

DROZDOVA, A. V.

THE EFFECT OF GENERALIZED HYPODYNAMIA AND HYPOKINESIA ON THE PORTAL SYSTEM OF THE LIVER

UIC: 611,149.014.47-084-019

1489 12-9-71
6 May 71

[Article by A.V. Drozdova, Chair of Normal Anatomy (headed by Professor N.G. Priva), Honored Scientist), First Leningrad Medical Institute (now Acad.-clan I.P. Pavlov; Leningrad, Arkhiv Anatomii, Gistologii i Embriologii, Moskva, No 11, 1971, subtitled 24 December 1970, pp 100-104]

At the present time researchers are becoming more and more concerned with the hypodynamia and hypokinesia factor. On the one hand, it is a component of the set of stress factors involved in spaceflight, so that it is of interest to space biology and medicine. On the other hand, in view of technological progress, man's limited motor activity on earth is having an increasingly deleterious effect on his health.

Hypokinesia and hypodynamia induce considerable changes in the cardiovascular system. While there are many physiological investigations, there are hardly any performed using morphological methods.

One of the first anatomical works were the investigations begun on the chair of normal anatomy of the First Leningrad Medical Institute (now Acad.-clan I.P. Pavlov, by N.G. Priva (1958) and his colleagues (L.N. Aleksina, 1968); and they are presently being continued. In addition, V.V. Portugalov, Ye.I. Il'ina-Kakuyeva, and V.I. Starostin (1970) investigated cytochemical changes in red and white muscle fibers under the influence of hypodynamia and hypokinesia.

The liver, which is a large organ and plays an important part in venous circulation, pools much blood, and plays a part in metabolic functions of the organism, is of great interest from the standpoint of demonstration of changes occurring in it under the influence of generalized hypodynamia and hypokinesia. We did not encounter works on this subject in the literature.

The experimental investigation was conducted on 60 albino rats and eight rabbits. The animals were put into small cages in which they could not change body position. Observations were pursued for

1/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--THE INFLUENCE OF PYROGENAL ON THE LIVER OF RATS SUBJECTED TO THE
EFFECT OF CCL SUB4 -U-
AUTHOR--(04)-AVRAHENKO, M.M., ODINOKOVA, V.A., OROZDOVA, G.A., GLADYSHEV,
B.N.
COUNTRY OF INFO--USSR
SOURCE--BYULLETIN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
NR 3, PP 43-46
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORGAN REGENERATION, LIVER, RAT, TOXICOLOGY, CARBON
TETRACHLORIDE, CYTOPLASM, GLYCOGEN, ALBUMIN, CHOLINESTERASE, ENZYME
ACTIVITY, BETA GLOBULIN, PYROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1982/0851

STEP NO--UR/0219/70/069/003/0043/0046

CIRC ACCESSION NO--AP0052285

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--18SEPT0

CIRC ACCESSION NO--AP0052285

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF PYROGENAL ON PROCESSES OF REGENERATION IN THE LIVER IN RATS WITH EXPERIMENTAL CCL SUB4 HEPATOSIS WAS STUDIED. AS THE RESULT OF PYROGENAL TREATMENT IN THE LIVER TISSUE OF ANIMALS THERE APPEARED SIGNS OF REGENERATION: THE NUMBER OF DIVIDING CELLS INCREASED, THERE APPEARED LARGE HEPATOCYTES WITH A SIGNIFICANT ACCUMULATION OF GLYCOGEN IN THE CYTOPLASM. THE EMPLOYMENT OF PYROGENAL WAS CONDUCTIVE TO NORMALIZATION OF THE PICTURE OF BLOOD SERUM PROTEINS, AN INCREASED CONTENT OF ALBUMINS AND A REDUCED CONTENT OF BETA GLOBULINS DOWN TO NORMAL VALUES. THERE WAS FOUND NO STATISTICALLY SIGNIFICANT CHANGES IN THE ACTIVITY OF CHOLINESTERASE AND HISTIOASE IN THE BLOOD SERUM AND IN THE HOMOGENATE OF HEPATIC TISSUE OF RATS RECEIVING PYROGENAL, IN COMPARISON WITH ANIMALS NOT GIVEN THE LATTER. DURING PYROGENAL TREATMENT IN THE PROCESS OF CCL SUB4 INTOXICATION THERE WAS NOTED A MORE RAPID NORMALIZATION IN THE CONTENT OF ALBUMINS AND BETA GLOBULINS OF THE BLOOD SERUM DURING RECOVERY.

UNCLASSIFIED

Acc. Nr:

AP0055981

Abstracting Service:
CHEMICAL ABST. 6-70

Ref. Code:

UR 0025

117189w Hydrogen catalytic wave in the presence of copper(II) diethyldithiocarbamate. Vinogradova, E. N.; Drozdova, I. I.; Prokhorova, G. V.; Severova, T. A. (Moscow State Univ., Moscow, USSR). *Zh. Anal. Khim.* 1970, 25(1), 183-5 (Russ). The complex compd. Cu(II) diethyldithiocarbamate (I) catalyzes the liberation of H on a dropping Hg electrode. The wave observed has a humplike shape, its height does not depend on the square root of the Hg column height. The wave height depends on the concn. of Cu(II), I, pH, and on the concn. of the supporting electrolyte. These relations are characteristic of the H catalytic waves. Chaim Weiner

pc

REEL/FRAME

19841310

USSR

UDC: 621.372.061

ALKIN, K. O., DROZDOVA, L. A.

"Reception of Weak Signals in a Two-Channel Asynchronous Storage Circuit With Inertial Detection"

Otbor i peredacha inform. Resp. mezhved. sb. (Selection and Transmission of Information. Republic Interdepartmental Collection), 1970, vyp. 25, pp 47-51 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A112)

Translation: The authors analyze the operation of an asynchronous storage circuit in the case of reception of a weak $[(s/n)_{in} < 1]$ correlated continuous signal against a background of independent or weakly dependent interferences. An expression is found for the ratio $(s/n)_{out}$ in the case of signal reception against a background of independent or weakly dependent interferences. The results of calculation of $(s/n)_{out}$ by the resultant formulas are given for several values of $(s/n)_{in}$. A diagram and experimental results are given. Bibliography of 10 titles. Resumé.

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1/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--REACTION OF RARE EARTH OXIDES WITH WATER -U-
AUTHOR-(03)-TIMOFEYEVA, N.I., DROZDOVA, L.N., TIMOFEYEV, V.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 505
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--RARE EARTH COMPOUND, METAL OXIDE, CHEMICAL REACTION, WATER, X
RAY TECHNIQUE, THERMOGRAPHIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0906 STEP NO--UR/0363/70/006/003/0605/0605
CIRC ACCESSION NO--AP0118075
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118075

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF RARE EARTH OXIDES (FROM LA TO LU, WITH THE EXCEPTION OF PM, AND Y) WITH BOILING H₂O FOR 10-100 HR AND WITH H₂O AT 350DEGREES FOR 24 HR WAS STUDIED BY X RAY STRUCTURAL, THERMOGRAPHIC, AND GRAVIMETRIC ANALYSES. LA₂O₃, ND₂O₃, SM₂O₃, AND GD₂O₃, WHEN IN CONTACT WITH BOILING H₂O AND WITH H₂O AT 350DEGREES ARE CONVERTED TO HYDROXIDES OF THE Ln(OH)₃ TYPE. SESQUIOXIDES OF RARE EARTHS RANGING FROM HO TO LU AND Y FOR ALL PRACTICAL PURPOSES DO NOT REACT WITH BOILING H₂O. IN H₂O AT 350DEGREES THE RARE EARTH OXIDES FROM HO TO LU FORM MONOHYDRATES; CEO₂ DOES NOT INTERACT WITH H₂O AT 100 AND 350DEGREES. PR₆O₁₁ AND TB₄O₇ REACT WITH SMALLER THAN 2 MOLS. OF H₂O. LA(OH)₃, ND(OH)₃, SM(OH)₃, EU(OH)₃, AND GD(OH)₃ HAVE A HEXAGONAL UCL₃ TYPE STRUCTURE. ALL THE RARE EARTH OXIDES ARE ONLY SLIGHTLY SOL. IN H₂O.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--MULTISTEP PHOTOOXIDATION OF BACTERIOCHLOROPHYLL. FLUORESCENCE AND
ABSORPTION SPECTRA OF INTERMEDIATE FORMS -U-
AUTHOR--KRASNOVSKIY, A., DROZDOVA, N., BOKUCHAVA, E. D
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(2) 464-7
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--FLUORESCENCE, ABSORPTION SPECTRUM, CHLOROPHYLL, PIGMENT,
ASCORBIC ACID, BACTERIA, PYRIDINE, PHOTOOXIDATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1798 STEP NO--UR/0020/70/190/002/0464/0467
CIRC ACCESSION NO--AT0101845
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AT0101845

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ABSORBANCE SPECTRA WERE REPORTED FOR PHOTOOXIDIN. OF BACTERIOCHLOROPHYLL BY O BENZOQUINONE IN MEPM. THE RESULTS SUGGEST THAT THE REACTION CONSISTS OF A 2 STEP 2 ELECTRON OXIDN. TO CHLOROPHYLL AND PROTOCHLOROPHYLL LIKE SUBSTANCES WHEN THE REACTION EMPLOYS O BENZOQUINONE. ADDN. OF PHNH₂ SUB₂ TO THE OXIDIZED MATERIAL DID NOT REGENERATE THE PIGMENT IN THE DARK BUT ILLUMINATION DID LEAD TO THE REVERSE REACTION. ASCORBIC ACID IN PYRIDINE LED TO MINOR REVERSION IN THE DARK AND UP TO 10PERCENT REVERSION IN LIGHT. ADDN. OF O BENZOQUINONE AND ASCORBIC ACID AND SUBSEQUENT ILLUMINATION OF BACTERIOCHLOROPHYLL RESULTED ONLY IN THE USUAL PHOTOXIDN. TO FORM THE RED PIGMENT.

UNCLASSIFIED

USSR

UDC 617.75:593.6.013.8

DROZDOVA, N. T.

"State of the Visual Analysor After Negative Overloads"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 2, 1971, pp 65-67

Abstract: The effects on the eyes of "pelvis-head" acceleration in a centrifuge were studied in 14 human subjects rotated once (at intensities of 1 to 3 g) and in 12 subjects rotated more than 10 times a day (1 to 2 g). In the first series of experiments, all the subjects felt a rush of blood to the head and eyeballs, starting with acceleration of g. Increased acceleration caused pulsating pain over the superciliary arches and tearing, meanwhile the threshold of contrast sensitivity of the eyes rose with increasing acceleration. After exposure to 3 g it was almost $1\frac{1}{2}$ times higher than before the start of rotation (20%). Ophthalmoscopy revealed hyperemia of the mucosa of the eyelids and eyeballs after exposure to 1 g and phase changes in the diameter of the retinal vessels and petechial hemorrhages into the conjunctive after acceleration of 2 g or more.

