn. The effect of the foil's microgeometry on fatigue properties was studied on foil from Al alloy with 4% Zn. It is shown that the fatigue strength of foil from aluminum alloys depends on: 1) foil composition, governing the presence or absence of internal defects; 2) alloy strength, and 3) the state of internal and external interfaces. (3 illustrations, 4 biblio. ref.; summary)

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DRITS, M. Ye.

PHASE DIAGRAMS OF METALLIC SYSTEMS
(Conference in Moscow)

[Article by Doctor of Technical Sciences M. Ye. Drits and L. S. Guzey, Moscow, Vestnik Akademi Nauk SSSR, Russian, Vol 41, No 1, October 1971, pp 105-109]

The creation of new and the improvement of already existing areas of engineering makes it necessary to develop and introduce into production new metallic materials with a definite complex of physical, mechanical, chemical, and technical properties. The solution of these problems will be helped by the construction of phase diagrams, which represent a summary and generalization of results of all observations for each system of alloys and serve as a scientific basis for the working up of metallic composition.

In spite of the fact that our country occupies one of the leading places in the world in the number of investigations of phase diagrams, the rates of development of our science and industry are such that experimental investigations on the study of phase diagrams still lags behind the requirements of the time. Because of that much attention is now given to the development of mathematical methods of analysis and calculation in the given areas, the forecasting of influence of components with one or other, analysis of the influence of crystal chemical factors on the structure of phase diagrams and the latest methods of studying them experimentally.

All these questions were discussed at the fifth all-union conference on the theme "General regularities in the structure of phase diagrams of metallic systems," held on 7-10 June in Moscow. The conference was organized by the Section of the Chemistry of Metals of the Scientific Council for Inorganic Chemistry, and the Institute of Metallurgy Imeni A. A. Baykov of the AS USSR, and the Chemistry Faculty of Moscow University; participating in it were 250 representatives of 59 scientific research and educational organizations from 32 cities of the Soviet Union; in all, 37 reports were heard, including 17 survey reports.

SPRS 54678
10KRC 1971

USSR

UDC 669.715'5'721+669.715'5'296]:534-8

DRITS, M. Ye., ROKHLIN, L. L., BOCHVAR, N. R., GUR'YEV, I. I., and DZYUBENKO, M. I., All-Union Institute of Light Alloys

"Sound Conduction of Al+20% Zn Alloy With Additions of Magnesium and Zirconium as a Function of Conditions of Heat and Pressure Treatment"

Tekhnol. legkikh splavov. Nauch.-tekhn. byul. VILSa (Technology of Light Alloys. Scientific and Technical Bulletin of All-Union Institute of Light Alloys), 1971, No 4, pp 9-13 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 11727 by I. Yeroshenkova)

Translation: The authors studied the influence of homogenization, as well as pressing temperature, annealing, and aging on the ultrasound attenuation coefficient in alloys of Al 20% Zn and 0.1-0.3% Zr or 0.1-0.2% Mg. Optimum conditions of heat and pressure treatment to assure lowest values of the ultrasound attenuation coefficient in the alloys were determined: for Al-Zn-Mg alloy homogenization of ingots at 500°, pressure treatment at 400°, annealing at 350° with subsequent cooling, resulting in no significant decomposition of the solid solution of Al, and natural aging; for Al-Zn-Zr alloy homogenization of ingots at 500° and pressure treatment at 450-500°. Four illustrations. Bibliography with four titles.

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USSR

UDC 669.715.3.85.86.018.29(088.8)

DRITS, M. Ye., KADANER, E. S., TOROPOVA, L. S., KOP'YEV, I. M., DEMIDOV, Yu. S.,
LEYKIN, A. I., YEGOROV, N. I. [Institute of Metallurgy imeni A. A. Baykov]

"Aluminum-Based Alloy for Foil"

USSR Author's Certificate No. 276419, Filed 13/11/68, Published 16/10/70.
(Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5, I748P).

Translation: The alloy has the following composition (%): Cu 0.5-2.0, at least one of the REM 0.1-0.5 and Zr 0.05-0.15, impurities ≤ 0.01 , remainder Al. The introduction of Cu and the rare and refractory metals increases its physical and mechanical properties. The alloy shows σ_b 30 kg/mm², withstands $30 \cdot 10^6$ cycles without rupture, and can be rolled into a foil 10-20 μ thick.

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USSR

UDC 669.715.22.85.86.296.018.2(088.8)

DRITS, M.Ye., KADANER, E. S., TOROPOVA, L. S., KOP'YEV, I.M., DEMIDOV, Yu.S.,
LEYKIN, A. I., YEGOROV, N. I.

"Aluminum-Based Alloy for Foil"

USSR Author's Certificate No. 276420, Filed 13/11/68, Published 16/10/70.
(Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5,
750P).

Translation: This alloy has the following composition (%): Ag 0.75-2, REM 0.1-0.5, Zr 0.05-0.15, impurities ≤ 0.01 , Al remainder, has high σ_b (26 kg/mm²) and high durability and stability of properties with cyclical loading, has good technological properties for rolling to a thickness of 10-20 μ ; the foil has good surface qualities.

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USSR

UDC 669.721.5.018.67

DRITS, M. Ye.

"Super-Light Magnesium-Based Alloys"

Metalloved. Splavov Legkikh Met. [Metal Science of Light Metal Alloys -- Collection of Works], Moscow, Nauka Press, 1970, pp. 171-176. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I687 by the authors).

Translation: Data are presented on the properties of Mg-Li alloys developed in the USSR. Examples are presented of the use of such alloys in the space, missile and aircraft industries of the USA. 1 fig; 2 tables, 16 biblio refs.

1/1

USSR

UDC 539.5

DRITS, M. Ye., ROKHLIN, L. L., SHEREDIN, V. V., SHULYGA, Yu. N., Moscow

"Influence of Certain Factors on Dissipation of Energy During Elastic Oscillations in Magnesium Alloys"

Problemy Prochnosti, No 10, 1971, pp 62-66.

Abstract: This work presents the result of a study of the damping ability of one class of structural materials broadly used in technology -- magnesium alloys. The interest in the damping ability of magnesium alloys results from the fact that magnesium and certain of its alloys are characterized by high attenuation of elastic oscillations. The damping ability of alloys was determined using a torsional pendulum with solid circular specimens with a gauge section diameter of 6 mm and a length of 50 mm with oscillations with an initial amplitude of $3.3 \cdot 10^{-4}$ at the surface of the specimen. The damping ability was characterized by the logarithmic oscillation decrement. The studies resulted in production of a new alloy with good damping qualities and increased strength.

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USSR

UDC 620.177.001.0090.701

D

DRITS, M. Ye., RANILIN, L. G., SHKILIN, V. V., and SHUL'GA, Ya. A., Institute
of Metallurgy Leonid A. A. Baikalov

"Magnesium Alloys With High Damping Capacity"

Moscow, Mashinovedeniye i Formicheskaya Obrabotka Metallov, No. 11, 1985, pp. 48-51

Abstract. This study discusses the basic properties of alloys of Mg with Mg-Zr, considers the effect of alloying, and mechanical and heat treatment on their damping ability, and compares their properties with those of Al, Cu, Zn, and zinc, and considerably surpasses that of aluminum, copper, chromium, and niobium. The Mg-Zr alloy has the same damping ability as pure magnesium. The mechanical properties and damping decrement of Mg-Zr alloys depend little on the casting conditions. The annealing of cast Mg-Zr alloys has no effect on their mechanical properties. The damping decrement during the aging of cast Mg-Zr alloys remains stable. The pressure treatment of Mg-Zr alloys reduces their damping ability. Reduction in the damping decrement during the reduction of strengthening additives into magnesium or Mg-Zr alloys can be explained by the fact that they retard the process of crystallization and increase the damping decrement of deformed alloys during recrystallization and grain growth. 1/1

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USSR

UDC: 624.072.21.075.04

DRIVING, A. YA., FEDOROV, YE. I. (Moscow)

"Concerning the Calculation of Rods of a Nonlinearly Elastic Material With Large Deflections"

Moscow, Stroitel'naya Mekhanika i Raschet Sooruzheniy, No 1, 1972, pp 43-45

Abstract: The authors obtain a visible analytic solution of the problem in a strict geometrically nonlinear formulation for a rod made of a nonlinearly elastic material and compare the obtained results with the results of a solution of the same problem in a geometrically linear formulation. The article deals with an eccentrically compressed rod of a nonlinearly elastic material with an ideal double-T cross section. A closed solution of the problem is obtained in a strict geometrically nonlinear formulation. Four figures, six references.

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USSR

UDC 621.385.832.C02:621.397.132:621.397.02

DRIVING, N.YA.

"Forming Residual Medium In Color Cathode-Ray Tubes With Experimental Vacuum-Pumping Assembly"

Tr. Mosk. in-ta elektron. mashinostr. (Works Of The Moscow Institute Of Electronic Machine Construction), 1972, Issue 20, pp 45-54 (from RZh:Elektronika i yeye primeneniye, No 8, August 1972, Abstract No 8A184)

Translation: During production of masked kinescopes for color television it is very important to assure protection of the vacuum space from oil vapors which are produced by oil-diffusion exhausts of the system, because these vapors harmfully affect the lifetime of the cathode and the luminophors of the screen. Consequently, a transition to non-oil methods of exhaust (turbomolecular, getter-ion, or magnetic sputter-ion pumps) is important. Preliminary tests were made of the evacuation of color television kinescopes with the aid of a Type NORB-100 sputter-ion pump. A preliminary discharge was attained by the VM-461 mechanical pump. Graphs are presented of the dependence of the change of pressure on the output of the exhaust unit [гнездо]. As a result, at the terminal stage of evacuation (after 5 hours) it was possible to assure a higher vacuum (above 10^{-5} mm of mercury). The new method is recommended for laboratory conditions of evacuation. For 1/2

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USSR

DRIVING, N.YA. Tr. Mosck.in-ta elektron.mashinostr., 1972, Issue 20, pp 45-54

factory conditions it is necessary to assure a reduction of the time for attainment of the necessary pressure and start-up of the NORD pump (~ 20 min). The spectrum of residual gases remained the standard for Type NORD pumps. It is necessary to make the final conclusion concerning the advisability of non-oil evacuation by Type NORD pumps on the basis of statistical data. A.A.

2/2

1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--FLUX FOR WELD DEPOSITING HARD ALLOYS WITH HIGH FREQUENCY CURRENT *2*
-U-

AUTHOR--(05)-LIPTUGA, I.V., ALAKSEYEV, I.L., CHEREPNEV, D.A., DRIVYKH,
N.A., TYUTYUNZHI, A.S.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,690
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

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

TOPIC TAGS--WELDING FLUX, WELDING TECHNOLOGY, HARD ALLOY, METAL DEPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1066

STEP NO--UR/0492/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130101

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AA0130101
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FLUX WITH A LOWER N.P. THAT
IMPROVES THE QUALITY OF THE BEADED METAL HAS THE FOLLOWING COMPN.: NA
SILICATE 18022, H SUB3 BO SUB3 58-67, SILICOCALCIUM 15-20PERCENT.
FACILITY: OKTYABR'SKAYA REVOLYUTSIYA, PLANT OF AGRICULTURAL EQUIPMENT
CONSTRUCTION, ODESSA.

UNCLASSIFIED

DRIZE, O. B.