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1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--USE OF THE EDMONDS BIRNBAUM METHOD FOR DETERMINING THE COMPOSITION
OF COMPLEXES -U-
AUTHOR--(02)-DROZDOVA, S.N., YAMPOLSKIY, M.Z. *D*
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 595-8
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, METHODS AND EQUIPMENT
TOPIC TAGS--TEST METHOD, COMPLEX COMPOUND, CHEMICAL COMPOSITION, GALLIUM
COMPOUND

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1609 STEP NO--UR/0078/70/015/003/0595/0598
CIRC ACCESSION NO--AP0112603
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112603

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EDMONDS BIRNBAUM METHOD (1941) WAS USED TO STUDY COMPLEX FORMATION IN SYSTEMS CONTG. EQUIL. CONCNS. OF COLORED COMPONENTS. COMPLEXING OF GA WITH ALIZARIN S(II) WAS CHOSEN AS AN EXAMPLE. GA FORMS 1:1 AND 1:2 COMPLEXES WITH I AT PH 2.8 AND 7.08, RESP. FACILITY: KURSK, GOS. PEDAGOG. INST., KURSK, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--EFFECT OF BORON OXIDE ON THE ELECTRICAL CONDUCTIVITY OF
POLYCRYSTALLINE MAGNESIUM OXIDE -U-
AUTHOR--(02)-MAMYKIN, P.S., DROZDOVA, T.A.
COUNTRY OF INFO--USSR
SOURCE--OGNEUPORY 1970, 35(2), 44-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MAGNESIUM OXIDE, ELECTRIC CONDUCTIVITY, THERMAL ANALYSIS,
BORON OXIDE, ENDOTHERMIC EFFECT, POLYCRYSTAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0892 STEP NO--UR/0131/70/035/002/0044/0046
CIRC ACCESSION NO--AP0118061
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118061

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC. COND. AT 100-1600DEGREES OF A MIXT. OF MGO (PREHEATED AT 1400DEGREES) AND 0.5-5 WT. PERCENT B SUB2 O SUB3 WAS DETD. AND COMPARED WITH THE ELEC. COND. OF POLYCRYST. MGO AND OF MGO CRYSTALS, TAKEN FROM A BLOCK OF ELEC. MELTED MGO. THE ELEC. COND. OF SINGLE CRYSTAL AND POLYCRYST. MGO INCREASES WITH INCREASING TEMP. BY ADDN. OF B SUB2 O SUB3, THE ELEC. COND. OF MGO INCREASES BY NEARLY A FACTOR OF 2 AS A CONSEQUENCE OF THE MELTING OF 3MGO.B SUB2 O SUB3 WHICH IS FORMED DURING SINTERING AT 1366DEGREES. THE PRESENCE OF 3MGO.B SUB2 O SUB3 AFTER FIRING WAS DETD. THE FORMATION OF A FLUID PHASE WAS ASCERTAIN BY DTA. AN ENDOTHERMIC EFFECT WAS OBSERVED AT 1370DEGREES WHICH CORRESPONDS TO THE MELTING OF MG ORTHOBORATE.
FACILITY: URAL. POLITEKH. INST. IM. KIROVA, SVERDLUVSK, USSR.

UNCLASSIFIED

DROZDOVA, V. I.

space medicine

STUDY OF STREPTOCOCCAL FLORA OF THE HUMAN PHARYNX IN ISOLATED HUMAN SUBJECTS
(Article by V. I. Drozdova, R. V. Petrov and V. K. Shilov, Moscow, Kozmeticheskaya Simplektya Publishing Russian, Vol 3, No 4, pp 26-29, 1971, submitted for publication 28 October 1969) *56/10731*

SOI 5P85 54396
03 NOV 71

UDC 616.315.6-008.97:612.766.2

Abstract: This paper gives the results of a study of pharyngeal streptococcal flora of human subjects during 15-day isolation. Confinement in a small enclosed volume was characterized by microbial transfer from one man to another. The coat subjects exhibited no significant changes in acetylauronidase and anti-O-streptolytine titers during the experiment.

The implementation of prolonged flights by man in space involves his presence in a tightly sealed cabin with a modified atmosphere and exposure to a number of unfavorable spaceflight factors. It must be emphasized that many representatives of normal body microflora present in the kneelaine, respiratory passages, mucous membrane and on the human skin are pathogenic or conditionally pathogenic and under some conditions cause microinfectious diseases.

Accordingly, it is of the greatest importance to study the interrelationships between the human organism and autofloral microbes, which include streptococci. In this connection it is particularly timely to study the interexchange of microbes among individuals, since when they are confined in an enclosed cabin of restricted volume a high degree of contact is created in an increase the possibility of infection, however, the literature on this subject (Hoyer, et al.)

The objective of this study was a serological investigation of the streptococcal landscape in the human pharynx and the detection of a possible interexchange of microbes among them under conditions of a closed environment.

Microbiological investigations were carried out in the laboratory in two experiments each lasting 15 days with participation of five healthy males in the age group from 25 to 32 years. In the first experiment the temperature

1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF THE PROPERTIES OF CARCASS CORD ON THE CROSS SECTION
CONFIGURATION OF R TIRES -U-
AUTHOR--(02)-DROZDOVA, V.V., BUKHIN, B.L.
COUNTRY OF INFO--USSR *D*
SOURCE--KAUCH. REZINA 1970, 29(2), 39-41
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--CORDAGE, MOTOR VEHICLE TIRE, METAL, RAYON, WEAR RESISTANCE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0532 STEP NU--UR/0138/70/029/002/0039/004L
CIRC ACCESSION NO--AP0119451
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119451

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS STUDIED OF THE CORD TYPE ON THE PERMANENT DEFORMATION OF "R" (RADIAL) TIRES AFTER 1000 KM RUN IN PERIOD. RUNNING IN TIRES WITH METAL OR RAYON (I) CORDS INCREASED THE MAX. TIRE WIDTH BY 3.5PERCENT. IN THE CASE OF TIRES WITH NYLON (II) CORDS THE MAX. WIDTH INCREASE WITH 6.1-7.5PERCENT. THE TIRE DIAM. MEASURED AT THE TREAD CENTER INCREASED BY SIMILAR TO 2PERCENT INDEPENDENTLY OF THE CORD MATERIAL. THE TIRE DIAM. MEASURED AT THE TREAD EDGE INCREASED DURING THE RUN IN PROPORTIONATELY WITH THE TENSILE COMPLIANCE OF THE SIDE CARCASS WALLS. THIS CAUSED DIFFERENCES IN THE SHAPE OF THE CONTACT AREA BETWEEN THE TIRE AND THE ROAD SURFACE. THE CONTACT AREA OF TIRES WITH II CORDS WAS NEARLY RECTANGULAR. THE CONTACT AREA OF TIRES WITH I OR METAL CORDS WERE ELLIPSOID. THE CONTACT PRESSURE WAS MORE EVENLY DISTRIBUTED AND 9-17PERCENT LOWER FOR TIRES WITH II CORDS THAN FOR TIRES WITH I CORDS, RESULTING IN A SLOWER WEAR OF THE II TIRES. FACILITY: NAUCH.-ISSLED. INST. SHINNOI PROM., MOSCOW, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--FORMULATING DIFFERENTIAL EQUATIONS FOR MANOMETERS CONTAINING FLUID
-U-
AUTHOR-(03)-DREZDOVICH, V.N., KUZNETSOV, A.D., YUSHCHENKO, V.I.
COUNTRY OF INFO--USSR *D*
SOURCE--LENINGRAD, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY.
PRIBOROSTROYENIYE, NO 2, 1970, PP 97-101
DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES, PHYSICS

TOPIC TAGS--MANOMETER, DIFFERENTIAL EQUATION, LAGRANGE EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1686

STEP NO--UR/0146/70/000/002/0097/0101

CIRC ACCESSION NO--AT0123510

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0123510

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS PROPOSED FOR FORMULATING DIFFERENTIAL EQUATIONS FOR MANOMETERS OF LGG SYSTEMS. THE PRESENCE OF FLUID IN THEIR SENSING ELEMENTS AND IN THE PULSE LINES IS CONSIDERED. THE METHODOLOGY IS BASED ON THE USE OF LAGRANGE EQUATIONS WHICH HAVE FOUND WIDE APPLICATION IN THE THEORY OF SOLID BODY VIBRATION. FACILITY: LENINGRAD INSTITUTE OF PRECISE MECHANICS AND OPTICS.

UNCLASSIFIED

Acc. Nr.: A70046708

Ref. Code: Z1B0146

D

USSR

UDC 62-251

IVANOVA, V.V., DROZDOVICH, V.N.

"Stabilization of Rotors on Gas Lubricated Bearings for Small Radial Loads"

O stabilizatsii rotorov na podshipnikakh s gazovoy smazkoy pri malykh radial'nykh nagruzkakh (cf. English above), Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostro-
veniye, 1970, No 1, pp 103-107

Translation:

A technique is presented for the approximate analysis of the stability of a lightly loaded balanced rotor with elastic restraint of the bushings of the radial sliding bearings.

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Reel/Frame
19790011

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1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SYNTHESIS OF SOME ALKYLAMINO SUBSTITUTED 1,3-DIOXANES -U-
AUTHOR--(03)-BOGATSKIY, A.V., DROZDOVSKAYA, A.I., REZNIK, S.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(2), 233-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC SYNTHESIS, AMINE, DIOXANE, IR SPECTRUM, FORMALDEHYDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1062 STEP NO--UR/0063/70/015/002/0233/0234
CIRC ACCESSION NO--AP0128489
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128489

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING 0.31 MOLE PARAFORMALDEHYDE AND 1 MOLE ISO, BUCHO WITH 0.71 MOLE OF THE REQUISITE AMINE 3-5 HR AT 100DEGREES GAVE 40PERCENT ME SUB2 NCH SUB2 CNE SUB2 CHO, B SUB17 44DEGREES, D PRIME20 0.8568, N PRIME20 SUBD 1.4245; AND 47PERCENT ET SUB2 NCH SUB2 CNE SUB2 CHO, B SUB7 51-2DEGREES, 0.8565, 1.4340. THESE CONDENSED WITH, RESP., 3,ETHYL,2,4,PENTANEDIOL AND 2,ETHYL,2,METHOXYMETHYL,1,3,PROPANEDIOL IN THE PRESENCE OF P,MEC SUB6 H SUB4 SO SUB3 H CATALYST IN REFLUXING C SUB6 H SUB6 WITH REMOVAL OF RESULTING H SUB2 O, GAVE: 6PERCENT, 2,(2,DIETHYLAMINO,1,1,DIETHYLETHYL) 4,6,DIETHYL,5,ETHYL,1,3,DIOXANE, B SUB6 62-5DEGREES, 0.9029, 1.4335; AND 6PERCENT 2,(2,DIETHYLAMINO,1,1,DIETHYLETHYL),5,METHOXYMETHYL,5,ETHYL,1,3,DIOXANE, B SUB5 73-4DEGREES, 0.9611, 1.4375. IR SPECTRA WERE DESCRIBED. FACILITY: ODESS. GOS. UNIV. IM. MECHNIKOVA, ODESSA, USSR.

UNCLASSIFIED

USSR

UDC 621.371.332.3

KRUPENIO, N. N., SHAPIROVSKAYA, N. Ya., and DROZDOVSKAYA, I. B.

"Radio Wave Scattering by Local Districts of the Moon, Mars, and Venus in the Centimeter and Decimeter Wavelength Ranges"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 5 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 5--collection of works) "Nauka," 1972, pp 13-18 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 1068)

Translation: From the diagram of inverse scattering for the moon, Venus, and Mars, the ratios of the diffusion component power to the total power of the radiated signal are computed for various wavelengths by the radar measurement method. The computations were made under the assumption of isotropism of the surface characteristics within the limits of the section participating in the radiation transfer. Two illustrations. N. S.

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USSR

UDC 632.4:633.881

LYMAN, V. Ye., and DROZDOVSKAYA, L. S., All Union Scientific Research Institute of Medicinal Plants

"Feasibility of the Utilization of Chemical Agents Against Adonis Smut"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 3, 1972, pp 42-44

Abstract: Several approaches were studied to prevent infection of adonis with smut. The most effective method to control smut consists of preplanting treatment of the seeds with TMTD or agronal using 5 g/kg concentration, treatment of the root stalks prior to planting for 3-5 min with a 1% suspension of agronal or 2% suspension of TMTD, or a double spraying of the plants with a 2% suspension of TMTD or 0.5% suspension of cyran: the first treatment during the period of massive sprouting of the adonis, followed by another treatment a week later. The consumption of the liquid should be 600 l/hectare.

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USSR

UDC: 669.295:620.1

PROKHODTSEVA, L. V., DROZDOVSKIY, B. A. and YURUSHKINA, N. V.

"Anisotropy of Failure Characteristics of Sheets From OT4 and OT4-1 Alloys"

Moscow, Tsvetnyye metally, No 3, Mar 72, pp 72-73

Abstract: This study concerns the presence of considerable "reverse" anisotropy in sheets from OT4 and OT4-1 titanium alloys on the basis of mechanical properties and failure characteristics. All failure characteristics of lateral specimens from the experimental alloys appear to be much higher than those of longitudinal specimens. Lateral specimens of steel, Al alloys, and a number of Ti ($\alpha+\beta$)- and β -alloys generally have lower failure characteristics than those exhibited by longitudinal specimens. This regularity, termed "reverse" anisotropy, for OT4 and OT4-1 alloys, was also found to be typical of other Ti alloys (VT5-1, VT20, VT14, VT3-1) as annealed. Annealing OT4-1 alloy above polymorphous transformation temperatures to obtain a large uniaxial grain eliminates the "reverse" anisotropy. The anisotropy of OT4 and OT4-1 alloy sheets on the basis of failure (impact bending) is to a large extent related to the substantial difference in deformation values between longitudinal and transverse

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PROKHODTSEVA, L. V., et al., Tsvetnyye metally, No 3, Mar 72, pp 72-73
specimens during failure (in the presence of a crack). (4 illustrations,
1 table, 6 bibliographic references).

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USSR

UDC: 620.171

DRCZDOVSKIY, B. A. and MCROZOV, Ye. M.

"Two Mechanical Characteristics Indicating Resistance to Destruction"

Moscow, Zavodskaya laboratoriya, No. 1, 1971, pp 78-89

Abstract: Two criteria for determining the conditions under which the limiting condition for equilibrium, leading to destruction, sets in are considered. The first is based on an energy condition of the form $\delta\Gamma = G\delta S$, where δS is the size of a developed crack, $\delta\Gamma$ is the amount of surface energy required to form the new surface at the break, and G is the energy to the crest of the break per unit area of the break; i.e., G is the amount of liberated elastic energy. The second criterion is based on the assumption that there is a plastic zone before the end of the break from the very beginning of the deformation process. With the flat specimen stretched under the conditions of plane tension, the plastic

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DROZDOVSKIY, B.A., et al, *Zavodskaya laboratoriya*, No 1, 1971, pp 78-89

zone will have the form of a wedge at right angles to the movement of the break; such a formation is required for use of the theory of the critical openings of cracks. The authors define the criterion of destruction in terms of the equilibrium limit, and formulate it in mathematical terms. A device for measuring the displacement or yield in a crack opening is described. The authors are associated with the Moscow Engineering-Physical Institute.

2/2

- 101 -

AP0049804

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

UR0135

D

101595q Effect of degradation conditions on the structure, plastoelastic, and physicochemical properties of reclaimed rubber. Drogodovskii, V. F.; Yurtseva, T. V. (Nauch.-Issled. Inst. Shin. Prom. Moscow, USSR). *Kauch. Rezina* 1970, 29(1), 11-14 (Russ). SKS-30 ARKM-15 (I) tread elastomers (contg. 50 parts HAF carbon black) were subjected to mech., dispersive, thermo-mech., and aq. degradation, and the structure, plastoelastic, and physicom. properties of the reclaimed rubber were studied. Ir spectra of the sol. fractions from the reclaimed rubber indicated that the most intensive breakdown of crosslinks resulted from aq. degradation. The physicom. properties of the reclaimed rubber depended on the crosslink d. and degree of degradation of I. Reclaimed rubber having superior tensile strength and plasticity was obtained by lowering the degradation temp. to 20-60°, reducing degradation time, and by using effective radical acceptors, and proper softeners.

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REEL/FRAME
19801726

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1/2 010
UNCLASSIFIED
PROCESSING DATE--30OCT70
TITLE--COMPLEXING OF COPPER WITH HEXAMETHYLENEDIAMINETETRAACETIC ACID -U-
AUTHOR--(02)--GORELOV, I.P., DROZHALKINA, L.G.
COUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 253-6
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COPPER COMPLEX, POLAROGRAPHIC ANALYSIS, ORGANOCOPPER COMPOUND,
CHEMICAL COMPOSITION, ORGANIC COMPLEX COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/2143
STEP NO--UR/0075/70/025/002/0253/0256
CIRC ACCESSION NO--AP0125726
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125726

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEX FORMATION OF CU WITH HEXAMETHYLENEDIAMINETETRAACETIC ACID (I) WAS STUDIED BY A POLAROGRAPHIC METHOD. CU FORMS A 1:1 COMPLEX WITH I IN A WIDE PH RANGE. THE INSTABILITY CONST. OF CUL PRIME2 NEGATIVE, WHERE H SUB4 L EQUALS I, WAS PK EQUALS 14.47 PLUS OR MINUS 0.10. THIS PK IS LOWER THAN FOR THE CU COMPLEX WITH EDTA (18.8), THUS THE FORMATION OF THIS COMPLEX IS ACCOMPANIED BY THE FORMATION OF A LESS STABLE RING, THEN WITH EDTA. FACILITY: KALININ POLYTECH. INST., KALININ, USSR.

UNCLASSIFIED

USSR

UDC 533.916

D

BASOV, N. G., Academician, HOYKO, V. A., DROZHBIN, Yu. A., ZAKHAROV, S. M.,
KROKHIN, O. N., SKLIZKOV, G. V., and YAKOVLEV, Y. A., Physics Institute imeni
P. N. Lebedev of the Academy of Sciences USSR, Moscow

"Investigation of the Initial Stage of the Gas-Dynamic Dispersion of a Laser
Jet Plasma"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 6, 21 Jun 70, pp 1248-1250

Abstract: Since previous experiments study the radiation spectra and gas-dynamic parameters of a plasma in large time intervals exceeding the length of the laser pulse, the present study covers the dynamics of the motion and the kinetics of ionization processes in a laser plasma with a high time resolution. It is noted that the gas-dynamic motion of a plasma accompanying the high-temperature heating of condensed material with focused laser radiation has been investigated because of the importance of the possible use of a laser plasma for thermonuclear fusion, as a source of multicharged ions for spectroscopic studies of astrophysical interest, for accelerator technology, etc. The study of the dispersion of a plasma during the action of a laser pulse and at distances r from the surface of the target comparable with the diameter d of the focusing spot of the laser radiation made it possible to trace different phases of the motion of the material,

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USSR

BASOV, N. G., et al, Doklady Akademii Nauk SSSR, Vol 192, No 6, 21 Jun 70, pp 1248-1250

including the initial stage of heating and the "freezing" of the ionization state of the plasma. The radiation of a neodymium laser with an energy of 10 j and a half-length of 15 nsec was focused with a 5-cm lens on the surface of a carbon target in a vacuum of 10^{-6} torr, and the structure of the dispersing plasma was investigated on the basis of its luminosity. Space-time diagrams of ion dispersion were obtained from analysis of the data (see Fig.); for $r \leq 1$ mm the plasma emits a continuous spectrum in the visible region (lines are observed only at distances $r \geq 1$ mm). As the distance increases to 10 mm, a break is observed in the luminosity of ions CVI and CV from the target. The regions occupied by ions of different charges partially intersect, although there are no discontinuities in the density of material in the plasma. The following model of the gas-dynamic motion of the heated matter is constructed from an analysis of the experimental data: The plasma moves from the region of heating ($r < d$), where the electron temperature $T_e \sim 120$ ev on the basis of measurements of the recombination x-radiation, into the vacuum perpendicular to the surface with a velocity $u \sim 6 \cdot 10^6$ cm/sec. In this region the velocity of the plasma is close to the speed of sound and the ion temperature corresponding to this

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BASOV, N. G., et al, Doklady Akademii Nauk SSSR, Vol 192, No 6, 21 Jun 70, pp 1248-1250

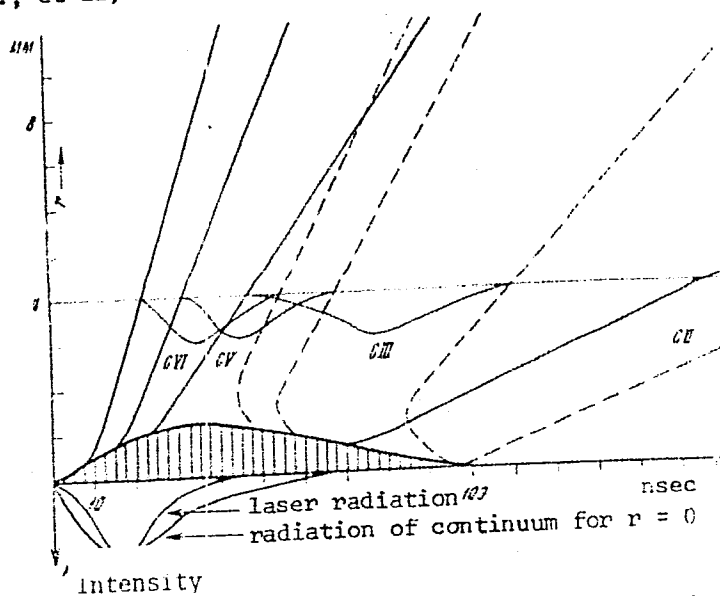
velocity is ~ 125 ev. A considerable acceleration of the plasma is observed at distances $r \leq 1$ mm. The velocity here is several times greater than the initial. The effect of "freezing" is obtained, since the density drops as $u^{-1}r^{-2}$ along the trajectory of the ion and the recombination time becomes much greater than the characteristic dispersion time. In one process the freezing of the maximum degree of ionization occurs several nanoseconds after the beginning of the motion of the "elementary volume" of the plasma. This freezing process also occurs for the remaining ions. The laminar structure of the jet which is observed in photographs is explained on this basis. The energy lost by the plasma contained in the region $r \leq d$ to radiation in the range 20-100 Å over a time of 40 nsec is estimated to be about 0.5 joule.

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USSR

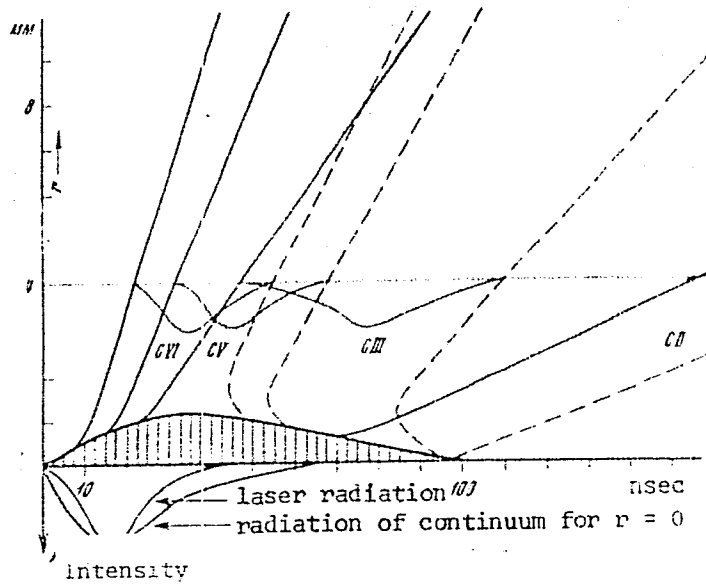
BASOV, N. G., et al, Doklady Akademii Nauk SSSR, Vol 192, No 6, 21 Jun 70, pp 1248-1250



r-t diagram of the dispersion of carbon ions at different times. Oscillograms of ion lines at the distance $r = 4$ mm are given. The shaded

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BASOV, N. G., et al, Doklady Akademii Nauk SSSR, Vol 192, No 6, 21 Jun 70, pp 1248-1250



$r-t$ diagram of the dispersion of carbon ions at different times. Oscillograms of the radiation of laser lines at the distance $r = 4 \text{ mm}$ are given. The shaded

USSR

UDC 577.15.016

DROZHENNIKOV, V. A., GUBERNIYEV, M. A., RYBAKOV, N. I., RYZHOV, N. I., and MASHINSKAYA, T. YE., Scientific Research Laboratory of Experimental Immunobiology, Academy of Medical Sciences USSR, Moscow

"Investigation of Nuclease Activity of E. Coli (λ) After Exposure to Ultraviolet Light and Ionizing Radiation"

Moscow, Biokhimiya, Vol 36, No 5, 1971, pp 883-888

Abstract: The activities of endonuclease I, exonuclease III, and the phage-specific exonuclease of the lysogenic E. Coli K12 (gamma) strain were studied. After exposure to various doses of ultraviolet light $6.46 \text{ erg/mm}^2/\text{sec}$ and 645 MeV protons 60 rad/sec, induction of bacteriophages under these conditions was also investigated. Doses which evoke maximum induction of bacteriophages do not change the activity of either endonuclease I or endonuclease III. On the other hand, the activity of the phage-specific exonuclease is proportional to the induction of bacteriophages, reaching its maximum just prior to lysis of the irradiated cells. As a result, curves representing the lethal effects and bacteriophage induction caused by irradiation with ultraviolet light and with high energy protons have different shapes. After exposure to ultraviolet light, a spike-shaped maximum induction occurs at a dose of 250 erg/mm^2 . After exposure to high energy protons, the induction $1/2$

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DROZHENNIKOV, V. A., et al., Biokhimiya, Vol 36, No 5, 1971, pp 883-888

curve has a plateau extending from 50 to 100 Krad.