JPRS 53872
SO: 43
02 June 71

UDC: 616-006-092.18

TRANSFORMATION OF A NORMAL DIFFERENTIATED CELL OF THE ADULT ORGANISM INDUCED BY FUSION OF THIS CELL WITH ANOTHER NORMAL CELL OF THE SAME ORGANISM BUT WITH DIFFERENT ORGANIC OR TISSUE SPECIFICITY
Article by L.B. Mekler, O.B. Drize, I.V. Gesechinsky, H.A. Shvartkevich, Institute of Experimental and Clinical Oncology, USSR Academy of Medical Sciences, Moscow; Moscow, Voenik Akademi Meditsinskikh Nauk SSSR, Russian, No 4, April 1971, pp 75-80

The central position of the theory of oncogenesis expounded by one of the present authors (L.B. Mekler, 1968, 1969, 1970) states that a normal cell becomes malignant, i.e. acquires the ability of anomalous growth and reproduction, invasion, metastases, and progression only when, by virtue of some causes or other (L.B. Mekler, 1968, 1969, 1970) on its surface appear some specific or tissue-specific antigens inherent to cells of other tissues or organs of the same organism. According to this theory, such a change in antigenic topography of a normal cell surface is sufficient, on the one hand, to remove this cell from the control of adjacent similar normal cells, and, on the other hand, to render it capable of effecting specific contacts with adjacent or distant cells of another tissue or organ. This must result in loss by the altered cell of sensitivity to contact inhibition and accumulation of the capacity to invade and metastasize precisely the tissues or organs whose specific antigens this cell acquired.

This approach to interpretation of the causes of transformation of a normal cell into a malignant one is basically different from the conventional views of the cause of this phenomenon which consider appearance on the surface of the transformed cells of antigens foreign to the organism induced by agents such as viruses or chemical carcinogens (L.A. Zil'ber, Koprowski et al.) to be the basis of malignant transformation of the cell (referring first of all to malignant transformation induced by viruses or carcinogenic chemical substances).

Although the literature describes a number of factors indirectly confirming the above theory, there is no question but that direct evidence is needed to test its validity.

Instruments and Measurements

UDC 621.582:621.517.799

USSR

MCSTOVLYANSKIY, N.S., DRIZE, YE.I., REBOTENKO, O.G.

"Current Generator For Observation Of Voltampere Characteristics"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), Issue 24, Moscow, "Sov.radio," 1970, pp 236-246 (from REZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 43600)

Translation: Conditions are formulated for oscilloscoping the voltampere characteristics of S-type double-poles with negative resistance. A practical circuit is described for a cathode-ray curve tracer with a pulse duration adjustable in the range of 0.1--2 microsec. The output stage, accomplished with a transistor and electron tubes, assures a differential output resistance $\geq 0.5 \text{ Mohm}$ with a load current in the hundreds of ma. 5 ref. Summary.

1/1

USSR

SHLANTSYASKAS, A. A., DRIZHYS, M.-R. M., ZHUKAUSKAS, A. A.

"Pulsations of Temperature in the Area of a Wall with Turbulent Flow Around a Plate by Viscous Fluids"

Tr. AN Lit SSR [Works of Academy of Sciences] Lithuanian SSR, 1971, B., No 2, (65), pp 143-152 by R. Sh Baynberg). (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1, 1972, Abstract No 1B827 by P. Sh. Baynberg).

Translation: Microthermocouples are used to study the pulsations of temperature in a turbulent boundary layer over a flat plate, around which water and transformer oil flow, with constant heat flux at the wall. The mean statistical characteristics of temperature pulsations are used to produce information on the behavior of the pulsation temperature field as a function of P and the distance to the wall. It is established that where $P > 1$ and $Re = 2 \cdot 10^6$, the viscous sublayer relates to the area of unstable flow with prevailing influence of viscous flow. Near the wall, a plane is detected with normal distribution of pulsation amplitude, relative to which perturbations are directed differently: in the viscous sublayer -- toward the wall, beyond this plane -- away from the wall.

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USSR

UDC 8.74

DANELYAN, T. YA., MEDVEDEV, V. D., DROBIN, S. V.

"Possible Direction of the Construction of an All-Purpose Algorithm for Non-syntactic Analysis of Language Programs"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 369-380 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V466)

No abstract

1/1

Superalloys

USSR

UDC: 546.781'261'73:669.018.25-973:620.178.16

SHNYREV, P. D. and DROBININ, I. N., Moscow Institute of Chemical Machinery

"Procedure of Studying the Wear of Tungsten Carbide-Cobalt Alloys in a Liquid Nitrogen Medium"

Moscow, Zavodskaya laboratoriya, Vol 38, No 2, 1972, pp 239-241

Abstract: The study concerns the relationships between friction wear and the physicomachanical properties of WC-Co hard alloys as well as between the wear and working conditions of friction pairs in a liquid nitrogen medium. The amount of wear during testing was determined by the loss in weight of the specimens. The per-unit loads ranged from 22.3 to 65 kg/cm³. The wear was also tested as a function of tungsten carbide grain size to determine the effect of hardness on wear. Involved were VK4, VK6M, VK8, VK10, VK11 and VK20 alloys with 4 to 20% (by vol.) Co as well as VK6OM, VK6M, VK6 and VK6V alloys with 4% Co. Of all these alloys, VK6OM exhibited minimum wear. The tests for wear resistance and friction included, among others, a plunger-bushing pair of the same alloy. The experimental results revealed the effect of diametral clearance (between the plunger and the bushing) and surface finish on the wear values of the friction pair. The

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USSR

SHNYREV, P. D., et al, Zavodskaya laboratoriya, Vol 38, No 2, 1972,
pp 239-241

data indicate regularities of changes in wear and potential applications of
the tested alloys in cryogenic technology. (3 illustrations, 1 bibliographic
reference)

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USSR

UDC 621.173.162.4

SHNYREV, P. D., Candidate of Technical Sciences, ~~DROBININ, I. N.~~, Candidate of Technical Sciences, docent, TUMANOV, V. I., Candidate of Technical Sciences, and GINZBURG, M. A., Engineer

"Friction Forces and the Coefficient of Friction During the Attrition of Hard Alloys in a Medium of Liquid Nitrogen"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 7, 1972, pp 28-31

Abstract: The results are presented of an experimental investigation of the friction forces and the coefficient of friction during the sliding friction of pairs of specimens of hard alloys VK60M and VK6 in a medium of liquid nitrogen. It was established that within the limits of change of the rate of friction from 0.2 to 0.4 m/sec, the coefficient of friction increases as the rate of friction increases, and with an increase of the load from 35 to 135 kg/cm² the coefficient of friction decreases. 4 figures. 1 table. 6 references.

1/1

USSR

UDC 669.275'25'784'018.25

SHNYREV, P. D., DROBININ, I. N., TUMANOV, V. I., GINZBURG, M. A., and SHNYREV, G. D.

"Investigation of Wear of Cermet Hard-Metal Alloys in Liquid Nitrogen Medium"

Issledovaniye iznosa metallokeramicheskikh tverdykh splavov v srede zhidkogo azota (cf. English above), Institute of Metallurgy, Academy of Sciences USSR, Moscow, 1971, 8 pp, ill, bibliography with five titles, No 3214-71 Dep (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 11820 Dep by authors)

Translation of Abstract: The work investigates the influence of Co content and grain size of tungsten carbide on the wear of WC-Co alloys during testing in liquid N₂ medium. The investigation reveals that wear increases with an increase in Co content; the magnitude of wear rises with an increase in WC-phase grain size; volume wear of WC-Co alloys of varying composition and with varying grain size of tungsten carbide is inversely proportional to Rockwell hardness. Three illustrations. One table. Bibliography of five titles.

1/1

1/3 022 UNCLASSIFIED PROCESSING DATE--02OCT70
 TITLE--MECHANISM OF THE DIENE SYNTHESIS WITH 5, ALKOXYOXAZOLES -U-
 AUTHOR--(05)--DROBINSKAYA, N.A., IONOVA, L.V., KARPEISKIY, M.YA., PADYUKOVA,
 N.SH., TURCHIN, K.F. **D**
 COUNTRY OF INFO--USSR
 SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 37-42
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MOLECULAR STRUCTURE, CONDENSATION REACTION, ORGANIC AZOLE
 COMPOUND, CHEMICAL SYNTHESIS, ISOMERIZATION, PYRIDINE, CHEMICAL REACTION
 MECHANISM, ACETYLENE, ELECTRON DENSITY

CENTRAL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1986/1368

STEP NO--UR/0409/70/000/001/0037/0042

CIRC ACCESSION NO--APO103222

UNCLASSIFIED

2/3 022

UNCLASSIFIED

PROCESSING DATE--02NOV70

CIRC ACCESSION NO--AP0103222

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HETERODIENE CONDENSATION OF 5, ALKOXYOXAZOLES TAKES PLACE IN TWO STAGES: REACTION OF OXAZOLES WITH DIENOPHILES GIVING UNSTABLE ADDUCTS, AND ISOMERIZATION OF THESE ADDUCTS TO SUBSTITUTED 3, HYDROXYPYRIDINES. THUS, ET BETA, ACETYLACRYLATE (I) REACTS WITH 4, METHYL, 5, ETHOXYOXAZOLE (II) TO GIVE 2, METHYL, 3, HYDROXY, 4, ACETYL, 5, CARBETHOXYPYRIDINE (III) THROUGH THE UNSTABLE ADDUCT .IIIA. THIS MECHANISM IS SUPPORTED BY PI ELECTRON DENSITY CALCNS. FOR I AND II, ACTUAL ISOLATION OF III AS THEIR MAIN REACTION PRODUCT, ITS CHEM. CONVERSION, AND FINALLY BY PMA AND IR STUDIES. REACTIONS BETWEEN II AND BETA, ACETYLACRYLIC ACID (GIVING 2, METHYL, 3, HYDROXY, 5, ACETILPYRIDINE) (IV), AND BETWEEN I AND CYCLOPENTEN, 3, ONE (FORMING 5, METHYL, 4, HYDROXY, 6, AZAHYDRINDEN, 3, ONE) (V) ALSO VERIFIED THIS TYPE OF MECHANISM. THUS, TO A SOLN. OF 17.9 G I IN 20 ML ABS. ET SUB2 O WAS ADDED 8.87 G II, 1 ML ACOH, AND 200 MG HYDROQUINONE, AND THE SOLN. KEPT 1 WEEK AT ROOM TEMP. IN THE DARK TO GIVE 8 G III, M. 151-20DEGREES (HEPTANE). A SOLN. OF 2.5 G II AND 3.42 G BETA, ACETYLACRYLIC ACID IN 40 ML ABS. ET SUB2 O WAS KEPT 5 DAYS UNDER A CACL SUP2 TUBE TO GIVE 0.64 G IV, M. 253-4DEGREES (DECOMP.) (MEOH). TO A SUSPENSION OF 1.14 G LIALH SUB4 IN 50 ML THF WAS ADDED DROPWISE WITH COOLING 2.1 G III IN 50 ML THF, AND THE MIXT. REFLUXED 6 HR AND LEFT OVERNIGHT AT ROOM TEMP. TO GIVE 1.74 G 2, METHYL, 3, HYDROXY, 4, (ALPHA, HYDROXYETHYL), 5, HYDROXYMETHYLPYRIDINE, M. 172-3DEGREES (ETOH-ET SUB2 O).

UNCLASSIFIED

3/3 022

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0103222

ABSTRACT/EXTRACT--A MOXT. OF 0.8 G CYCLOPENTEN,3,ONE, 0.63 G II, AND 0.1 G PYROGALLOL WAS HEATED 2 HR AT 110DEGREES, COOLED, TREATED WITH 1 ML 25PERCENT DRY HCL IN ETOH, CAREFULLY SHAKEN WITH 70 ML ABS. ET SUB2 O, AND LEFT OVERNIGHT IN A REFRIGERATOR TO GIVE 0.22 G V, M. LARGER THAN 170DEGREES (ETOH-ET SUB2 O).