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USSR

UDC 576.8

D
3
RYBAKOV, N. I., GUBERNIYEV, M. A., CHIMIROV, O. B., DROZHENNIKOV, V. A.,
KOLOBOV, A. V., ANISKIN, Ye. D., and KOZLOV, V. A., Institute of Experimental
Biology, Academy of Medical Sciences USSR

"The Effect of Some Radioprotectors on Processes Associated With Lysogeniza-
tion of Bacteria and Induction of Intracellular λ -Exonuclease"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 1, 1970,
pp 38-42

Abstract: The radioprotector finam (an aminothiols) inhibited the frequency of
lysogenization of E. coli SF-14 (λ -try^S) by λ -phage and inhibited the
synthesis of induced λ -exonuclease at different times after infection. The
effect was most pronounced in early stages of infection. After thirty minutes
the inhibiting effect of the radioprotector on λ -exonuclease activity de-
creased sharply. Results of determination of the activity of λ -exonuclease
are consistent with data on the effect of finam on lysogenization of the same
bacterial strain. This suggests that enzyme systems play a part in the de-
velopment of lysogenicity in bacterial cells. These enzymes may be DNases of
the endonuclease type.

1/1

- 52 -

Acc. Nr:

AP0046553

Ref. Code: UR 0216

PRIMARY SOURCE: Izvestiya Akademii Nauk SSSR, Seriya
Biologicheskaya, 1970, Nr 1, pp 38-42

Rybakov, N. I.; Guberniyev, M. A.; Chimirov, O. B.;
Drozhennikov, V. A.; Aniskin, Ye. D.; Kolobov, A. V.;
Kozlov, V. A.

INFLUENCE OF SOME RADIOPROTECTORS ON THE PROCESSES CONNECTED
WITH LYSOGENIZATION OF THE BACTERIA AND INDUCTION
OF INTERCELLULAR λ -EXONUCLEASE

The influence of the radioprotector finam on the processes of lysogenization of the bacteria with the λ phage and induction of λ -exonuclease was studied in the course of experiments with E. coli SF-14 (λ -try-Sr).

It was shown that this preparation tangibly suppresses the frequency of E. coli lysogenization and oppresses synthesis of the induced λ -exonuclease.

The results concerning activity of this enzyme definitely correlate with the data related to the influence of finam on the lysogenization process of the same bacterial strain.

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REEL/FRA
19781816

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USSR

UDC 669.295.046.43

GALITSKIY, N. V., DROZHZHEV, V. I., and ZAVADOVSKAYA, V. N.

"Interaction of Metallic Titanium With Chlorine in a Medium of Molten Chlorides"

Sb. tr. Vses. n.-i. i proyekt. in-t titana (Collection of Works of the All-Union Scientific Research and Design Institute of Titanium), 1970, 2, pp 33-36 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G150)

Translation: A study is made of the interaction of Cl with metallic Ti sponge and Ti shavings in molten Na, K, Mg chlorides and their mixtures at temperatures of 650-900° and Cl consumption of 0.96-3 l/min. The interaction occurs in two stages. The composition of the melt has the following effect on the process: in the presence of MgCl₂ the reaction rate is slower than in pure K and Na

chlorides and the start of the interaction is retarded owing to Ti passivation. The chlorination rate is independent of the grain size of the material and the temperature under the conditions outlined. Dilution of Cl with air changes the nature of interaction; Ti oxides appear in the melt, while free Cl appears in the flue gases. 3 ill.

Authors' abstract

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USSR

UDC 669.295.046.43

IL'ICHEV, V. A., ZOTIKOVA, A. N., DROZHZEY, V. J.

"Specifics of Behavior of Petroleum Coke in Chlorination of Titanium-Containing Material in a Fluidized Bed"

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. 72, pp 190-195. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G211 by the authors).

Translation: In order to determine the influence of the reducer grain size on the technological indicators of the process of chlorination in a fluidized bed, laboratory and pilot plant tests were performed with various grain sizes. The tests were performed for two Ti-containing materials: Ti slag and TiO_2-SiO_2 concentrate. The studies made it possible to determine the grain size of petroleum coke necessary to provide a high degree of extraction of Ti from the Ti-containing material with slight coke loss. 1 fig; 4 tables.

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USSR

UDC 669.295.054.79

GALITSKIY, N. V., BAYBEKOV, M. K., DROZHZEY, V. I., CHEPRASOV, I. M.,
MEDVEDCHIKOV, E. P., BARKOVA, N. P., ZAVADOVSKAYA, V. N., SELEDTSOV, D. K.,
and KORENDYASEV, M. I.

"Reprocessing Waste Titanium and Its Alloys in a Chloride Melt"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya
Publishing House, Vol 6, 1970, pp 135-140

Translation: Results are given of experimental-industrial research on the reprocessing of ungraded waste mixtures of chips from different titanium alloys by chlorinating in a chloride melt. An experimental batch of marketable titanium sponge was obtained. The characteristics of the raw material used, the chlorine gas, the coke, and the working fusion are given, along with a description of the technological conditions, the chart for preparing chips for chlorination, and the technological equipment charts for the chlorination and cleaning conversions. An analysis is made of the distribution of alloying elements in the products of chlorination. Basic expenditure coefficients, calculated per ton of industrial titanium tetrachloride, are deduced, and data are given on the quality of the $TiCl_4$ and the sponge titanium obtained. Three illustrations and one table.

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USSR

UDC 669.295.05.054

GALITSKIY, N. V., SAVADOVSKAYA, V. N., and DROZHNEV, V. I.

"On the Solubility of Pentachloride of Molybdenum in Titanium Tetrachloride"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 34-36

Translation: The solubility of MoCl_5 in TiCl_4 at temperatures of 4, 25, 65 and 100°C is determined by the saturation method. In this temperature interval, it changes from 0.002 to 0.034 of a molecular particle. The heat of solution of MoCl_5 in TiCl_4 is $\Delta H^\circ_{\text{solu}} = 6.82 = 0.2$ gigacalories per mole. Four illustrations, one table, and six bibliographic entries.

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USSR

UDC 669.295.48

GALITSKIY, N. V., BAYBEKOV, M. K., ~~DROZHICHEV, V. I.~~, CHEPRASOV, I. M.,
MEDVEDCHIKOV, E. P., BARKOVA, N. N., ZAVADOVSKAYA, V. N., SELEDTSOV, D. K., and
KORENDYASEV, M. I.

"Processing of Wastes of Titanium and Its Alloys in Chloride Salt Melt"

Sb. tr. Vses. n.-i. i proyekt. in-t titana [Collected works of All-Union
Scientific-Research and Planning Institute for Titanium], 6, 1970, 135-140,
(Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract
No. 16199 by the Authors).

Translation: Results are presented from pilot-scale studies of the pro-
cessing of unconditioned wastes with a mixture of chips of various Ti
alloys by chlorination in a chloride salt melt. An experimental batch of
commercial Ti sponge is produced. Characteristics are presented for the
raw material, chlorine gas, coke, and working melt used; the technological
modes and plans of preparation of the chips and chlorination are presented,
along with a technological diagram illustrating the limits of chlorination
and purification. Distribution of alloying metals in the chlorination of
products is analyzed, the basic consumption factors per ton of technical
TiCl₄ are presented, and data are presented on the quality of the TiCl and
sponge Ti produced. 3 figures; 1 table.

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USSR

UDC 669.295.046.43

GALITSKIY, N. V., ZAVADOVSKAYA, V. N., and DROZHZHEV, V. L.

"The Solubility of Molybdenum Pentachloride in Titanium Tetrachloride"

Sb. tr. Vses. n.-i. i proyekt. in-t titana, [Collected Works of All-Union Scientific-Research and Planning Institute for Titanium], 6, 1970, 34-36, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No. G177 by the authors).

Translation: The saturation method is used to determine the solubility of MoCl_5 in TiCl_4 at temperatures of 4, 25, 65, and 100° . In this temperature interval, the solubility varies from 0.002 to 0.034 mol portions. The heat of dissolution of MoCl_5 in TiCl_4 $\Delta H_{\text{sol}}^\circ = 6.82 \pm 0.2$ kcal/mol.

4 figures; 1 table; 6 biblio. refs.

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USSR

UDC 548.5:539.4

POSTNIKOV, V. S., AMMER, S. A., DROZHZHIN, A. I., Voronezh Polytechnical Institute

"Internal Friction and Strength of Germanium Whiskers"

Moscow, Kristallografiya, Vol 18, No 3, May/Jun 73, pp 658-659

Abstract: An investigation was made of the influence which the transverse dimensions of germanium whiskers have on their strength and internal friction Q^{-1} . The crystals were grown by the method of chemical transport reactions. Crystals of p-conductivity with orientation of the growth axis in direction $\langle 111 \rangle$ were investigated with a diameter of 2-50 μm and a working length of about 1.5 mm. Specimens with both smooth and defective surfaces were studied. The measurements were made at room temperature and at approximately 760°C in a vacuum of about $5 \cdot 10^{-5}$ mm Hg. Strength decreased with increasing thickness. Specimens with surface defects had low strength. Q^{-1} was minimum at room temperature and independent of thickness. At 760°C, Q^{-1} increased with decreasing thickness. Internal friction was considerably reduced by additional annealing at 850°C for one hour.

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- 4 -

USSR

UDC: 615.45:615.783.1

CHICHIRO, V. Ye., SURANOVA, A. V., BRUTKO, L. I., DROZHZHINA, V. V., Central
Pharmaceutical Scientific Research Institute

"A Method of Synthesizing the Morphine Base"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 15, May 71, Author's Certificate No 302342, Division C, filed 27 Mar 70,
published 28 Apr 71, p 80

Translation: This Author's Certificate introduces a method of synthesizing the
morphine base from morphine hydrochloride by portion between a phosphate
buffer solution and chloroform. As a distinguishing feature of the patent,
the quality of the produce is improved by using a phosphate buffer solution
with pH of 6.5-7.0

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- 87 -

Powder Metallurgy

USSR

UDC 621.762.2.001:669.3

DROZODV, I. A.

"Investigation of Variation in the Dispersity of Copper Powder During Reduction of Scale"

Tr. Kuyvyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, vyp. 42, pp 76-81 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G334 by I. Brokhin)

Translation: Depending on reduction temperature regimes, copper powders of varying grain size can be obtained from the same initial powders of copper scale. Varying fractions of ground scale were reduced at a temperature of $\sim 300^\circ$ in a dissociated NH_3 environment for 4 hr. How-temperature reduction of even coarse initial powders makes it possible to obtain copper powders with a high content of fine fractions (size of the bulk of grain 1-20 microns). The production of more dispersed powder is due to splitting of scale particles along Cu_2O grain boundaries. In view of this, the cooper-scale grinding time in many cases can be significantly shortened. One illustration. Two tables.

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USSR

UDC:624.131+539.215

DRUEN, M.V.

"Laboratory Investigation of Thermal Pressure of Ice"

Moscow, MAGI Simpoz. Led i ego Vozdeystviye na Gidrotekhn. Sooruzh, 1972 (MAGI Symposium. Ice and its Effects on Hydraulic Structures, 1972), 1972, pp 80-91 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2V645)

Translation: With the usual method, used to determine the thermal pressure of ice, the edges of the specimen are held fixed while the temperature is increasing. Another method is based on conducting tests with constant speed of deformation and various temperatures. The second method's advantage over the first is that the test is conducted at constant temperature and this makes it possible to establish the relation between thermal pressures and basic characteristics of ice creep. The paper presents the test results of three types of ice, with constant speed of deformation of 10^{-8} sec⁻¹, a rheology model is presented, corresponding to stress-strain curves, it is used to calculate thermal pressures of thick ice bed rigidly restricted in one direction. 4 referen-es. Author's resume.

1/1

- 61 -

1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PROPERTIES OF AQUEOUS SOLUTIONS OF LITHIUM AND SODIUM NITRITES AT
15, 25, AND 35DEGREES -U-
AUTHOR-(02)-ANDREYEVA, T.A., DRUCHINA, I.D. D
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1080-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--LITHIUM_COMPOUND, SODIUM COMPOUND, NITRITE, AQUEOUS SOLUTION,
ACTIVATION ENERGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1115 STEP NO--UR/0078/70/015/004/1080/1083
CIRC ACCESSION NO--AP0123107
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123107

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VISCOSITY, D., ELEC. COND., N, AND PH OF AQ. SOLNS. OF LI AND NA NITRITES WERE DETD. AT 15, 25, AND 35DEGREES. THE ENERGIES OF ACTIVATION OF VISCOSITY AND OF ELEC. COND. ARE PLOTTED VS. CONC. ASSOCNS. OF THE IONS IN SOLNS. INVOLVING ALSO H SUB2 O MOLLS. ARE INDICATED. DECREASE OF THE PH OF LIHQ SUB2 SOLNS. WITH INCREASING CONC. OF LIHQ SUB2 SUPPORTS THE SUPPOSITION OF THE FORMATION OF SUCH ASSOCIATES.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

1/2 025
TITLE--OIL ADDITIVES -U-

AUTHOR--(05)-KULIYEV, A.M., ZEYNALOVA, K.A., SADYKHOV, K.I., SULEYMANOVA,
F.G., DRUZHHEVA, I.M.
COUNTRY OF INFO--USSR

SOURCE--BAKINSKIY RABOCHIY, SEPTEMBER 18, 1970, P 3, COL 3

DATE PUBLISHED--18SEP 70

SUBJECT AREAS--MATERIALS, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--LUBRICATING OIL, LUBRICANT ADDITIVE, CHEMICAL SYNTHESIS,
PETROLEUM REFINING, HONORARY TITLE AWARD, CHEMICAL PERSONNEL (U)BFX
LUBRICATING OIL ADDITIVE, (U)SB3 LUBRICATING OIL ADDITIVE, (U)SK3
LUBRICATING OIL ADDITIVE, (U)AZNI18U LUBRICATING OIL ADDITIVE,
(U)INKHP21 LUBRICATING OIL ADDITIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605011/B09 STEP NO--UR/9000/70/000/000/0003/0003

CIRC ACCESSION NO--AN0140180
UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AN0140180
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. "THE DEVELOPMENT OF THE SYNTHESIS
TECHNOLOGY FOR THE EFFICIENT ADDITIVES TO MOTOR OILS REFINED FROM THE
BAKU PETROLEUMS, BFK, SB 3, SK 3, AZNII 8U, AND INKHP 21, AND REDUCING
IT TO INDUSTRIAL APPLICATIONS", THE WORK DONE BY A. M. KULIYEV, K. A.
ZEYNALOVA, K. I. SADYKHOV, F. G. SULEYMANOVA, I. M. DRUDZHEVA, I. I.
NAMAZOV, AND V. YE. BASHAYEV HAS BEEN NOMINATED BY THE INSTITUTE OF
CHEMISTRY OF ADDITIVES OF THE AZERBAYDZHAN ACADEMY OF SCIENCES FOR THE
STATE PRIZE OF THE AZERBAYDZHAN S.S.R.

UNCLASSIFIED

USSR

UDC: 51:330.115

DRUGALEVA, Z. S., GLEZER, N. N., TULUPOVA, S. S.

"Use of Mathematical Models in the Development and Allocation of Complex Production of a Territory"

V sb. Sotsial'no-ekon. probl. razvitiya Urala i leninsk. metodol. ekon. issled. (Socioeconomic Problems in Ural Development and Leninist Methodology of Economic Research--collection of works), Sverdlovsk, 1971, pp 278-282 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V872)

Translation: Two linear programming models are written out.

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USSR

UDC 621.373.029.7.001.5

LOBOV, G.D., SHTYKOV, V.V., BOGETKIN, V.I., ~~DRUGOV, I.V.~~

"Possible Mechanism Of Discharge Current Change In CO₂ Affected By Laser Radiation"

Radiotekhnika i elektronika, Vol XVII, No 6, June 1972, pp 1246-1251

Abstract: One of the possible mechanisms is considered for change of the discharge current in carbon dioxide gas affected by the radiation of a CO₂ laser. The theoretical results are found in satisfactory agreement with experimental data. In the experiments particular attention was paid to the effect of radiation on the discharge current in CO₂ during irradiation of its cathode region by a fine laser beam. A theoretical and experimental estimation was also made of the efficiency of conversion of a detector of infrared radiation, using a change of discharge current. It is possible that the results obtained in this work can be useful during study of the processes in the gaseous medium of CO₂ amplifiers and generators, and also during use of the change of the discharge current for registering the radiation of a CO₂ laser. The authors thank E.S. Shitsman for participation in the conduct of the experiments. 5 fig. 9 ref. Received by editors, 12 April 1971.

1/1

- 120 -

USSR

UDC 546.45:545.27:543.544.25

DRUGOV, Yu. S., MURAV'YEVA, G. V., GRINBERG, K. M., NESTERENKO, G. N.,
SOKOLOV, D. N.

"Gas Chromatographic Method of Determination of Beryllium in Air"

Moscow, Zavodskaya Laboratoriya, No 11, 1972, pp 1305-1306.

Abstract: The authors have developed a gas chromatographic method for determination of microquantities of beryllium in the air at industrial enterprises, based on the formation of a volatile beryllium chelate with trifluoroacetyl acetone. A linear dependence of the signal of the detector on beryllium content is observed in the range of concentrations of 0.4 to $2 \cdot 10^{-5}$ mg/ml Be. The sensitivity of the determination is $1 \cdot 10^{-5}$ mg/ml Be.

1/1

- 77 -

Vacuum

USSR

UDC: 533.599 .

BRONFIN, M. B., DRUGOVA, I. A.

"Introducing a Cooled Inductor Into a High-Vacuum Chamber"

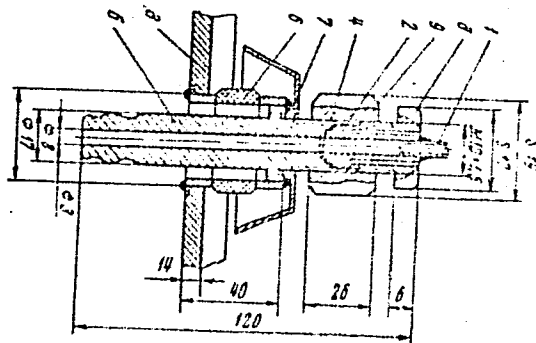
Moscow, Pribery i Tekhnika Eksperimenta, No 3, May/June 72, p 161

Abstract: The paper describes a lead-in designed for introducing a high frequency inductor into the working chamber of a vacuum installation for studying sublimation of metals. The lead-in is diagrammed in the figure. Silver-soldered to each end 1 of the tubular copper inductor mounted in the vacuum chamber is a 1Kh18N9T stainless steel feed-through insulator 2. The tapered outer surfaces of these end-pieces are coupled through aluminum or copper sealing gaskets 4 to the corresponding reception sockets in water cooling fittings 5 as the inductor is seated in the bottom of the chamber 3. One of these fittings is argon-arc welded to the chamber floor, which is made of 1Kh18N9T, and the other is connected through combination insulator 6. A metal jacket 7 protects the ceramic surface of the insulator from the vaporized metal. The inductor is made vacuum tight at disconnect points by screwing bolts 8 into nuts 9 whose position can be changed on the threaded part of the fittings. The proposed device has been in use for two years,

USSR

BRONFIN, M. B., DRUGOVA, I. A., Pribory i Tekhnika Eksperimenta, No 3, May/June 72, p 161

and allows evacuation to 10^{-8} mm Hg in the process of heating specimens with a mass of about 2 g in a volume of 30 liters. In this time period, the device was used in heating more than 200 specimens to temperatures of the order of 1300°C . Any coolant can be used, including liquid nitrogen.



2/2

DRUIN, V.A.

transuranium elements

*18 Jan 73
JRS 58011
V. A. DRUIN, A. G.*

IN THE COMMITTEE FOR INVENTIONS AND DISCOVERIES
UNDER THE COUNCIL OF MINISTERS USSR

[Announcement: Moscow, Vestnik Akademi Nauk SSSR, Russian, Vol
42, No 11, November 1972, pp 172-173]

The Committee has registered the following scientific dis-
coveries:

G. N. FLEROV, YU. TS. OGANESEYAN, YU. V. JOHANOV, YU. A. LAZAREV,
Czechoslovak citizen J. ZVARA, V. Z. BELOV, V. A. DRUIN, A. G.
DENIN, AND YU. P. KHARITONOV.

"ELEMENT NO. 105 OF MENDELEEV'S PERIODIC SYSTEM"

Formulation of the discovery: Experimentally established
was the previously unknown phenomenon of formation of a chemical
element with the ordinal number 105. An isotope of that element
with a half-life $T_{1/2} \approx 2$ seconds was obtained during the α -
radiation of americium with neon nuclei.

Priority of discovery -- 18 February 1970.

Certificate No. 11b, Application No. OT-7896.

The data obtained by the authors of the discovery are of
great scientific importance, as they show a divergence of the
experimentally determined radioactive properties of element
No. 105 from the previously predicted theoretically on the
basis of known semi-empirical laws and require revision of the
latter. The new experimental data relating to the synthesis of the
element No. 105 indicate a real possibility of the detection of
heavier chemical elements in nuclear reactions, for example,
No. 106, and permit much more confidently predicting the proper-
ties of those elements.

USSR

DRUIN, V. A., Joint Institute of Nuclear Research

"Concerning the Radioactive Properties of Isotopes of the Element 103"

Moscow, Yadernaya Fizika, Vol. 12, No. 2, Aug 70, pp 268-271

Abstract: Experimental data on the α -decay of isotopes of element 103 are analyzed. A table is given of the isotopic composition of the Californium target used at Lawrence Radiation Laboratory in 1961 and the isotopes of element 103 which can be synthesized by irradiation of this element with B^{11} and B^{10} ions in different nuclear reactions accompanied by evaporation of x neutrons, where $x = 1-8$. It is concluded that the origin of the α -emitter with $E_{\alpha} = 8.6$ Mev and $T_{1/2} = 8 \pm 2$ sec observed at Berkeley in 1961 remains unclear.

Many experiments conducted at Dubna to find an isotope of element 103 with these characteristics of the α -decay gave a negative result. Isotopes which should arise in the irradiation of Californium by B^{10} , B^{11} ions were found at Dubna but for some unknown reason they were not recorded in the experiments of

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USSR

DRUIN, V. A., Yadernaya fizika, Vol. 12, No. 2, Aug 70, pp 268-271

Ghiorso, et al. The authors of the paper in which the new α -emitter was identified and interpreted as isotope 103^{257} retreated from this initial identification. At the present time these radioactive properties ($T_{1/2} = 8 \pm 2$ sec and $E_{\alpha} = 8.6$ Mev) are ascribed to one of the heavier isotopes 103^{258} and 103^{259} , which contradicts experimental data published in the 1961 article. If one still starts from the extremely unlikely hypothesis that the yields of products of reactions of the type $(B^{10,11}, \alpha, n)$ for α have different relationships in a Californium target than in other targets i.e., that the laws for the formation of an isotope of element 103 with $E_{\alpha} = 8.6$ Mev and $T_{1/2} = 8 \pm 2$ sec are specific for the Californium target used at Berkeley, the authors must carry out additional experiments on separated isotopes of Californium to prove the fact of synthesis of an isotope of element 103.

2/2

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UNCLASSIFIED

PROCESSING DATE--17JUL70

TITLE--STABILITY OF HEAVY NUCLEI AND THE LIMIT OF THE PERIODIC SYSTEM -U-

AUTHOR--FLERCV, G.N., CRUIN, V.A., FLEVE, A.A.

COUNTRY OF INFO--USSR

SOURCE--USP. FIZ. NAUK 1970 ICC(1), 45-52

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--HEAVY NUCLEUS, PERIODIC SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1976/C199

STEP NO--UR/0053/70/100/C01/C045/C092

CIRC ACCESSION NO--APCC42285

UNCLASSIFIED

7
5
12

Acc. Nr:

AP0042265

Abstracting Service:
CHEMICAL ABST.