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--DYNAMICS OF ANION EXCHANGE IN ALCOHOLIC AQUEOUS MEDIA -U-
AUTHOR-(G3)-TOLMACHEVA, YU.A., DAVYDOV, A.T., DROBNITSKAYA, N.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(1) 194-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ION EXCHANGE RESIN, ETHANOL, AQUEOUS SOLUTION, CHLORINATED ORGANIC COMPOUND, NITRATE, THIOCYANATE/UMAB17 ION EXCHANGE RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0474 STEP NO--UR/0076/70/044/001/0194/0197
CIRC ACCESSION NO--AP0107080
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107080

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE DEPENDENCE OF THE ION EXCHANGE
CONSTS. OF THE SYSTEMS RCL-NO SUB3 PRIME NEGATIVE AND RCL-NCS PRIME
NEGATIVE ON THE COMPN. OF H SUB2 O-ETOH MIXYS. WAS DETD. BY USING THE
AB-17 ION EXCHANGE RESIN. INCREASED ETOH CONTENT LEADS TO A BROADENING
OF THE SORPTION FRONT, ASCRIBED TO A REDN. OF THE ION DIFFUSION RATE IN
THE RESIN GRAIN.

UNCLASSIFIED

USSR

UDC 669.71.472

AMEL'KOVICH, D. I., VEDERNIKOV, G. F., DROBNIS, V. F., KLETSKO, N. L., OGURTSOV, G. M., SHIFMAN, G. A.

"Selection and Testing of Carbon Mass for Fastening of Nipples in Roasted Anodes"

Tr. Vses. N-i. 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. 71, pp. 111-117. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G156 by the authors).

Translation: Results are presented from laboratory and industrial testing of roasted anodes with nipples fastened in their carbon masses. The mass was packed into anodes with one square or cylindrical nipple receiver. The thickness of the layer of packed mass was 10-15 mm. The method of fastening of the nipples into the roasted anodes using the carbon mass allowed reliable suspension of the anodes, significantly decreased the voltage drop at the nipple-anode contact, and also simplified the process of pressing of anodes due to the elimination of the screw thread in the nipple receptacle. 4 figs; 2 tables.

1/1

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--RHENIUM OXYCHLORIDE ALUMINUM CHLORIDE ,FERRIC CHLORIDE, TANTALUM,V,
CHLORIDE, NIOBIUM,V, CHLORIDE, MOLYBDENUM OXYCHLORIDE, PHOSPHORYL
AUTHOR-(04)-DROBOT, D.V., KORSHUNOV, B.G., ALEKSANDROVA, V.A., SILINA,
T.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(6), 1707-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE DIAGRAM, CHEMICAL BINARY SYSTEM, OXYGEN COMPOUND,
RHENIUM COMPOUND, CHLORIDE, IRON COMPOUND, MOLYBDENUM COMPOUND, TANTALUM
COMPOUND, NIOBIUM COMPOUND, ALUMINUM COMPOUND, PHOSPHOROUS COMPOUND,
EUTECTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/1186

STEP NO--UR/0078/70/015/006/1707/1708

CIRC ACCESSION NO--AP0138201

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138201

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT, PHASE DIAGRAMS OF REOCL SUB4 A (A
EQUALS FECL SUB3, RECL SUB5, TAEL SUB5, NBCL SUB5, ALCL SUB3, MOOCL
SUB4, AND POCL SUB3) ARE CONSTRUCTED. THE BINARY SYSTEM CONTG. POCL
SUB3 FORMS REOCL SUB4 POCL SUB3, CONGRUENTLY M. 80DEGREES. THIS
COMPOUND FORMS EUTECTICS CONTG. 3 AND 80 MOLE PERCENT REOCL SUB4, M.
NEGATIVE 10 AND 16DEGREES, RESP. THE REMAINING SYSTEMS FORMED ONE
EUTECTIC EACH CONTG. ALMOST PURE REOCL SUB4 AND ALL M. 29DEGREES.

FACILITY: MOSK. INST. YONKOI KHIM. TEKHNOL IM. LOMONOSOVA, MOSCOW,
USSR.

UNCLASSIFIED

USSR

UDC 576.895.771.097.22:615.285.7

DROBOZINA, V. P., Department of Medical Entomology, Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martynovskiy, Ministry of Health USSR

"Development of Resistance to DDT in *Musca domestica* Given Sublethal Doses of Sodium Arsenate"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 6, 1971, pp 695-701

Abstract: The regular addition of sublethal doses of sodium arsenate to the food (milk and glucose solution) of two *Musca domestica* strains (Norma and SRS²) failed to induce resistance to this inorganic poison through 30 and 11 successive generations of the SRS² and Norma strains, respectively, flies' resistance to DDT was increased more than 200-fold. However, sublethal doses of sodium arsenate had not effect on resistance to the organophosphorus insecticides chlorophos and phenitrothion. None of the various reasons suggested for the development of resistance to insecticides, e.g., existence of a single mechanism of protection against two or more poisons or closeness on the chromosome of the genetic factors governing different mechanisms of resistance, accounts for the phenomenon observed in the experiments reported (resistance to another insecticide in the absence of the one tested), which the author calls "side" resistance in contrast with "cross" or "multiple" resistance. 1/1

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USSR

UDC 632.015

DUBROVSKAYA, N. A., Head of the Laboratory of Plant Protection, Kursk Agricultural Experimental Station, and DROBYAZFINA, YE. A., Senior Laboratory Assistant

"On the Duration of Action of Organophosphorus Preparations."

Moscow, Zashchita Rasteniy, No 6, Jun 73, p 28

Translation: At present, from among organophosphorus insecticides a wide application have gained preparations based on dimethoate (Rogor, phosphamide, Bi-58 [sic], and others), whose characteristic feature is considerable duration of their action. But this characteristic is variable, It may vary depending on the species, variety and stage of development of the protected plant, on climatic conditions, and other factors.

We have studied in Kurskaya Oblast the duration of action of Bi-58, used against *Sitobion avenae* F., and other pests, on spring wheat of the Khar'kovskaya-46 variety and on barley of the Val'titskiy variety. Two field and one greenhouse experiments were staged.

In the first experiment spring wheat was treated with 0.2% solution at the stage of germination (10 May). The control plots, separated by a 5-m wide protective strip, were simultaneously sprayed with tap water. The
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USSR

DUBROVSKAYA, N. A., and BROBYAZGINA, Y. A., Zashchita Rasteniy, No 6, Jun 73,
p 28

fluid consumption was 500 l/hectare, repetition -- threefold, area of record plots -- 100 m².

To determine technical effectiveness and duration of action of the preparation, the estimates of the number of insects on the plants of a single row of the plot (32 lin. m.) were made at intervals of 2-3 days. Difference between the experiment and control were determined by the method of conjugate comparisons according to Student's criterion at 5% confidence limit.

It was found that the number of leaf pests already after 6 days, and that of Sitobion after 6 days, did not differ in the experiment from that in the control. Under field conditions this could be the result not only of the loss of toxicity but could be also caused by other factors, for example, by the increase of the mobility of insects and that of the intensity of their migrations. Additionally, the toxicity of plants was determined by the method of biological tests, viz., the pests were placed on the leaves cut from experimental and control plants and put in the humid chambers, where they were feeding for 24 hours and then were transferred to test tubes, and
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USSR

DUBROVSKAYA, N. A., and BROBYAZGINA, Y. A., Zashchita Rasteniy, No 6, Jun 73,
p 28

after another 24 hours their lethality was determined.

The residual toxicity was preserved in some places up to 18 days after treatment. During this period the green mass of plants was rapidly and intensively increasing and, consequently, the concentration of the preparation in it was correspondingly decreasing, which was not without influence on the strength and duration of its action.

The second experiment differed only in the time of treatment -- 24 June. It was times to that it coincided with a period of the cessation of the growth of green mass as well as with a seasonal peak in the numbers of *Sitobion avenae* F. The difference in the number of *Sitobion* and thrips was maintained for 22 days (further observations were discontinued due to the harvesting).

The final solution of the problem was provided by the greenhouse experiment. Onto pesticide-treated potted plants of spring wheat and barley *Sitobion* were placed within 24 hours after treatment, and after 7, 13, 21, and 29 days, and the pots were covered with glass bell jars. The plants remained toxic for pests for 21 days, and thereafter the numbers of the latter sharply increased.

Consequently, the duration of action of the preparation may considerably exceed the limits indicated in the directions for its use.

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USSR

UDC 539.4

TRAKHTENBERG, B. F., IVANOV, A. I., DROBYAZKO, I. S.

"Study of the Post-Cycle Strength Characteristics of Tool Steel"

V sb. Dinamika, prochnost', kontrol' i upr. -- 70 (Dynamics, Strength, Monitoring and Control -- 70--collection of works), Kuybyshev, 1972, pp 209-213 (from RZh--Mekhanika, No 6, Jun 73, Abstract No 6V961)

Translation: A basis is provided for the necessity of studying the post-cyclic strength of tool steel. The information about the post-cyclic strength is the initial information for optimizing the heat refined conditions and selecting the tool steel for specific operating conditions. In the example of investigating 3Kh2V8F, 5Kh4SV4MF and 4Kh3VMF steel, the complex dependence of the post-cyclic hot strength on the heat treatment conditions is demonstrated, and the correlation is constructed for the hot post-cyclic ultimate strength as a function of the life of the dies.

1/1

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ДРОБЫШЕВ Г. Ф.

ГЫРОСКОП

SO: TPAS 87746
18 Dec 1972
149A

Зарядная система UDC 537.21:621.319.01.001

GENERATION OF FORCES IN ELECTROSTATIC GYROSCOPE (ESG) WITH SPHERICAL ROTOR
Article by G. F. Drobyshev, V. V. Timofeyev, Moscow Higher Technical Institute
Imeni N. E. Bauman; Leningrad, Институт имени Н. Э. Баумана, Russian,
No 9, 1972, submitted 9 July 1971, pp 91053

Electrical suspension of a ball is examined in the article from the point of view of generation of forces with electrodes of different configuration. A finite equation for engineering calculations of the electrical forces, which takes into account the mutual effects of the potentials of adjacent electrode pairs, is derived as a result of the analysis.

Analysis of electrostatic suspension of the pilot ball of ESG in the framework of linear theory [1] may be inadequate for the action of considerable accelerations, when the deviation of the center of gravity of the sensor exceeds the tolerable limit.

Examined in the article is the procedure of calculating the electrical forces in ESG during possible displacements of the center of gravity of the rotor beyond the range of small deviations, in the direction of stabilization axes X, Y, z (figure 1) with consideration of the mutual influences of the potentials of the adjacent electrode pairs.

The forces are determined on the basis of calculation of the field intensity in the gap of the 1-th rotor electrode, proceeding from the concept of surface density of forces. In an electrostatic field, per unit of area of a conductor of any shape, acts the force [1]

$$dF = \frac{1}{2} \sigma E_n \quad (1)$$

where $f = \frac{1}{2} E_n$ is the surface density of forces; E_n is the exterior normal to element dS from the surface of the conductor. The scalar product of the vectors for an isotropic medium is $E_n = \frac{1}{\epsilon} E^2$.

Архив

USSR

UDC: 548.0:538.22

AL'SHIN, B. I., ZORIN, R. V., DROBYSHEV, L. A., and STEPANISHCHEV, S. V.