H-70

Ref. Code:

UR0053

84949p Stability of heavy nuclei and the limit of the periodic system. Flerov, G. N.; Druin, V. A.; Plev, A. A. (Ob'edin. Inst. Yad. Issled., Dubna, USSR). *Usp. Fiz. Nauk* 1970, 100 (1), 45-92 (Russ). A comprehensive review is given of methods for the synthesis, sepn., and identification of the transfermium elements. The theoretical possibility for synthesizing superheavy nuclei is discussed in terms of evidence for a 2nd region of stability and the properties of nuclei near "magic" no. nuclei. 148 refs. SRTT

L.D

19

4

REEL/FRA
19760199

USSR

DRUIN, V. A., SKOBELEV, N. K., RUD', V. I., Joint Institute for Nuclear Research

"The Spontaneous Fission of Some Fm Isotopes"

Moscow, Yadernaya Fizika, Vol 12, No 1, 1970, pp 44-49

Abstract: The project was undertaken in order to check the influence of sub-shell $N=152$ on the spontaneous fission of Fm isotopes with the number of neutrons $N < 152$. The spontaneous fission half-lives of isotopes Fm^{246} , Fm^{248} , and Fm^{250} produced in the reactions $U^{233}(0^{18}, 5n)Fm^{246}$, $U^{238}(0^{16}, 6n)Fm^{248}$, and $U^{238}(0^{18}, 6n)Fm^{250}$ are determined. The measured value of the spontaneous fission half-life for Fm^{246} , $T_{sf} \sim 20$ sec, is in agreement with a value obtained earlier, and the value for Fm^{248} , $T_{sf} \sim 60$ hours, is greater than that of data published earlier. For Fm^{250} a T_{sf} value of about 10 years was obtained.

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USSR

UDC 669.18.046.516:621.746.32

KAZACHKOV, I. P., MELIKAYEV, N. P., DRUINSKIY, N. I., PARIMONCHIK, I. B.,
and OFENGENDEN, Dnepropetrovsk Metallurgical Institute, Yermakov Ferroalloys
Plant, and Donets Metallurgical Plant

"Melting Complex Alloys FKHMnS500 From Lean Iron-Manganese Ores and Their
Use"

Moscow, Stal', No 9, Sep 73, pp 800-801

Abstract: The possibility has been indicated at the Yermakov Ferroalloys
Plant for the industrial use of unconditioned Fe-Mn ores with a low phosphorus
content (0.03-0.04%) for melting alloys of the ferrochromium-manganese-
-silicon type (30-40% Cr, 17-35% Mn, 10-13% Si, and 0.06-5.5% C). Tests
were conducted in an arc furnace with a power rating of 1.2 mva. At the
Donets Metallurgical Plant Economic effect of 1.0-1.15 rubles/ton was achieved
by using alloy FKHMnS500 (38% Cr, 17.1% Mn, 12% Si, 5.2% C, 0.6% Al, 0.6%
Ca + Mg, 0.020% S, and 0.040% P) for deoxidation and alloys steel 40Kh in
the ladle. Distribution of elements in the rolled metal was uniform,
mechanical properties were somewhat improved, general consumption of ferro-
alloys during melting was diminished, loss of Cr, Mn, and Si was reduced by
2.6, 2.0, and 1.1 times, respectively, and the P and N content in the steel
was lowered. Four bibliographic references.

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1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ON THE THEORY OF FORMATION OF EXCITED HYDROGEN ATOMS IN COLLISIONS
BETWEEN NEGATIVE HYDROGEN IONS AND NEUTRAL ATOMS -U-
AUTHOR--DRUKAREV, G.F. D
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 6, PP 2210-2212
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--HYDROGEN, IONIZATION, PARTICLE COLLISION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2248 STEP NO--UR/0056/70/058/006/2210/2212
CIRC ACCESSION NO--AP0125826
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125826

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COLLISIONS BETWEEN A NEUTRAL HYDROGEN ATOM AND NEGATIVE HYDROGEN ION LEADING TO REMOVAL OF AN ELECTRON FROM THE NEGATIVE ION AND TO THE FORMATION OF AN EXCITED HYDROGEN ATOM IS CONSIDERED. IT IS SHOWN THAT IN A CERTAIN APPROXIMATION THE PROCESS MAY BE CONSIDERED AS INVOLVING THE EJECTION OF A STRONGLY BOUND ELECTRON FROM THE NEGATIVE ION AND SUBSEQUENT ADAPTATION OF THE REMAINING ELECTRON TO THE MODIFIED FIELD. THIS CONCEPT IMPLIES THAT THE ENERGY DEPENDENCE OF THE YIELD OF HYDROGEN ATOMS EXICTED IN THE S STATE SHOULD BE THE SAME AS FOR IONIZATION OF THE HYDROGEN ATOM. FACILITY: LENINGRAD. GOS. UNIV. IM. A. A. ZHDANOVA.

UNCLASSIFIED

Acc. Nr: Af0043697

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 3, pp 944-951

NEGATIVE ION DECOMPOSITION
IN THE SHORT RANGE POTENTIAL APPROXIMATION

Demkov, Yu. N.; Drukarev, G. F.; Kuchinskiy, V. V.

The cross section for electron detachment in collisions between negative ions A^- and atoms A are considered by the short range potential method (Firsov, Smirnov [1]). The adiabatic approximation is employed for quasi-stationary states; nonzero probability for survival of the A_2^- systems is taken into account and correspondingly allowance is made for the energy dependence of the cross section. The energy distribution of the emitted electrons is calculated in the same approximation. The case of different atoms and ions ($A^- + B$) can be reduced to the case ($A^- + A$) by renormalizing the parameters of the problem. The results are illustrated by the process $H^- + H \rightarrow H + H + e$ and are compared with the experiments and with other calculations.

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REEL/FRAME
19770101

tdh

21

USSR

UDC 669.71.472

DRUKAREV, V. A.

"Method of Determining Quantity and Composition of Gaseous, Resinous, and Solid Materials Separated in Gas Phase of Aluminum Electrolyzers [Discussion]"

Tr. Vses. N-i. Proyechn. In-ta. Alyumin., Magn. i Elektrokn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 71, pp. 149-156. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G158 by the author).

Translation: A method is developed for determination of the quantity of material separating from the surface of a Soderberg electrode and from beneath the crust on electrolyzers with Soderberg and roasted anodes. Metal gas collectors connected to polyethylene film gas holders were used. Considering the time of sample collection, the quantity of solid and resinous products is determined from their weight, the quantity of gas -- from the volume of the gas holder. Comparison of results produced by this method with results produced by other convenient methods produced a divergence of up to 5%. 5 figs.

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USSR

UDC 629.78.015:532.526

DRUKER, I. G. and TREYER, L. Ya.

"Calculation of a Hypersonic Boundary Layer With Injection of Liquid Coolant"

Minsk, Teplo- i Massoperenos (Heat and Mass Transfer), Vol 1, 1972, pp 167-170; (Referativnyy Zhurnal, Series 41, No 6, 1972, Abstract No 6.41.170)

Abstract: This paper is a study of the effect exerted on flow at the critical point by a distributed supply of a liquid coolant. Determined were 1) thickness of the liquid film as it depends on coolant discharge, 2) proportion of evaporated material, and 3) optimal (or extreme) discharges of coolant for which 100 percent of cooling liquid is evaporated, so that maximal utilization of latent heat of evaporation is achieved. Specific calculations are made for the vicinity of the critical point of a sphere around which partially dissociated oxygen is flowing. Water is taken as the coolant. Biblio. 4, illus. 2.

T. A. Ye.

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USSR

D UDC 621.373.421.13:621.372.412(088.8)

GRUZINENKO, V. B., BRUKNER, YU. M., YAROSLAVSKIY, M. I.

"Piezoelectric Resonator"

USSR Author's Certificate No 254578, Filed 3 Jul 68, Published 9 Mar 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D282P)

Translation: This author's certificate introduces a piezoelectric resonator executed in the form of an ET or FT-cut quartz element equipped with a system of electrodes connected to wire leads. In order to improve the suppression of first-harmonic oscillations when separating oscillations at the second harmonic frequency, the system of electrodes is formed by rectangular electrodes arranged symmetrically on two sides of the quartz element, and the wire leads of all the electrodes are located on the diagonals of these electrodes at a distance of 0.33-0.34 of the length of the diagonals from the vertexes of the central angles, and they are connected to the stationary base. There are four illustrations.

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1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DETONATION FAILURES DURING BLASTING -U
AUTHOR--(04)--DRUKOVANY, M.F., KOMIR, V.M., LITVIN, L.N., OBEREMOK, G.N.
COUNTRY OF INFO--USSR
SOURCE--GURN. Zh. 1970, 145(2), 56-9
DATE PUBLISHED-----70
SUBJECT AREAS--ORDNANCE
TOPIC TAGS--EXPLOSIVE, DETONATION, TRINITROTOLUENE, WATER, HEXOGEN, SHOT
BLASTING
CCNTRGL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/0434 STEP NO--UR/0127/70/145/002/0056/0059
CIRC ACCESSION NO--AP0129659
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129659

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SYSTEMATIC EXPTL. STUDIES WERE DONE TO CLARIFY CAUSES OF DETONATION FAILURES DURING BLASTING. TNT AND GRANULIT AS WERE USED AS EXPLOSIVES. EXPLOSIVE CHARGES WERE PLACED IN GLASS TUBES 3.5-4 M LONG AND OF 100-140 MM IN DIAM. FACTORS CONSIDERED INCLUDED: STICKING OF THE CHARGE; FORMATION OF VOIDS; CONTAMINATION OF THE CHARGE WITH WATER, DUST, GRANULES, AND PIECES OF URE; PRESENCE OF WATER IN THE BLASTING HOLE; ETC. DETONATION FAILURES ARE NOT LIKELY TO BE CAUSED BY VOIDS AND THE PRESENCE OF INERT CONTAMINANTS. THE PRESENCE OF H SUB2 O CAN CAUSE FAILURES IN THE CASE OF SUL. OR H SUB2 O REACTIVE EXPLOSIVES. UNSTABLE EXPLOSIVES CAN THEN FORM A KIND OF INERT BARRIER. TROTYL AND TROTYL HEXOGEN DETONATORS ARE EFFECTIVE AND RELIABLE EVEN IN LOW WTS. (13-200 G); THEY MUST BE USED IN SOMEWHAT LARGER AMTS. FOR INITIATION OF DETONATION OF H SUB2 O CONTAMINATED EXPLOSIVES. THE MOST FREQUENT FAILURES ARE DUE TO QUENCHING OF BURNING OF THE DETONATION CORD, WHICH HAPPENS WHEN THE CORE OF THE CORD IS MOIST. IT IS RECOMMENDED THAT THE MOISTURE INSULATION OF DETONATION CARDS BE INCREASED BY APPLYING AN EXTRA BITUMINOUS LAYER. FACILITY: INST. GEOTEKH. MEKH., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 621.762.002.5(088.8)

DRUSHININ, L. K., LIEPENA, YE. D., KUVSHINOV, P. S., SIMONOV, L. P., SAFRONOV,
~~B. V.~~, PERFILOV, L. S., and TOKAREVA, L. I.

"Apparatus for Making Powders and Granules by Centrifugal Pulverization of Melt"

Ussr Authors' Certificate No 272501, Cl. 31 b³, 9/00; 49 1, 3, [B 22 f 9/00,
B 05 b 3/12], filed 12 Sep 68, published 2 Sep 70 (from RZh-Metallurgiya,
No 3, Mar 71, Abstract No 3G470P by G. Derkacheva)

Translation: An apparatus is suggested for making powders and granules by centrifugal pulverization of a melt. The apparatus consists of a rotating ring with a hole in the bottom for delivery of the material to be pulverized, a local heat source situated above this material, and a cooler which is unique in that, in order to increase powder and granule quality, it is rigidly fastened to the outside of the ring.

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USSR

UDC 543.544

BARKETOV, E. S., KOPYLOVA, V. D., KARGMAN, V. B., DRUSIN, M. I.,
and SALDADZE, K. M., Scientific-Research Institute of Plastics,
Moscow, State Committee

"A Study of Anion-Exchange Resins with Complexing Properties"

Moscow, Zhurnal Analiticheskoy Khimii, Vol XXV, No 3, Mar 70,
pp 440-444

Abstract: In connection with obtaining new ion-exchange materials, researchers have devoted much attention to the synthesis of selective ionites which will absorb ions of one or several elements on a selective basis. These efforts have usually been complicated with various difficulties, including the necessity for multistage synthesis.

To overcome these difficulties, the authors studied the complexing properties of new anion-exchange resins based on copolymers of N-(β -(5-vinylpyridyl-2)ethyl)amines and N, N'-di(β -(5-vinylpyridyl-2)-ethyl-substituted diamines, in connection with bivalent copper, cobalt and nickel cations.

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USSR

BARKETOV, E. S., et al., Zhurnal Analiticheskoy Khimii, Vol XXV,
No 3, Mar 70, pp 440-444

It was found that the anion-exchange resins which contained ethylene-diamine groups had the strongest complexing capability. These have a comparatively high capacity for cations, which they sorb from very dilute solutions (less than $10^{-3}N$). In addition, macroporous resins of this type showed more intense sorption kinetics than those of gel structure.

USSR

UDC 661.143,546.34*161(088.8)

DRUSKINA, L. S., and SHAVER, I. KH.

"Luminophore for Thermoluminescent Dosimetry Based on Lithium Fluoride"

USSR Author's certificate No 361189, filed 8 Dec 70, published 15 Feb 73
(from RZh-Khimiya, No 19, Oct 73, Abstract No 19Li46 P)

Translation: Manganese is added to the luminescent composition based on LiF with addition of calcium, resulting in an increased sensitivity of the composition towards ionizing radiation which gives a thermoluminescence curve with 1-2 maxima and increases the stability of the dosimetric information. Calcium and manganese are added as fluorides in quantities of 0.5-3 and 0.015-0.3 weight-% respectively.

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USSR

UDC 632.95.024.1

DELIY, E. G., KHOKHRYAKOVA, V. S., SHUSTOVA, V. P., and AKISHINA, L. F., All-Union Scientific Research Institute of Chemical Means for Plant Protection

"Effect of Organochlorine Insecticides on Azotobacter"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 7, 1971, pp 42-44

Abstract: DDT or hexachlorane applied for the treatment of the soil of wheat and cotton fields had no effect on the azotobacter in the soil. Application of hexachlorobutadiene (I) in amounts of 75-700 g/m² to the loamy chernozem soil of vineyards in Moldavia for the control of phylloxera inhibited the development of azotobacter in the soil, as shown by tests carried out 18 mos. after the spraying of I. Laboratory experiments with soil that had been inoculated with a culture of Azotobacter chroococcum showed that I applied to the soil in amounts of 15-60 g/m² did not have a harmful effect on the development of the microorganism. Soil of the chernozem and sod-podzol types treated with I in amounts of 5-500 mg/kg was not toxic to azotobacter (the amount of I present in the soil under practical conditions does not exceed 150-500 mg/kg). It had been established by Khokhryakova, et al (Khimiya v Sel'skom Khozyaystve, No 5, 1966) that I in amounts >50 g/m² has a toxic effect on grapevines. One

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USSR

DRUY, E. G., et al., Khiriya v Sel'skom Khozyaystve, Vol 9, No 7, 1971, pp 42-44

must assume that substances evolved by the roots of grapevines subjected to the action of I had an inhibiting effect on the azotobacter, because I acting on azotobacter directly or on the soil in the concentrations that were present could have had no effect on the microorganism, on the basis of the results obtained in the study. G. N. Deniskina participated in the work reported.

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USSR

UDC: 53.08+389.1:613

TRESKUNOV, A.A. POZHAROV, A.V., DRUYAN, V.I. and
PROSKURNINA, N.N.

"Problems of Metrological Provision of Instruments for Biological
Aerosol Analysis"

Sb. Fiz. metody i vopr. metrol. biomed. izmereniy (Symposium on
Physics Methods and Biomedical Metrology Problems) Moscow, 1972,
pp 275-276 (from Referativnyy Zhurnal-Metrologiya i Izmeritel'naya
Tekhnika, No 8, 1972, Abstract No 8.32.1010 by V.S.K.)

Translation: Problems are considered of metrological provision of a
class of analytical instruments for detection and concentration measure-
ment of biological matters in air. Possibility of creating a dustmeter
for estimating the protein concentration in air is analysed. The study of
these problems showed the absence of methods and means for calibration,
inspection and certification of this class dustmeter. In order to graduate

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USSR

TRESKUNOV, A. A., et al., Sb. Fiz. metody i vopr. metrol. biomed. izmereniy, 1972, pp 275-276

the dustmeter dial it is necessary to develop methods of concentration measurement for pure protein aerosol mixtures and also of obtaining certification mixtures. At LF VNIIMP an aerosol biological indicator has been developed, whose operation is based on photometering specimens with precipitated solid phase of aerosol in two adjoining intervals of IK-spectrum region, one of which is selected by the wave length common to most proteins. The investigations having been conducted showed that to facilitate solution of metrological problems it is expedient to conduct itemized error estimation of IK-spectrophotometer (air sampler, optical and electronic systems).

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DRUYANOV, V.

Remick Russ

Wednesday, March 22, 1972

201HUGS/R

A fundamentally new plasmatron which can generate plasma at a distance has been designed by Soviet scientists

LIGHT GIVES BIRTH TO PLASMA

V. Druyanov and R. Grigoriev, Engineers

Three types of plasma generators (plasmotrons) are known today. Each of them has its merits and demerits. For example, an electric arc produces a plasma contaminated with electrode disintegration products. Other types of plasmatrons are free from this shortcoming but they call for a complicated equipment for energy supply. However, plasma can be engendered only inside such apparatus.

A fundamentally new installation which can generate plasma at a distance has been designed by Moscow scientists--staff members of the Problems of Mechanics Institute of the USSR Academy of Sciences--Yu. P. Reiser, Lenin Prize winner, experimental physicist G. I. Kozlov, N. A. Generalov, V. P. Zimakov, V. A. Maslov, A. Z. Abaliev.

The new optical device uses for the continuous supply of energy to plasma a laser beam so that no conductors are necessary. In principle, it is possible to light up and evaporate such an "optically discharge" in any place, say, in the middle of a room, or in the street. Plasma can be moved by displacing the ray of light; "ornaments" can be described with it. It can even be made to run along the beam to meet a light wave.

At first, a continuously burning optical discharge was obtained with the aid of a small 150-watt laser. The discharge burned in a xenon-filled vessel at pressures of a few atmospheres. Plasma was kindled by another laser which produced short powerful pulses that created sparks in gas. The sparks served as a kind of matches, as it were.

At the moment, in the laboratory of the Institute, a continuous optical discharge is burning in dry gases, including the air. And in many gases, even at an atmospheric pressure. An optical plasmatron can operate without intermission for hours. The temperature reaches 20,000 degrees. Plasma gives off a dazzling white light.

It was recently kindled in a plain glass flask through which argon was allowed to flow slowly. When a worker broke off a piece of glass from the glass sphere by accident, the hole was covered up with a sheet of paper, but the discharge continued its steady burning.

The optical plasmatron will find diverse applications in science and technology. Already, it can be used as a continuous light source of exceptional brightness.

(Vozharyaya Moskva, March 9. Abridged.)

Radiobiology

USSR

UDC 577.15.016

DROZHENNIKOV, V. A., GUBERNIYEV, M. A., RYBAKOV, N. I., RYZHOV, N. I., and MASHINSKAYA, T. Ye., Scientific Research Laboratory of Experimental Immunobiology, Academy of Medical Sciences USSR

"Effect of Ultraviolet and Ionizing Radiation on E. coli K12 (λ) Nuclease Activity"

Moscow, Biokhimiya, No 5, 1971, pp 883-888

Abstract: The intensity of activity of endonuclease I, exonuclease III, and phage-specific exonuclease of E. coli K12 (λ) was studied after exposure to different doses of ultraviolet radiation and high-energy protons. The activity of the first two enzymes was not affected by ultraviolet radiation or high-energy protons at doses causing maximum induction of vegetative phage. The absence of an effect is attributed to the fact that these agents, unlike a chemical mutagen, such as mitomycin C, do not result in degradation of the ribosomes of the bacterial cell. The activity of exonuclease specific for phage λ was related to the degree of induction of vegetative phage, reaching a peak at the time of lysis of irradiated cells. Exonuclease activity at this time was much lower after the use of high-energy protons than after ultraviolet radiation. Analysis of the concentration of intracellular DNA
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USSR

DROZHENNIKOV, V. A., et al., Biokhimiya, No 5, 1971, pp 883-888

and total protein in material not incubated after exposure to the inducing agents showed no change in these indexes.

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USSR

UDC 591.1.15


DRUZHINA, N. A.

"Oxygen Consumption by Animals in the Dynamics of Fast-Neutron-Induced Radiation Sickness"

V sb. Biofizika i radiobiol. (Biophysics and Radiobiology -- Collection of Works), Vyp. 3, Kiev, "Nauk. dumka," 1972, pp 67-73 (from RZh-biologicheskaya Khimiya, No 10, 25 May 1972, Abstract No 10F1408 from summary)

Translation: A study was made of oxygen consumption by rats and oxygen pressure (pO_2) in brain tissues during early periods of radiation sickness induced by fast neutrons (100, 215 and 300 rads). These indicators declined notably before the animals' death.

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1/2 050 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EMISSION PROPERTIES OF DISTRIBUTING THERMIONIC CATHODES WITH
SPUTTERED METAL FILMS -U-
AUTHOR-(02)-NEKRASOV, V.I., DRUZHININ, A.V. 
COUNTRY OF INFO--USSR
SOURCE--RADIOTEKH. ELEKTRON. 1970, 15(2), 411-13
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--REFRACTORY METAL, METAL COATING, CATHODE SPUTTERING, OSMIUM,
IRIDIUM, PLATINUM, TANTALUM, RUTHENIUM, RHENIUM, THERMIONIC EMISSION,
WORK FUNCTION, TUNGSTEN, ALUMINUM OXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/1283 STEP NO--UR/0109/70/015/002/0411/0413
CIRC ACCESSION NO--AP0055954
UNCLASSIFIED

2/2 050

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0055954

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE EFFECT WAS DETD. OF COATINGS OF REFRACTORY METALS (OS, IR, PT, TA, RU, AND RE) 0.3-1 MU THICK ON THE EMISSION FROM CATHODES PREPD. BY THE STANDARD TECHNOLOGY FROM 3BA0.0.5CA0.-AL SUB2 0 SUB3 AND W. THE CATHODES WITH THE OS COATING HAVE THE LOWEST WORK FUNCTION. OF THE REMAINING METALS ONLY IR DECREASES THE WORK FUNCTION. THE REMAINING METALS INCREASE THE WORK FUNCTION OF THE CATHODE AND IMPAIR THE EMISSION PROPERTIES. THE TEMP. DEPENDENCE WAS DETD. FOR THE WORK FUNCTION AND THE EMISSION CURRENT FOR CATHODES WITH AN OS COATING AND WITHOUT ANY COATING. THE COATED CATHODES AT 1000-1400DEGREES HAVE A WORK FUNCTION 0.15-0.2 EV LESS THAN THE UNCOATED CATHODE AND 6-8 FOLD INCREASE IN THE EMISSION C.D. THE EMISSION PROPERTIES OF THE COATED CATHODES ARE RETAINED FOR AT LEAST 3000 HR AT 1420-50DEGREEK.

UNCLASSIFIED

USSR

UDC: 621.373.431.1

DRUZHININ, A. Ya.

"Semiconductor Thermomultivibrators"

V sb. poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Technical Electrical Communications--collection of works), Moscow, "Svyaz'", 1970, pp 171-182 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G224)

Translation: The author considers the general principle of design of semiconductor multivibrators with temperature-dependent time-mark elements (thermomultivibrators). Expressions are derived which relate the durations of the shaped pulses to the temperature of the heat-dependent elements and to the ambient temperature, and also for the conditions of existence of oscillations. Methods are considered for improving the temperature stability of the period of the oscillations. Thermomultivibrators are classified according to basic characteristics, and modifications are given on the design of simple and bridge thermomultivibrators based on indirectly heated temperature-dependent elements. Bibliography of 11 titles. Resumé.

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Acc. Nr.

AP0055929

Abstracting Service:
CHEMICAL ABST.

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6-70

Ref. Code

UR0078

115285a $\text{Co}(\text{NO}_3)_2 \cdot \text{CH}_3\text{CONH}_2 \cdot \text{H}_2\text{O}$ and $\text{Ni}(\text{NO}_3)_2 \cdot \text{CH}_3\text{CO}-$
 $\text{NH}_2 \cdot \text{H}_2\text{O}$ systems. Dzhunusov, A. D.; Imanakunov, B. I.;
Kydyrov, M. K.; Druzhinin, I. G.; Karnaukhov, A. S.
(USSR). *Zh. Neorg. Khim.* 1970, 15(2), 532-8 (Russ). Hetero-
geneous equil. were studied in the title systems at 25° and soly.
diagrams of the systems are constructed. Four new compds. sep.
in the systems: $\text{Co}(\text{NO}_3)_2 \cdot 4\text{AcNH}_2 \cdot 2\text{H}_2\text{O}$, $\text{Co}(\text{NO}_3)_2 \cdot 6\text{AcNH}_2 \cdot 2-$
 H_2O and analogous Ni compds. Thermographs, x-ray powder
diffraction patterns, and ir absorption frequencies of these
compds. are given.