"Magnetic Characteristics of Lead Manganate Monocrystals"

Moscow, Kristallografiya, vol 17, No 3, 1972, pp 562-565

Abstract: The monocrystals whose magnetic characteristics are investigated in this paper have the formula $PbMn_2O_4$ and were grown from the solution $PbMn_{2/3}W_{1/3}O_3$ in a $PbO-PbF$ melt in the form of a truncated hexagonal pyramid with a height of about 1 mm and a length of 1.5-2.0 mm along a side of the hexagon. Magnetic measurements of the crystals were made by the Faraday method with twisting weights on a quartz thread in a cryostat to provide a temperature range of 1.5 to $300^{\circ}K$. The measurement results indicated that the material transformed to a weakly ferromagnetic state at a temperature of $63^{\circ}K$, with the spontaneous magnetic moment lying in the base plane of the crystal. Curves are given for the magnetization as a function of the magnetic field in which the crystals were placed and as a function of the field at various temperatures ranging from 30 to $53^{\circ}K$. Investigation of the effect of an electric field on the crystal's magnetic characteristics showed that for an electric field intensity

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AL'SHIN, B. I., et al, Kristallografiya, vol 17, No 3, 1972, pp 562-565

greater than the critical value, no marked change occurs in the magnetization curves, which fact is interpreted to mean that at temperatures below 39° K the spontaneous magnetic moment is maintained in a definite position by the internal antiferroelectric fields of the crystal.

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USSR

D

BELOV, N. V.; DROBYSHEV, L. A.; et al (Moscow State University)

"Praseodymium Molybdate $\text{Pr}_2(\text{MoO}_4)_3$ "

Moscow, Kristallografiya; May-June, 1970; pp 461-5

ABSTRACT: An X-ray and thermographic study of praseodymium molybdate has led to the discovery of a hitherto unknown LD-modification $\text{Pr}(\text{MoO}_4)_3$. The formation of an N-modification with heat treatment above 1060°C was established and the formation of an H-modification in the interval $732-990^\circ\text{C}$ was confirmed. High-temperature roentgenography and thermography of the N-modification showed six phase transitions, two of which are accompanied by significant changes. Preliminary X-ray diffraction studies of single crystals of the H-modification $\text{Pr}_2(\text{MoO}_4)_3$ were made.

The article includes two figures and three tables. There are 8 references.

1/1

1/2 035 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--PHASE TRANSFORMATIONS OF GADOLINIUM MOLYBDATE AND ISOSTRUCTURAL
COMPOUNDS -U-
AUTHOR--~~DRABYSHEV, L.A.~~, FROLKINA, I.T., PONOMAREV, V.I., TOMASHPOLSKIY,
YU.YA., VENEVTSEV, YU.N.
COUNTRY OF INFO--USSR
SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 68-74
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--PHASE TRANSFORMATION, X RAY ANALYSIS, MECHANICAL PROPERTY,
ELECTRICAL PROPERTY, MOLYBDATE, GADOLINIUM COMPOUND, EUROPIUM, TERBIUM,
DYSPROSIUM, HOLMIUM, NEODYMIUM LASER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0117 STEP NO--UR/0070/70/015/001/0068/0074
CIRC ACCESSION NO--AP0054913
UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0054913

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHASE TRANSFORMATIONS OF THE L
MODIFICATION OF GD, EU, TB, DY, AND HO MOLYBDATES USED FOR QUANTUM
ELECTRONICS WERE INVESTIGATED BY USING X RAY AND THERMOGRAPHIC METHODS.
A RELATION WAS ESTABLISHED BETWEEN THE STRUCTURAL CHANGES AND PHYS.
PROPERTIES OF THESE COMPOS. THE OCCURENCE OF SEIGNETTE ELEC. PROPERTIES
WERE NOTED IN THE TETRAGONAL L MODIFICATIONS OF EU, TB, DY, AND HO
MOLYBDATES AT IS LESS THAN 192, 165, 158 AND 134DEGREES, AND ON THIS
BASIS, THE POSSIBLILITY WAS CONSIDERED OF USING THESE COMPOS. AS ACTIVE
MATERIALS FOR ND ACTIVATED LASERS, THE MAGNETIC ORDERING OF THESE
COMPOS. AT DEFINITE TEMPS. WAS ALSO CONSIDERED. THE TEMP. CHANGES OF 2
TYPES OF PHASE TRANSFORMATIONS (SEIGNETTE ELEC. AND TRANSFORMATIONS WITH
CRYSTAL DECAY) WERE DEPENDENT ON THE AT. NO. OF THE RARE EARTH ELEMENT.
THE EXISTENCE OF A GD SUB2(MOO SUB4) SUB3 TETRAGONAL MODIFICATION WITH
ALPHA EQUALS 7.25 AND C EQUALS 10.58 ANGSTROMS WAS ALSO VERIFIED.

UNCLASSIFIED

1/2 C22 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--PRASEODYMIUM MOLYBDATE PR SUB2, MOO SUB4, SUB3 -U-

AUTHOR--(C2)-BELOV, N.V., DROBYSHEV, L.A. D

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KRISTALLOGRAFIYA; MAY-JUNE, 1970, PP 461-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--SINGLE CRYSTAL, X RAY ANALYSIS, THERMAL ANALYSIS, MOLECULAR
STRUCTURE, PRASEODYMIUM COMPOUND, MOLYBDATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----F070/605003/C12 STEP NO--UR/0070/70/000/000/0461/0465

CIRC ACCESSION NO--AP0139522

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--11DEC79
CIRC ACCESSION NO--AP0139522
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN X RAY AND THERMOGRAPHIC STUDY
OF PRASEODYMIUM MOLYBDATE HAS LED TO THE DISCOVERY OF A HITHERTO UNKNOWN
LD-MODIFICATION PR(MOO SUB4) SUB3. THE FORMATION OF AN N-MODIFICATION
WITH HEAT TREATMENT ABOVE 1060 DEGREES C WAS ESTABLISHED AND THE
FORMATION OF AN N-MODIFICATION IN THE INTERVAL 732-990 DEGREES C WAS
CONFIRMED. HIGH TEMPERATURE ROENTGENOGRAPHY AND THERMOGRAPHY OF THE
N-MODIFICATION SHOWED SIX PHASE TRANSITIONS, TWO OF WHICH ARE
ACCOMPANIED BY SIGNIFICANT CHANGES. PRELIMINARY X RAY DIFFRACTION
STUDIES OF SINGLE CRYSTALS OF THE N-MODIFICATION PR SUB2 (MOO SUB4) SUB3
WERE MADE. FACILITY: MOSCOW STATE UNIVERSITY.

UNCLASSIFIED

USSR

UDC 621.396.6-161.5

D
DROBYSHEV, Ye. P., DOL'NIKOV, S. S., KUDRYASHOV, A. G.

"Improving the Reliability of Mounting Silicon Microcircuits"

Elektron. prom-st'. Nauchno-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1970, No 1, pp 100-102 (from RZn-Radiotekhnika, No 10, Oct 70, Abstract No 10V170)

Translation: The authors discuss the basic factors which determine the reliability of contacts produced by means of interlayers of low-temperature alloys, specifically Au-Ge and Au-Si eutectics made by electrochemical gold-plating of germanium and silicon crystals. The requirements for the interlayers and coatings of the mounting areas of the housing are discussed. Three illustrations, bibliography of two titles. N. S.

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USSR

DROBYSHEV, YU. P.

It is assumed here that $f(x)$, $\phi_i(x)$, $i = 1, \dots, n$, and $\psi(x)$ belong to the Hilbert space with norm $\|h\| = \sqrt{(h, h)}$. The solution of the problem consists of sampling of functions $p_i(x)$ which have the minimum

$$M \left\{ \frac{1}{T} \int_0^T |f(x) - f_n(x)|^2 dx \right\}.$$

In the case when $\phi_i(x)$, $i = 1, 2, \dots, n$ is a full system in L_2 ,

$$P_i(x) = \sum_{j=1}^{\infty} b_{ij} \psi_j(x).$$

and b_{ij} are determined from a denumerable system of linear equations. Also, two particular cases are illustrated when the linear system for determination of b_{ij} is finite.

USSR

UDC 628.1.034:628.175:541.13

SHAPOSHNIK, V. A., RESHETNIKOVA, A. K., ZOLOTAREVA, R. I., DROBYSHEVA, I. V.,
and ISAYEV, N. I., Voronezh Technological Institute

"Water Demineralization by Means of Electrolysis With Intermembrane Ion
Exchange Resin Filling"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 46, No 12, Dec 73, pp 2659-2663

Abstract: A method was developed for production of highly desalinated water with a specific resistance of 15-20 MΩ·cm, based on a two-step electro-dialysis combined with intermembrane filling of the desalination sections with a mixed layer of ion exchange resins KU-2 and AV-17. A preliminary sodium cationization had to be carried out in this process. It has been determined that filling the electro-dialyzer sections with a mixed layer of the ion exchange resins increases the specific density of the current.

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USSR

UDC 541.135

ISAYEV, N. I., DROBYSHEVA, I. V., Voronezh. Technological Institute

"The Transition Time for Ion-exchange Membranes in Electrodialysis with Ion-exchange Fillers"

Moscow, Elektrokimiya, Vol VII, No 10, pp 1545-1548

Abstract: Results are presented from determining the magnitude of the transition time for ion-exchange membranes in the presence of ion-exchangers in the desalination chamber of an electrodialyzer, and the applicability of the Sand equation [H. J. S. Sand, Z. Phys. Chem, No 35, 641, 1900]:

$$\tau^{1/2} = \frac{zFc_0}{2i(1-t)} (\pi D)^{1/2}$$

to the given systems is demonstrated. Graphs are presented for the variation of the voltage drop on the MK-40 membrane and in the layers of electrolyte adjacent to it with time in a 0.01 N solution of calcium chloride in the presence of KI-2 cation-exchange resin, AV-17 anion-exchange resin,

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USSR

ISAYEV, N. I., et al, *Elektrokhimiya*, Vol VII, No 10, pp 1545-1548

mixtures of these two resins, and without a filler. Values of $it^{1/2}$ are presented in a table for the MK-40 membrane in the presence of various ion-exchange resins. Graphs are plotted for $\tau^{-1/2}$ as a function of the polarizing current density in the system made up of the cation-exchange membrane and the cation-exchange resin for various concentrations of the calcium chloride solution, $it^{1/2}$ as a function of the concentration of the calcium chloride solution for the MK-40 membrane in the presence of the mentioned ion-exchange resins. These functions form straight lines the slope of which depends on the type of ion-exchange resin in contact with the membrane. The data obtained indicate the effect of the ion-exchange fillers on the magnitude of the transition time arises from the change in the working surface of the membrane. In the case of contact between a membrane and an ion-exchange resin with opposite signs of the fixed ion charge, there is partial shielding of the membrane surface. The true current density on the membrane becomes higher than that determined by the apparent surface. For this reason, the transition time is reduced. At the interface between the membrane

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USSR

ISAYEV, N. I., et al, Elektrokimiya, Vol VII, No 10, pp 1545-1548

and the ion-exchange resin with opposite signs of the fixed ion charge, on the other hand, flowing of the current leads to a decrease in the concentration of the solution which promotes a reduction in the transition time. In the case of contact between a membrane and an ion-exchanger with the same signs of the fixed ion charge, the membrane surface increases, and the transition time increases correspondingly.

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USSR

UDC 911.3.616.9:576.89(571.1)

STOLBOV, N. M., and DROBYSHEVA, S. A.

"Mass Attack of Dermanyssidae (Gamasoidea) Ticks on Humans in Western Siberia"

V sb. Vtoroye Akarologicheskoye soveshchaniye. Ch. 2. Tezisy dokl. (Second Acarological Conference. Part 2. Theses of Reports -- collection of works) Kiev, "Nauk. Dumka," 1970, pp 146-147 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.44)

[No abstract]

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USSR

UDC 621.762:001:669.71

DROBYSHEVSKIY, A. Ye.

"Mechanical Properties of Pressed Intermediate Products of Granulated Aluminum Alloys"

Vopr. Prochnosti i Plastichnosti Met. [Problems of Strength and Ductility of Metals -- Collection of Works], Minsk, Nauka i Tekhn. Press, 1971, pp 200-202, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G459 by the author).

Translation: Results are presented from a study of the mechanical properties of pressed bars of granules of the alloys Al3, Al9, as well as alloys of Al with various contents of Fe. The mechanical properties of bars produced of the granules is higher than that of pressed bars of cast compact blanks of the same alloys. 1 Table.

1/1

USSR

UDC: 533.95

GANNITSKIY, A. I., DEBYSHESKIY, E. M., ROZOV, S. I.

"Concerning the Effect of Hydrodynamics on the Distribution of Charge Carrier Concentration in a Homopolar Generator"

V sb. Vopr. fiz. nizkoterperatur. plazmy (Problems in the Physics of Low-Temperature Plasma--collection of works), Minsk, "Nauka i tekhn.", 1970, pp 327-330 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B96)

Translation: The paper deals with the problem of the effect of hydrodynamic flow on ionization-diffusion equilibrium of the discharge in the transverse magnetic field of a homopolar generator. The case where the velocity of hydrodynamic flow is comparable in magnitude with the rate of diffusion of the charged particles is considered. Hydrodynamic equations of motion of an incompressible gas are solved simultaneously with the equations of diffusion-ionization equilibrium. The results of computer calculations are given for a discharge in argon when the temperatures of the ions and neutral particles are equal to 500°K, the pressure is 0.1 mm Hg, the magnetic field is 1000 G, and the current is 10 A. V. P. Shimchuk.

1/1

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1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--UNSTEADY PROCESSES IN HOMOPOLAR APPARATUS -U-
AUTHOR--(03)-DROBYSHEVSKIY, E.M., STUDENKOV, A.M., PEKNOV, L.A.
COUNTRY OF INFO--USSR **D**
SOURCE--ZH. TEKH. FIZ. 1970, 40(2), 346-54
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--PLASMA DIFFUSION, MAGNETIC FIELD, PLASMA DISCHARGE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1979/1602 STEP NO--UP/0057/70/040/002/0344/0354
CIRC ACCESSION NO--AP0047924
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--1RSEP70

CIRC ACCESSION NO--AP0047924

ABSTRACT/EXTRACT--(U) GR-O- ABSTRACT. THE CHARACTERISTIC PHASES OF THE DISCHARGE AT LOW CURRENTS (1-4A) WERE STUDIED, AND A RELATION BETWEEN THE V-A CHARACTERISTICS AND THE DISCHARGE SPACE WAS POINTED OUT. IN THE INITIAL PHASE, 2 DISTINCT PROCESSES ARE CONNECTED WITH THE ANISOTROPY OF PLASMA DIFFUSION IN A MAGNETIC FIELD. A SIMPLE THEORETICAL MODEL WAS DERIVED FOR THE STEADY IONIZATION DIFFUSION EQUIL. THE EFFECT OF IMPURITIES ON THE APPEARANCE OF UNSTEADY PROCESSES IS DISCUSSED.

UNCLASSIFIED

USSR

UDC 8.74

DROGAL', T. G.

"Construction of the Reciprocal Model of the Logical-Dynamic Element"

V sb. Sistemotekhnika (Systems Engineering--collection of works), Kiev, 1971,
pp 241-254 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V439)

No abstract

1/1

USSR

UDC 617-001.21-02:538.3-092:616-008.9

PAVLOVA, I. V., ~~DROGICHINA, E. A.~~, SADCHIKOVA, M. N., and GEL'FON, I. A., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow

"The Role of Some Biochemical Disturbances in the Pathogenesis of Radiation Sickness"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 20-23

Abstract: The results of an analysis of biochemical indices in 70 patients with different forms of chronic exposure to the effects of microwaves are reported. The patients were 28-39 years old, with 5-10 years of service. Several deviations from normal levels were observed: disproteinemia, due to increased β - and γ -globulins, and low mercury bichloride test, while the activity of liver enzymes appeared to be normal. About half of the patients showed high levels of cholesterol, and 2/3 had low blood levels and high urinary excretion of chlorides. Blood sugar levels after a glucose load were within the normal range, but atypical. These shifts indicate disruption of mechanisms regulating the activity of the sympathetic-adrenal system, including shifts in the functional condition of the hypothalamus-hypophysis-adrenal system.

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1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--COMPARATIVE EVALUATION OF THE COMPOSITION OF FRACTIONAL
DISTILLATION ALCOHOL DEVELOPED USING AN ASP,ERGILLUS, BATATAE 61 CULTURE
AUTHOR--(02)-SUKHODOL, V.F., DROGOVOZ, G.K.

COUNTRY OF INFO--USSR

SOURCE--FERMENT. SPIRT. PROM. 1970, 36(2), 12-14

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--ETHYL ALCOHOL, CHEMICAL ANALYSIS, ASPERGILLUS, UV SPECTROSCOPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/2020

STEP NO--UR/0071/70/036/002/0012/0014

CIRC ACCESSION NO--AP0137195

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137195

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OFFICIAL SPECIFICATIONS FOR ANALYZING ETOH PREPD. INDUSTRIALLY IN 2 COLUMN EQUIPMENT CALL FOR TOO SLOW A METHOD. BECAUSE THE IMPURITIES IN INDUSTRIAL ETOH, LIKE ACH, FUSEL OIL, FREE ACID, AND HIGER ESTERS, ALL SHOW A PRONOUNCED ABSORPTION IN THE UV REGION OF THE SPECTRUM, A METHOD WAS DEVELOPED WHEREBY UNDER USE OF THE UV SPECTROGRAPH IN A CELL OF 50 MM OPTICAL PATH LENGTH AT A TEMP. OF 20 PLUS OR MINUS 1DEGREES THE ABSORBANCES WERE DETD. AT 2200 AND 2500 ANGSTROM. THIS ALLOWS RAPID ROUTINE ANAL. OF THE PURITY OF THE ETOH.

UNCLASSIFIED

USSR

UDC 612.357.32.014.481.1

SKAKUN, N. P., and DROGICHOZ, S. M., Chair of Pharmacology Ternopol Medical Institute

"Effect of Whole-Body X-ray Irradiation on the Synthesis of Bile Acids in Female Albino Rats (Chromatographic Study)"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 9, Sep 70, pp 40-41

Abstract: It was established experimentally that an inhibition of all steps in the synthesis of bile acids in the liver occurs during acute radiation sickness. Female albino rats weighing 130-160 g were used. Secretion of bile in mg/min per 100 g body weight was determined, as well as the content of cholates. The formation of primary bile acids from cholesterol and the conversion of desoxycholic acid into cholic acid were particularly impaired. Conjugation of free bile acids into taurocholic and glycocholic acids was also impeded, especially during the later stages of radiation sickness. In these stages, the concentration of cholic acid in bile rises, there is a decrease of taurocholic acid, and glycocholic acid disappears completely from the bile.

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USSR

UDC 612.357.15.014.46:576.851.252.097.29

DROGOVOZ, S. M., Chair of Pharmacology, Ternopol Medical Institute

"The Effect of Staphylococcus Toxin on Cholanopolesis"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 5, 1970, pp 46-48

Abstract: Staphylococcus toxin 1:20 dilution produced a sharp and prolonged inhibition of bile formation and synthesis of bile acids in rats. The concentration of cholates decreased mainly due to decrease in the level of taurocholic acid. The total amount of cholates following injection of a large dose of the toxin was reduced from 12,304 to 8,334 $\mu\text{g}/100 \text{ g}$, or 32.3%. There was also a sharp decrease (close to total disappearance) in the concentration of glycocholic acid. On the other hand, the concentrations of desoxycholic and cholic acids increased. Staphylococcus toxin appears to inhibit the biochemical processes responsible for the conversion of desoxycholic acid into cholic acid and of cholic acid into conjugated acids.

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Acc. Nr: AF0037016

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskii Zhurnal SSSR, 1970, Vol 56,
Nr 2, pp 273-278

EFFECT OF BILE ACIDS ON BILIATION INTENSITY AND CHOLATE
FORMATION

Skakun, N. P.; Drogovoz, S. M.; Bezkorovaynaya, N. M.

From the Department of Pharmacology, Medical Institute, Ternopol

Comparative studies of bile acid preparation effect (dehydrocholic, cholic and gly-
cholic) on the biliation intensity and cholate formation have been carried out in 66 male
white rats. Dehydrocholic acid has the most marked choleric effect, natural bile acids
being considerably less active in this respect. The activity of cholic and glycholic acids
in equimolecular doses is nearly similar.

Natural bile acids are more active in their cholate formation effect. Even in small
doses they favour a sharp rise in the concentration and quantity of cholates. This is mainly
due to the effect of the tauric cholic acid and in a lesser degree to the glycholic and dezo-
xycholic acids. In contrast to natural bile acids the dehydrocholic one causes a slight
decrease in cholate concentration in the bile, however due to the high level of the choleric
reaction there is a general increase in the quantity of cholates. Dehydrocholic acid stimu-
lates the cholate formation on account of the synthesis and excretion of tauric cholic acid
and to a lesser degree of the deoxy- and glycholic acids.

REEL/FRAME
19721952

2 2n.

USSR

UDC: 619:616.986.7*036.2:636

SOLOSHENKO, I. Z., PETROV, Ye. N., SHOROKHOV, V. V., DROGUN, A. G., REYCHUK, Ye. A., and OBOLONKOVA, L. K., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Sciences USSR, and Moscow Technological Institute of Meat and Dairy Industry

"Problems of Leptospirosis Epizootiology"

Moscow, Veterinariya, No 12, Dec 70, pp 41-43

Abstract: Cattle, hogs, horses, and sheep in several regions of the Soviet Union were subjected to serological studies (microagglutination), culturing kidney suspensions, and microscopic examination of urine, with subsequent infection of guinea pigs. *Leptospira tarassovi* and *pmona* were agents in hogs. The possibility of infection in the Ulyanovsk region by *L. grippotyphosa* is not excluded. Cattle appear to be infected by *L. pmona*, *hebdomadis*, and *tarassovi*. Antibodies for *tarassovi*, *icterohaemorrhagiae*, and *australis* were most frequently observed in the blood sera of horses. The *L. ballum* group was found in the sera of sheep and goats. Antibody titers in all serological groups were low. Acute infections did not exist among test animals.