HMJR

C.K.

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REEL/FRA
19841258

1/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--NEW ISOMORPHIC PHASES FROM MAGNESIUM, NICKEL, AND ZINC ASTRAKANITES
(M PRIME II SO SUB4 NA SUB2 SO SUB4 AND 4H SUB2 O) -U-
AUTHOR--(02)-DRUZHININ, I.G., TEMBOTOV, B.K.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(2) 525-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--AQUEOUS SOLUTION, SOLID SOLUTION, DISTRIBUTION COEFFICIENT,
NICKEL COMPOUND, SODIUM COMPOUND, CRYSTAL HYDRATE, SOLUBILITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/0936 STEP NO--UR/0078/70/015/002/0525/0527
CIRC ACCESSION NO--AP0053860
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--A00053860
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF MG ASTRAKANITE,
MGSO SUB4.NA SUB2 SO SUB4 AND 4H SUB2 O (I), WITH ITS NI AND ZN ANALOGS
WAS STUDIED IN AQ. SOLNS. AT 30DEGREES. CONTINUOUS SOLID SOLNS. FORM IN
THE SYSTEMS MGSO SUB4.NA SUB2 SO SUB4-I-H SUB2 O (M EQUALS NI, ZN); SOLY.
DIAGRAMS OF THESE SYSTEMS ARE CONSTRUCTED (30DEGREES). DISTRIBUTION
COEFFS. OF THE COMPONENTS BETWEEN THE SOLID AND LIQ. PHASES ARE GIVEN.

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UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--QUATERNARY SYSTEM OF COBALT, AMMONIUM, AND POTASSIUM SULFATES AND
WATER AT 25, 50, AND 75 DEGREES -U-
AUTHOR--(03)-BORBIYEVA, D., IMANAKUNOV, B., DRUZHININ, I.G.
COUNTRY OF INFO--USSR
SOURCE--IAV. AKAD. NAUK KIRG. SSSR 1969, (3), 64-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--AQUEOUS SOLUTION, MULTICOMPONENT SYSTEM, PHASE DIAGRAM,
SOLUBILITY, SOLID SOLUTION, CRYSTALLIZATION, AMMONIUM SULFATE, SULFATE,
POTASSIUM COMPOUND, COBALT COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/0767 STEP NO--UR/0560/69/000/003/0064/0068
CIRC ACCESSION NO--AP0104213
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NU--AP0104213

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE QUATERNARY SYSTEM CaSO_4 SUB4 MINUS (NH SUB4) SUB2 SO SUB4 MINUS K SUB2 SO SUB4 MINUS H SUB2 O WAS STUDIED BY THE ISOTHERMAL SOLY. METHOD. SEVEN CRYSTN. FIELDS OF THE SALTS WERE DETD.: THOSE OF THE INITIAL COMPONENTS, CaSO_4 .7H SUB2 O (25DEGREES), CaSO_4 .6H SUB2 O (50DEGREES), CaSO_4 .H SUB2 O (75DEGREES), K SUB2 SO SUB4, AND (NH SUB4) SUB2 SO SUB4; THOSE OF BINARY COMPS., CaSO_4 .K SUB2 SO SUB4 .6H SUB2 O AND CaSO_4 .(NH SUB4) SUB2 SO SUB4 .6H SUB2 O; THAT OF THE BINARY SOLID SOLN. BETWEEN K SUB2 SO SUB4 AND (NH SUB4) SUB2 SO SUB4; AND THAT OF THE COMPD. KCaSO_4 SUB4 .L(NH SUB4) SUB2 SO SUB4 .MK SUB2 SO SUB4 .NH SUB2 O. THE EFFECT OF TEMP. ON THE SOLY. OF THE SALTS, BINARY COMPS., AND SOLID SOLNS. WAS DETD., AND THE DEPENDENCE OF THE AREA OF THE CRYSTN. FIELDS ON THE SOLYS. ARE PRESENTED. THE SOLYS. OF THE INITIAL COMPS. AND OF THE BINARY SOLID SOLN. DECREASE WITH INCREASING TEMP. WHILE THAT OF THE BINARY COMPS. INCREASES. THE SYNTHESIS OF COMPLEX SOLID SOLNS. OF CO, K, AND AMMONIUM SULFATES IN BEST AT LOW TEMPS.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EQUILIBRIUM BETWEEN ZINC NITRATE AND UREA IN AN AQUEOUS MEDIUM AT
25DEGREES -U-
AUTHOR--(02)-YEREMEYEVA, N.YE., DRUZHININ, I.G. D
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1094-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ZINC COMPOUND, NITRATE, UREA, CHEMICAL EQUILIBRIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1113 STEP NO--UR/0078/70/015/004/1094/1096
CIRC ACCESSION NO--AP0123105
UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0123105
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY. ISOTHERM (25DEGREES) OF
ZN(NO SUB3) SUB2 UREA H SUB2 O SYSTEM IS PRESENTED. THE SYSTEM FORMS A
NEW BINARY COMPD. ZN(NO SUB3) SUB2.4 UREA HAVING D. 1.7838 G-CM PRIME3,
MDL. VOL. 241.27 CM PRIME3-MOLE, AND SP. VOL. 0.56159 CM PRIME3-G.
FACILITY: MOSK. GBL. PEDAGOG. INST. IM. KRUPSKOI, MOSCOW, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--AQUEOUS SYSTEMS OF SODIUM L GLUTAMATE, IRON II CHLORIDE, AND
MANGANESE CHLORIDE -U-
AUTHOR-(04)-UMETALIYEVA, S.K., BAKASOVA, Z.B., POTEKMO, L.I., DRUZHININ,
~~1.0.~~ ^D
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 801-5
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--REFRACTIVE INDEX, ORGANOSODIUM COMPOUND, IRON COMPOUND,
MANGANESE COMPOUND, CHLORIDE, SOLUBILITY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/1147 STEP NO--UR/0078/70/015/003/0801/0805
CIRC ACCESSION NO--AP0136567
UNCLASSIFIED

2/2 015
CIRC ACCESSION NO--AP0136567

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF NA L GLUTAMATE (I) WITH FECL SUB2 AND MNCL SUB2 GIVES FE AND MN L GLUTAMATES (II AND III, RESP.). II AND III ARE INCONGRUENTLY SOL. IN WATER, THEIR SOLY. IS HIGHER THAN THAT OF THE PARENT ACID. REFRACTIVE INDEXES, N SUBALPHA AND N SUBALPHA, OF II ARE 1.99 AND 1.960 AND OF III ARE 1.980 AND 1.953, RESP. SOLY. ISOTHERMS OF I-FECL SUB2-H SUB2 O AND I-MNCL SUB2-H SUB2 O AT 25DEGREES ARE CONSTRUCTED. COMPNS. OF EQUIL. SOLNS. OF THE SYSTEMS ARE TABULATED.

UNCLASSIFIED

DRUZHININ, I. I.

UDC 669.293'286'784.017.13+669.293'293'784.017.13
PHASE EQUILIBRIA IN THE NIOBIUM CORNER OF THE Nb-Zr-C AND Nb-Ti-C SYSTEMS
Article by I.I. Druzhinin, A.H. Zakharev, I.I. Ryvkov, Moscow Steel and Alloy Institute, Department of Physical Metallurgy of Nonferrous, Rare and Radiocative Metals; Moscow, Izvashlya Vysishikh Veshnykh Zavedeniy, Tsvetnaya Metallurgiya, Russian, No 1, 1972, submitted 2 April 1971, pp 118-120

The ternary systems, Nb-Zr-C and Nb-Ti-C, were investigated in reference [1-5]. The methods of microstructural analysis and x-ray micrography of annealed alloys were used to construct the isothermal sections of the Nb-Zr-C system at 1,700° and the Nb-Ti-C system at 1,500° [1] and 1,600° [2]. In reference [3] using the same methods on sintered alloys, as a result of constructing the isothermal section at 2,000° and the polythermal section, the authors confirmed the existence of the previously established phase domains and demonstrated that the polythermal section of Nb-Zr-C is not quasibinary. In reference [4] a study was made of the isothermal sections at 2,500 and 1,500 degrees, and the schematic of a three-dimensional diagram of state of Nb-Zr-C was constructed. In reference [1-4], a study was made of alloys with a high carbon and zirconium (or titanium) content. The position of the phase boundaries in the niobium corner was determined by extrapolation from the domains with high concentration of the alloy elements. In reference [5] a study was made of the isothermal section of the niobium corner of the Nb-Zr-C system at 1,300°. The alloys for the investigation were annealed in advance and cooled slowly. Then they were again heated at 1,300° for three hours and quenched by blowing with argon. According to the results of reference [5], it must be concluded that heating at 1,200-1,300° for three hours, as our paper has shown, does not permit conversion of the excess phase precipitated out of solution during slow cooling into a solution and that the alloys investigated for the construction of the isothermal section at 1,300° had Widmanstätten structure (Figure 6b-d in reference [5]) which is formed as a result of insufficiently rapid cooling during quenching. These alloys must be considered single-phase at the homogenization temperature.

In this paper, a study was made of the ternary system of Nb-Zr-C within the limits of 0.028-1.97% C and 0.56-18.5% Zr.

The alloys were prepared in an electric arc furnace with a tungsten electrode on a copper water-cooled tray in an atmosphere of purified helium. The burden materials were niobium of a cathode-ray melt (0.01% C, 0.007% N,

TPRS 05-943
9 May 72

DRUZHININ, I. I.

SOLUBILITY OF CARBON IN NIOBIUM

Article by I. I. Druzhinin, A. M. Zakharyov, I. I. Novikov, Moscow Steel and Alloys Institute, Department of Physical Metallurgy of Tsvetmet, Nure and Radioactive Metals; Ordzhonikidze, Izvestiya Vsesoyuznogo Nauchno-Issledovatskogo Instituta Tsvetmet, Russian, No 5, 1971, submitted 19 November 1970, pp 136-139

TRANS 55870
 11/11/71
 LDC 669.293:541.8:669.784

The diagram of state of Nb-NbC was first constructed in reference [1]. It was later investigated and more precisely defined in reference [2-7]. A eutectic is formed between niobium and carbide Nb₃C, the melting point of which and the position of the line of limited solubility of carbon in niobium differ according to the data of different authors (see the table).

In this paper, alloys containing up to 1.84 percent by weight C were prepared in an arc furnace with a tungsten electrode on a copper water-cooled sole in an atmosphere of purified helium. The burden materials were niobium from cathode-ray melting (0.01 percent C, 0.007 percent N, < 0.01 percent O, 0.001 percent H) and carbide NbC. The cast alloys (specimens 4 x 4 x 7 mm), were 40-70 percent upset in a vacuum device [8] at 1,600 degrees. The deformed test pieces were annealed in a TVV-2A furnace (1.10⁻⁵-5.10⁻⁶ mm Hg) in a niobium basket in stages: 2,100 degrees for 27 hours, 1,600 degrees for 10 hours, 1,800 degrees for 40 hours, 1,600 degrees for 25 hours, 1,200 degrees for 150 hours. The temperature of the test pieces was controlled by the VMS-VE23 thermocouple. For quenching, the test pieces 2 x 3 x 6 mm were placed between two tungsten electrodes, heated in a vacuum (1.10⁻⁴ mm Hg) by direct passage of current to temperatures of 2,100, 2,050, 1,800 and 1,600 degrees for 1 hour and quenched, shutting off the current. The 1 hour holding was sufficient for conversion of the excess phases to the solid solution form which were separated with slow cooling of the test pieces in the TVV-2A furnace. The individual two-phase test pieces were held at the quenching temperature for two and four hours, but their microstructure did not change on increasing the holding time.

The heating temperature of the test pieces for quenching was controlled by an optical pyrometer which was graduated with respect to brightness of the niobium surface heated to the corresponding temperature. The mean cooling