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1/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THE PATHOMORPHOLOGY OF SWINE LEPTOSPIROSIS UPON SPONTANEOUS
INFECTION -U-
AUTHOR--(04)-DROGUN, A.G., SHOROKHOV, V.V., SOLOSHENKO, I.Z., PETROV, YE.M.
COUNTRY OF INFO--USSR **D**
SOURCE--VETERINARIYA, 1970, NR 2, PP 47-49
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LEPTOSPIROSIS, HOG, LYMPHOID TISSUE, LIVER, KIDNEY, HISTOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1216

STEP NO--UR/0346/70/000/002/0047/0049

CIRC ACCESSION NO--AP0130226

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130226

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDIES SHOWED THAT LEPTOSPIROSIS OF ADULT SWINE SPONTANEOUSLY INFECTED WITH L. POMONA OR L. TARASSOVI PROCEEDS WITHOUT ANY PRONOUNCED PATHOLOGICAL CHANGES. THE DISEASE IS MORE APPARENT IN ANIMALS INFECTED SIMULTANEOUSLY WITH BOTH L. POMONA AND L. TARASSOVI. HISTOLOGICAL STUDIES SHOWED MOSTLY DYSTROPHIC CHANGES AND PROLIFERATION ON LYMPHOID CELLS IN LIVER AND KIDNEYS. GRANULAR DYSTROPHY AND LYMPHOID CELL PROLIFERATION IN KIDNEY INTERSTITIAL TISSUE WERE FOUND IN ALL CASES, AND ARE CONSIDERED THE FIRST STAGE OF INTERSTITIAL NEPHRITIS AND A SPECIFIC SIGN OF SWINE LEPTOSPIROSIS.

FACILITY: MOSCOW TECHNOLOGICAL INSTITUTE OF THE MEAT AND DAIRY INDUSTRY. FACILITY: INSTITUTE OF EPIDEMIOLOGY AND MICROBIOLOGY IMENI N. F. GAMALEYA.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THE INFLUENCE OF STAPHYLOCOCCAL TOXIN ON THE CHOLATOGENIC PROCESS
-U-
AUTHOR--DROGGOVOZ, S.M.
COUNTRY OF INFO--USSR
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
NR 5, PP 46-48
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--STAPHYLOCOCCUS, BACTERIAL TOXIN, BILE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/0293 STEP NO--UR/0219/70/069/005/0046/0048
CIRC ACCESSION NO--AP0122495
UNCLASSIFIED

272 022 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0122495
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN EXPERIMENTS ON 60 ALBINO RATS OF BOTH SEXES THE AUTHOR ESTABLISHED THAT STAPHYLOCOCCAL TOXIN INHIBITS BOTH THE INTENSITY OF BILE SECRETION AND CHOLATOGENESIS. REDUCTION OF THE CONTENT OF CHOLATES IN THE BILE OCCURS, TO A GREAT MEASURE, AT THE EXPENSE OF TAUROCHOLIC ACID. THE CONCENTRATION OF DESOXYCHOLIC AND CHOLIC ACIDS AUGMENTS. STAPHYLOCOCCAL TOXIN, APPARENTLY, MAINLY INHIBITS THOSE BIOCHEMICAL PROCESSES WHICH ARE INVOLVED IN THE CONVERSION OF DESOXYCHOLIC ACID INTO CHOLIC AND CHOLIC ACID INTO PAIRED ACIDS. FACILITY: CHAIR OF PHARMACOLOGY OF THE MEDICAL INSTITUTE, UKRAINIAN SSR, TERNOPOL.

UNCLASSIFIED

Organometallic Compounds

USSR

UDC 542.944:546.14:547.258.11

NESMEYANOV, A. N., NOGINA, O. V., DROGUNOVA, G. I., and LOKSHIN, B. V.,
Institute of Hetero-Organic Compounds, Academy of Sciences USSR

"Bromination of Pentamethylcyclopentadienyltitanium Tribromide"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, 1973,
pp 406-410

Abstract: Studies were conducted on the reactivity of the titanium-cyclopentadienyl bond as influenced by the substituents on the cyclopentadienyl ring. Pentamethylcyclopentadienyltitanium tribromide (I) was obtained by dropwise addition, with mixing, of 8.8 g of acetyl bromide in 4 ml hexane to 7.7 g of $C_5(CH_3)_5Ti(CO_2H_5)_3$ in 7 ml of hexane. The crystals formed overnight represented a 91% yield (9.36 g) of $C_5-(CH_3)_5TiBr_3$, m.p. 242-250° (from hexane), and were dark-red. The synthesis and other experiments were conducted in an atmosphere of inert gas. I was characterized by IR, PMR, and NMR spectroscopy. The substitution of a single bromine atom for a hydrogen atom in a methyl group was achieved under the following conditions: 1) 2.34 g of bromine was added with mixing to 5 g of I in 250 ml of CCl_4 . The mixture was irradiated with a 220 watt Hg-quartz lamp for 10 h at 45-50° at a distance of ~50 cm; the yield of 1/2

USSR

NESMEYANOV, A. N., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, 1973, pp 406-410

$[\text{C}_5(\text{CH}_3)_4\text{CH}_2\text{Br}] \text{TiBr}_3$ (II) was 40%. 2) II could also be obtained with an excess of bromine and longer exposure times in 48% yield. Bromination of I could also be obtained with N-bromosuccinamide in the presence of either azodiisobutyronitrile or UV irradiation; the respective yields were 13 and 28%. Introduction of even a single bromine atom into I markedly alters the reactivity of the titanium-cyclopentadienyl bond to nucleophilic reagents. Ethanol was capable of breaking the π -bound ring of II even after a few minutes at room temperature. The data indicate that in addition to breaking the $\text{Ti}-\text{C}_5(\text{CH}_3)_4\text{CH}_2\text{Br}$ bond, there occurs dehydrobromination of the organic fragment of the molecule which, apparently, results in fulvene formation.

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- 31 -

1/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--A STUDY ON MORPHOLOGY OF TWO CULTURES BELONGING TO THE GENUS
MICROPOLYSPORA -U-
AUTHOR--DOROKHOVA, L.A., AGRE, N.S., KALAKUTSKIY, L.V., KRASILNIKOV, N.A.
COUNTRY OF INFO--USSR *D*
SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 95-100
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MORPHOLOGY, SPOR, FUNGUS, ACTINOMYCETES

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1731 STEP NO--UR/0220/70/039/001/0095/0100
CIRC ACCESSION NO--AP0109692
ZZZZZZZZZZ UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP010969Z

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MORPHOLOGY OF TWO THERMOPHILIC STRAINS BELONGING TO THE GENUS MICROPOLYSPORA WAS STUDIED, I. E. MICROPOLYSPORA RECTIVIRGULA 1325 AND THERMOPOLYSPORA POLYSPORA A-94. BOTH ORGANISMS HAVE SIMILAR MYCELIUM STRUCTURE AND SPORE FORMATION. ELECTRON MICROSCOPY REVEALED THAT M. RECTIVIRGULA HAD THE STRUCTURE OF AERIAL MYCELIUM TYPICAL FOR ALL STUDIED RAY FUNGI. SPORES OF THE STUDIED CULTURE EXHIBITED PRONOUNCED POLYMORPHISM, THICK WALL (700-1000 A) CONSISTING OF TWO LAYERS AND MULTI LAYERED OUTER SHEATH. THE INNER STRUCTURE OF SPORES WAS THE SAME AS THAT OF HYPHAE AND SIMILAR TO THAT OF SPORES OF THE MAJORITY OF STUDIED ACTINOMYCETES.

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UR 0482

1-76

Soviet Inventions Illustrated, Section I Chemical, Derwent,

241558 POLYFERRITE ELEMENTS having transversally differentiated properties are produced by charging layers of different ferrites powders into a mould, and then jointly compressing them and sintering. Optimum magnetic properties are attained in each layer by separately calcining each ferrite powder in an individual manner. In an example as MgO-MnO-Fe₂O₃ ferrite was fired at 900°C for 6 hrs, and an MnO-ZnO-Fe₂O₃ ferrite at 1000°C for 5 hrs; both were cooled in air, ground and treated with polyvinyl alcohol as a plasticiser. Layers of both powders were consecutively charged into a mould, compressed under a pressure of 220-250 kg./cm.², and heated at a rate of 300°C/hr. to 1300°C, kept at this temperature for 6 hrs, and cooled to 1200°C over one hour; the cooling was completed at a pressure reduced to 1-3 mm.

15.5.67 as 1156631/22-1. A.I.DROKIN & V.E.BATSHEVER.
 INST. OF PHYSICS. (28.8.69) BUT 14/10.4.69. Class
 21g/31b3. Int.Cl. H 01f/B22f.

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AA0040656

AUTHORS: Drokin, A. I.,; and Batshever, V. Ye.

Institut Fiziki Sibirskogo Otdeleniya AN SSSR

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USSR

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SUDAKOV, N. I., VERSHININA, N. I., ~~DROKIN, A. I.~~, and URSULYAK, N. D., Krasnoyarsk Institute of Nonferrous Metals imeni M. I. Kalinin, Krasnoyarsk State University

"Magnetic Anisotropy of Bismuth-Calcium-Iron-Vanadium Garnets"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 34, No 5, May 70, pp 1077-1081

Abstract: The variation of the crystallographic magnetic anisotropy constant K_1 of single crystal samples of ferrite garnets with the field and temperature was measured by the mechanical moment method. Some of the samples had an addition of gallium and aluminum ions; a list of the composition of the samples follows:

No of sample	Composition
1	$\text{Bi}_{0.2}\text{Ca}_{0.8}\text{Fe}_{0.9}\text{V}_{1.1}\text{O}_{12}$
2	$\text{Bi}_{0.2}\text{Ca}_{0.8}\text{Fe}_{0.9}\text{V}_{1.1}\text{O}_{12}$
3	$\text{Bi}_{0.2}\text{Ca}_{0.8}\text{Fe}_{0.9}\text{V}_{1.1}\text{O}_{12}$
4	$\text{Bi}_{0.2}\text{Ca}_{0.8}\text{Fe}_{0.9}\text{V}_{1.1}\text{O}_{12}$
5	$\text{Bi}_{0.2}\text{Ca}_{0.8}\text{Fe}_{0.9}\text{V}_{1.1}\text{Al}_{0.1}\text{O}_{12}$
6	$\text{Bi}_{0.2}\text{Ca}_{0.8}\text{Fe}_{0.9}\text{V}_{1.1}\text{Al}_{0.1}\text{O}_{12}$
7	$\text{Bi}_{0.2}\text{Ca}_{0.8}\text{Fe}_{0.9}\text{V}_{1.1}\text{Al}_{0.1}\text{O}_{12}$
8	$\text{Bi}_{0.2}\text{Ca}_{0.8}\text{Fe}_{0.9}\text{V}_{1.1}\text{Ga}_{0.1}\text{O}_{12}$
9	$\text{Bi}_{0.2}\text{Ca}_{0.8}\text{Fe}_{0.9}\text{V}_{1.1}\text{Ga}_{0.1}\text{O}_{12}$
10	$\text{Bi}_{0.2}\text{Ca}_{0.8}\text{Fe}_{0.9}\text{V}_{1.1}\text{Ga}_{0.1}\text{O}_{12}$

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USSR

SUDAKOV, N. I., et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 34, No 5, May 70, pp 1077-1081

Analysis of the curves of the mechanical moments in the (100) plane in samples of all composition showed that the curves of the moments have a clearly expressed periodicity of $\pi/2$ at room temperatures even for weak fields of 40 oersted. A change in the temperature leads to a change in the amplitude of the sine curve and a shift in the saturation fields. The addition of the diamagnetic ions Al^{3+} and Ga^{3+} produces an expressed dependence of K_1 on their content for a fixed quantity of vanadium ions: K_1 decreases with an increase in the aluminum and gallium content for all temperatures. The effect of the type of substitute ion on the anisotropy was difficult to estimate from the results of this study, since the experiments were conducted with different vanadium contents: $x = 1.22$ for the Al-substitute and $x = 1.29$ for the Ga-substitute. The following four conclusions were made: (1) K_1 for bismuth-calcium-iron-vanadium garnets is only slightly dependent on the composition. The introduction of additional diamagnetic Al^{3+} and Ga^{3+} ions considerably reduces its value. (2) The dependence $K_1(T)$ for all samples is qualitatively the same. K_1 is negative in the entire temperature interval studied and its value rises sharply with a drop in temperature. (3) The dependence of K_1 on the field for all samples is in agreement with $2/3$

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USSR

SUDAKOV, N. I., et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol
34, No 5, May 70, pp 1077-1081

theory. (4) The samples of Bi-Ca-Fe-V-garnets of basic and substitute compositions are not sensitive to heat and thermomagnetic treatments.

3/3

Luminescence

USSR

UDC 535.379 + 543

DUBOVENKO, L. I., and DEBKOV, V. G., Kiev State University Imeni T. G. Shevchenko, Chair of Analytical Chemistry

"Effect of Copper (II) on the Chemiluminescence Reaction of Lucigenine With Hydrogen Peroxide"

Ivanovo, Khimiya i Khimicheskaya Tekhnologiya, Vol 15, No 3, 1972, pp 344-347

Abstract: A study was carried out on the effect of copper (II) ions on chemiluminescence reaction of lucigenine with H_2O_2 in a wide range of base concentration from pH 10.5 to 3 N KOH. It has been determined that the effect of copper changes depending on the pH of the medium: at pH 12-13 copper (II) quenches the luminescence, while in the medium of 1-3 N KOH it intensifies it. The quenching effect is due to increased decomposition of H_2O_2 . A possibility for qualitative determination of copper based on the inhibiting effect has been suggested, the sensitivity of the analysis being 0.03 μ g/2 ml of solution. Optimal conditions for this analysis are:

$[Lc] \gg 1.5 \cdot 10^{-4}$, $[H_2O_2] \gg 3 \cdot 10^{-3}$ mole/l, and pH 12.8.

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1/3 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--PATRIS LUMUMBA UNIVERSITY OF PEOPLES FRIENDSHIP ONE OF THE
REALIZATIONS OF V. I. LENIN'S IDEA ON THE EQUALITY OF NATIONS -U-
AUTHOR--(C2)-PREOBRAZHENSKIY, YU.B., DROMASHKO, V.I.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK OTORINOLARINGOLOGII, 1970, NR 2, PP 106-111

DATE PUBLISHED-----70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, BIOLOGICAL AND MEDICAL
SCIENCES
TOPIC TAGS--EDUCATION, FOREIGN TECHNICAL ASSISTANCE, MEDICAL TRAINING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0664

STEP NO--UR/0607/70/000/002/0106/0111

CIRC ACCESSION NO--AP0102649

UNCLASSIFIED

2/3 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0102649

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NATIONAL PROBLEM OCCUPIES AN IMPORTANT PLACE IN THE IMMORTAL TEACHING OF V. I. LENIN. ONLY BASING UPON THE TEACHING OF V. I. LENIN CAN ONE SOLVE THE PROBLEM OF THE NATIONAL LIBERATION MOVEMENT. THE SOVIET UNION AND OTHER SOCIALIST COUNTRIES, COMMUNIST AND WORKER'S PARTIES OF ALL COUNTRIES RESOLUTELY SUPPORT THE COMPLETE AND FINAL ELIMINATION OF COLONIAL REGIME IN ALL ITS FORMS AND MANIFESTATIONS. THE TRAINING OF NATIONAL SPECIALISTS IS ONE OF THE MOST IMPORTANT PROBLEMS IN THE DEVELOPING COUNTRIES. THE SOVIET UNION AND OTHER SOCIALIST COUNTRIES RENDER GREAT AID TO DEVELOPING COUNTRIES IN THE SOLUTION OF THIS PROBLEM. ONE OF THE EXAMPLES OF THIS AID IS PATRIS LUMUMBA UNIVERSITY OF PEOPLES FRIENDSHIP SET UP BY PUBLIC ORGANIZATIONS THE SOVIET COMMITTEE OF SOLIDARITY OF ASIAN AND AFRICAN COUNTRIES, UNION OF SOVIET SOCIETIES OF FRIENDSHIP AND CULTURAL RELATIONS WITH FOREIGN COUNTRIES AND ALL UNION CENTRAL COUNCIL OF TRADE UNIONS. THE UNIVERSITY ACCEPTS STUDENTS FROM COUNTRIES OF ASIA, AFRICA, LATIN AMERICA AND SOVIET UNION IRRESPECTIVE OF THE RACE, SEX, NATIONALITY AND RELIGION. THE UNIVERSITY HAS SEVEN FACULTIES. EACH OF THE FACULTIES TRAINS DIFFERENT SPECIALISTS WITH DUE CONSIDERATION OF THE REQUIREMENTS OF DEVELOPING COUNTRIES. FOR A SHORT PERIOD FROM THE UNIVERSITY 2363 DIFFERENT SPECIALISTS GRADUATED AND 187 PERSONS UNDERWENT POSTGRADUATE TRAINING. THE MEDICAL FACULTY IS ONE OF THE LARGEST. THE OVERWHELMING MAJORITY OF CHAIRS OF THE FACULTY ARE HEADED BY WELL KNOWN SCIENTISTS. MUCH ATTENTION IS PAID TO THE SCIENTIFIC WORK CARRIED OUT BY THE STUDENTS.

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0102649

ABSTRACT/EXTRACT--THUS, STUDENTS OF ONLY THE MEDICAL FACULTY PUBLISHED
OVER 200 SCIENTIFIC PAPERS. THE ARTICLE BRIEFLY DESCRIBES THE HISTORY
OF DEVELOPMENT AND PECULIARITIES OF TEACHING OTORHINOLARYNGOLOGY IN THE
UNIVERSITY.

UNCLASSIFIED

89

USSR

UDC 632.95

DRON, L. P.

"Determination of Gezaprim 1798 in the Soil by the Method of Thin-Layer Chromatography and Ultraviolet Spectroscopy"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on Investigation of Residues of Pesticides, and Prevention of Pesticide Contamination of Foodstuffs, Fodder and the External Environment), Tallinn, 1971, pp 155-157 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N457)

Translation: A 50 gram soil specimen is extracted with acetone in a Soxhlet apparatus for 2-2.5 hours and concentrated at (50°), 15-20 ml of CH₂Cl₂ is added to the residue which is then dried over Na₂SO₄ and evaporated, the residue is dissolved in 20 ml of an ether-pentane-CH₂Cl₂ mixture (2:1:1) and agitated with 50 ml of 0.1 N HCl (acid). The organic layer is evaporated, sublimated under vacuum (30-40 min at 100-110°C and a pressure of 0.2 mm), chromatographically analyzed on silica with gypsum in the CHCl₃-acetone system (99:1) or the CHCl₃-ethyl acetate system (9:1), and atrazine (I) is developed
1/2

- 55 -

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DROH', L. P., Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy, Tallinn, 1971, pp 155-157

with a 0.1 N solution of AgNO_3 in 3 N HNO_3 . The sensitivity of determination is 5 $\%$. A hydrochloric acid solution is alkalized with NH_4OH to pH 9, extracted with 80 ml of CHCl_2 , dried, concentrated, chromatographically analyzed in CHCl_3 or the acetone-hexane system (1:3), and prometrin (II) is developed with bromophenol blue with AgNO_3 and a 2% citric acid solution. The sensitivity of determination is 5 $\%$. Quantitative determination of I and II is done by H_2SO_4 hydrolysis and measurement of optical density.

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1/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--MAGNETIC CRYSTALLOGRAPHIC ANISOTROPY OF SINGLE CRYSTALS OF LITHIUM
AND LITHIUM ZINC FERRITES WITH TRACE COBALT DOPANTS -U-
AUTHOR--(04)--SELEZNEV, V.N., PUKHOV, I.K., DRONIN, A.I., SHAPOVALOV, V.A.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(3), 885-91
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS, CHEMISTRY
TOPIC TAGS--SINGLE CRYSTAL, LITHIUM, IRON OXIDE, COBALT, ZINC FERRITE,
MAGNETIC PROPERTY, CRYSTAL LATTICE STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0581 STEP NO--UR/0181/70/012/003/0835/0891
CIRC ACCESSION NO--AP0105564
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PROCESSING DATE--18SEP70

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 1ST K SUB1 AND 2ND K SUB2 MAGNETIC ANISOTROPY CONSTS. WERE MEASURED FOR ANNEALED AND TEMPERED SINGLE CRYSTAL FERRITES, LI SUBOTIMES5 NEGATIVE(X-2) FE SUB2TIMES5 NEGATIVE(X-2) CO SUBX 0 SUB4 (0 SMALLER THAN OR EQUAL TO X SMALLER THAN OR EQUAL TO 0.005) AND LI SUBOTIMES39 NEGATIVE(X-2) FE SUB2TIMES39 NEGATIVE(X-2) ZN SUBOTIMES22 CO SUBX 0 SUB4 (X EQUALS 0,0.005), AT 4.2-600DEGREES K. MEASUREMENTS WERE CARRIED OUT BY THE METHOD OF FERROMAGNETIC RESONANCE AT SIMILAR TO 9500 AND SIMILAR TO 36,700 MHZ. WITH INCREASED CONTENT OF CO, THE CONTRIBUTIONS TO K SUB1 MAGNITUDE OF DELTA K SUB1 AND K SUB2 MAGNITUDE OF DELTA K SUB2 INCREASE LINEARLY. ON TEMPERING OF LI-CO FERRITES, MAGNITUDE OF DELTA K SUB1 AND MAGNITUDE OF DELTA K SUB2 DECREASE 3 FOLD. TEMPERING OF LI-ZN-CO FERRITES AFFECTS ONLY LITTLE THE CONTRIBUTION OF CO TO THE ANISOTROPY CONSTS. THE ORDER DISORDER TRANSITION IN LI FERRITE STRONGLY AFFECTS THE CONTRIBUTION OF CO IONS TO K SUB1 AND K SUB2. AT GREATER THAN 60DEGREES, EXPTL. OBSD. TEMP. DEPENDENCES OF DELTA K SUB1 AND DELTA K SUB2 IN THE ORDERED CRYSTALS CAN BE SATISFACTORILY DESCRIBED BY THE THEORY OF TACHIKI; HOWEVER, AT 4.2DEGREES K, EXPTL. AND THEORETICAL DATA DIFFER CONSIDERABLY. POSSIBLE CAUSES ARE DISCUSSED.

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USSR

UDC 538.4

BAKANOV, Yu. A., DRONNIK, L. M., LEVIN, M. N., MAKAREVICH, V. K.,
RESHET'KO, L. M., STRIZHAK, V. Ye., TOLMACH, I. M., TROITSKIY, S. R.,
YANTOVSKIY, Ye. I.

"Experimental Study of Liquid-Metal Induction Machine in Pump Mode"

7-ye Soveshch. po Magnit. Gidrodinamike. T. 1 [Seventh Conference on Magnetic Hydrodynamics, Vol 1], Riga, Zinatnye Press, 1972, pp 20-23, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B43 by V. V. Blagov).

Translation: The operation of a liquid-metal induction machine in the pump mode was studied in a potassium circuit with a working pressure of up to 60 kg/cm². The working characteristics of the machine are presented for a temperature of 500°.

The experimental results allowed the relationship of the dimensionless criterion $\Pi = \Delta P V_s / \sigma U^2$ to the velocity ratio $V/V_s = 1 - S$ to be established (where V_s is the synchronous speed of the rotating field, V is the velocity of the metal, ΔP is the pressure drop developed, S is the slipping, σ is the conductivity, U is the applied voltage). As the temperature changes from 1/2

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UDC 538.4

. BAKANOV, Yu. A., DRONNIK, L. M., LEVIN, M. N., MAKAREVICH, V. K.,
RESHET'KO, L. M., STRIZHAK, V. Ye., TOLMACH, I. M., TROITSKIY, S. R.,
YANTOVSKIY, Ye. I., 7-ye Soveshch. po Magnit. Gidrodinamike. T. 1, Riga,
Zinatnye Press, 1972, pp 20-23.

280 to 500° and the voltage varies from 80 to 150 v, the dependence of Π on V/V_s is universal. The maximum head is produced at small flow rates, depends on the applied voltage and where $T = 500^\circ$ and $\Delta U = 150$ v is about 37 kg/cm²; the efficiency of the machine is about 24% under these conditions. Where $T = 300^\circ$, these figures are 42 and 30% respectively. The total operating time of the machine was 120 hours.

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UDC 669.246

DRONOV, A. I., and MAMKIN, G. I.

"Milling of NP-2 Nickel Hot-Rolled Strip"

Moscow, Tsvetnyye Metally, No 10, Oct 70, pp 72-74

Abstract: An investigation was made to establish the geometrical parameters of a cylindrical mill with inserted hard alloy teeth. Detailed descriptions are given of tests to determine its performance in milling NP-2 nickel. The strength of mills provided with VK4, VK6M, VK10, M, and T5K10 hard alloy teeth at cutting speeds of 297 and 377 m/min were compared in order to select the optimum mill material. The best results were obtained with T5K10 hard alloy teeth. The optimum cutting speed was found to be between 360-400 m/min. Milling length and tool productivity increased when feeding was increased from 0.156 to 0.787 mm/tooth. A combination of 15° rake and 12° end relief angles yielded the best results. An economy of 2700 rubles per 1000 m of nickel was realized by using mills with hard alloy teeth instead of mills with high-speed steel teeth.

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USSR

DRONOV, A. P., D'YAKOV, A. S., KUDRYAVTSEV, YE. M., SOBOLEV, N. N.

"Gas Dynamic CO₂ Laser With Escape Through a Slot of the Working Mixture Heated in the Shock Tube"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 11, No 11, 5 June 1970, pp 516-519

Abstract: This article contains a description of an experiment and the results of detecting amplification and generation of the laser radiation of CO₂ molecules during expansion of a gas through a slot. In this case greater cooling rates are obtained than when using a nozzle. A triple mixture of 73 percent He, 18 percent CO₂, and 9 percent N₂ was used. The mixture was heated to 1,800 +200°K (at a pressure of 25 atmospheres) in a shock tube beyond a reflected shock wave. The shock tube with an inside diameter of 90 mm had a partition with a slot 0.7 x x 60 mm. The slot was covered with foil (10 microns thick) which made it possible to obtain different pressures on each side of the slot before the experiment. On reflection of the shock wave the foil ruptured practically instantaneously, and after this the gas mixture heated by the reflected shock wave leaked from the forechamber into the
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DRONOV, A. P., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 11, No 11, 5 June 1970, pp 516-519

receiver (at a pressure of 1 torr). It was confirmed in the experiments that cooling of the carbon dioxide gas on expansion of the jet in a vacuum and the decrease in density lead to the fact that at some distance from the slot in the receiver a maximum inversion (and amplification) must be observed. The maximum value of $k \sim 10$ percent \sqrt{k} is the amplification or absorption coefficient⁷ was reached at a distance of 35 mm from the slot. Because of the nature of the amplification coefficient the axis of the resonator was located at a distance of 35 mm from the slot in the experiments to obtain generation. An oscillogram is presented showing a standard recording of generation. The length of the generation pulse coincides with the length of the amplification pulse. This agrees with the picture of infrared glow of the mixture in the receiver. Glow begins somewhat before the amplification and generation processes, and three milliseconds after the time of reflection the glow of the mixture (and its temperature) drops sharply as a result of the effect of the expansion waves arriving at the slot. This leads to a reduction in the amplification and generation.

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USSR

UDC 612.014.426.017.1

DRONOV, I. S., and KIRITSEVA, A. D., Central Scientific Research Laboratory,
Rostov-on-Don Medical Institute

"Immunobiological Reactivity of Animals Subjected to Long-Term Irradiation by SHF Radio Waves"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 9, 1972, pp 15-19

Abstract: Effects of low intensity SHF radio waves were studied by subjecting rabbits to 50 microwatts/cm² for 4 hrs/day for 4 months. Group 1 was irradiated during immunization with heat-killed typhoid culture, group 2 was immunized before irradiation, and group 3 was immunized after 3 months of irradiation. Another group immunized during irradiation by 10 microwatts/cm² showed no differences from controls. The others, particularly group 3, showed decreases in immunobiological reactivity. Neutrophil phagocytic activity decreased as low as 21-12% in the 7th week in group 1 (36-22% in controls) and 15-10.6% in group 2 (25.6-16.6% in controls). Complement content dropped from 13.02 C₁H₅₀ (ml) in group 2 to 5.2 in the 5th week of irradiation and returned to normal in the 6th. Complement remained normal (14.2) in group 3 until the 8th week of irradiation (9.2), dropped to 8.9 14 days after immunization, and remained low until normal levels were restored on the 60th day. Antibody titers of macro- (19S) and microglobulins (7S) were lower than controls in groups 2 and 3. 7S antibodies disappeared completely 44 days after immunization in group 3. In conclusion,

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DRONOV, I. S. and KIRITSEVA, A. D., Gigiyena Truda i Professional'nyye
Zabolevaniya, No 9, 1972, pp 15-19

animals immunized prior to irradiation 50 microwatts/cm² showed insignificant
reductions of immunobiological activity, while immunization after irradiation
results in sharp reduction of antibody formation and complement content.

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USSR

UDC 612.017.12.014.426

DRONOV, I. S.; KIRITSEVA, A. D.; Chair of General Hygiene,
Chair of Microbiology and Virology, Central Scientific Research
Laboratory, Rostov Medical Institute

"Immunobiological Shifts in Immunized Animals Exposed to Micro-
waves"

Moscow, Gigiyene i Sanitariya, No 7, 1971, pp 51-53

Abstract: Antibody formation was studied in 20 rabbits exposed for four hours daily for four months to microwaves ($50 \mu w/cm^2$ and $10 \mu w/cm^2$) before, during, and after immunization with typhoid antigen. Chronic irradiation at $50 \mu w/cm^2$ simultaneously lowered the antibody titers as shown by both the agglutination and indirect hemagglutination tests. Irradiation after immunization slightly decreased antibody titers, while irradiation before immunization decreased them sharply. Separate determination of the 19S- and 7S-antibodies showed that chronic irradiation suppressed the synthesis of macroglobulin and especially microglobulin antibodies. Study of antibody formation in animals exposed to $10 \mu w/cm^2$ revealed no shifts in experimental animals compared with the control.

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USSR

UDC 621.181.001.5

GRISHIN, A. D., GUTSALO, G. I., SHTAL'MAN, S. G., ABRYUTIN, A. A., DRONOV, L. A., SOLOMONOV, V. M., KROL', A. Ya. and BRITVIN, O. V., (all engineers); and Candidate of Technical Sciences VIKHREV, Yu. V., ORGRES-VTI-Kostromskaya GRES

"Results of a Study of the Combustion and Temperature Regime of the Lower Radiation Section of the TGMP-114 Boiler"

Moscow, Teploenergetika, No 3, 1973, pp 43-46

Abstract: Earlier gas-mazut boilers of this general type were not completely satisfactory on account of the low reliability of the heating surfaces (mainly the lower radiation section) and the great heat flow in the combustion chamber.

This difficulty has been corrected in the new main-series supercritical pressure TGMP-114 boiler by reducing the number of boilers (from 8 to 6), securing maximal removal of the extreme burners from the side walls, and use of recirculation of cold smoke gases into the lower part of the furnace chamber.

The direct-flow TGMP-114 boiler has an output of 950 t/hr, with steam parameters of 255 kg/cm² and 565/570°C. Analysis of operational data on chemical control

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GRISHIN, A. D., et al., Teploenergetika, No 3, 1973, pp. 43-46

shows that in 1971 iron content of feed water was 10-15 µg/kg, 15-20 µg/kg the previous year, and 20-50 µg/kg during the start-up period in 1969, with high content of 100-150 µg/kg in individual cases. These facts point up the formation of iron oxide deposits as a basic cause of the external corrosion of the screening pipes of the lower radiation section, and emphasize the necessity of water control and chemical cleansing.

2/2

USSR

UDC: 621.372.412

~~DRONOV~~, H. D., KOMOV, A. N., Novocherkassk "Order of the Red Banner of Labor"
Polytechnical Institute imeni Sergo Ordzhonikidze

"A Method of Changing the Frequency of a Piezoelectric Resonator"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 12, Apr 71, Author's Certificate No 299944, Division H, filed 29 Dec 69,
published 26 Mar 71, pp 206-207

Translation: This Author's Certificate introduces a method of changing the frequency of a piezoelectric resonator made from a quartz or ceramic plate whose side faces are metallized with a magnetic conductive material. As a distinguishing feature of the patent, the natural frequency of the piezoelectric plate is changed by placing the above-mentioned resonator in an alternating magnetic field.

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USSR

~~DRONOV, V. S.,~~ GORBATENKO, L. S. (Rostov-on-Don Institute of Railroad Transport Engineers)

"Supersaturated Vapors of Crystalline Substances -- Possible Medium for Recording Tracks of Charged Particles"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, August 1970, pp 66-69

Abstract: The possibility of using supersaturated vapors of solid crystalline substances for observing the tracks of charged particles is discussed. In this case the track must be labeled as a chain of crystals growing from the vapors.

Using $C_{10}H_8$ as an example, the authors determine the necessary extent of supersaturation and sensitive period for various values of the charge of formation centers near which occur the nucleation and growth of the crystals. The results are shown in the table.

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DRONOV, V. S., GORBATENKO, L. S., Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, August 1970, pp 66-69

Z	p_r/p_0	ΔT °C	R cm/sec	$\Delta \tau$ sec
2	6,75	35		
3	4,35	26	$9,6 \cdot 10^{-2}$	$1,05 \cdot 10^{-1}$
4	3,30	20	$5,5 \cdot 10^{-2}$	$1,8 \cdot 10^{-1}$
5	2,83	17	$3,8 \cdot 10^{-2}$	$2,6 \cdot 10^{-1}$
			$3,0 \cdot 10^{-2}$	$3,3 \cdot 10^{-1}$

Here Z is the charge of an ion; p_r/p_0 is the critical supersaturation; ΔT is the supercooling required; R is the rate of growth of the crystals, calculated from data given by Barton, Carbera, and Frank in the collection "Elementary Processes in the Growth of Crystals (M., p 11, 1959 foreign literature); and $\Delta \tau$ is the required sensitive period.

1/2 035 UNCLASSIFIED PROCESSING DATE--27NOV70
 TITLE--ON THE POSSIBILITY OF CREATING CONDITIONS OF PERMANENT SENSITIVITY
 OF SUPERCOOLED LIQUIDS TO CHARGED PARTICLES -U-
 AUTHOR--DRONOV, V.S. D
 COUNTRY OF INFO--USSR
 SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
 NR 5, PP 1784-1788
 DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
 TOPIC TAGS--RADIATION SENSITIVITY, SUPERCOOLING, QUANTUM LIQUID, CHARGED
 PARTICLE, TEMPERATURE GRADIENT, MATHEMATIC EXPRESSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--300 I/2235 STEP NO--UR/0056/70/058/005/1784/1788

CIRC ACCESSION NO--AP0127597
 UNCLASSIFIED