

USSR

UDC 669.111.35:669.017.3

PIGROVA, G. D., and LEVIN, Ye. Ye., Central Boiler and Turbine Institute imeni
I. I. Polzunov

"Carbide Phases in Heat-Resistant Nickel-Base Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 6, Jun 72, pp 1297-
1301

Abstract: A study was made of the character of carbide transformations in long-term aging in the 700-1000°C temperature range in some widely used heat-resistant nickel-base alloys. The dependence of the quantity of carbides on the aging temperature, the carbon content in the alloy, and the type of the forming carbide were investigated. The type of carbide phase is shown to be defined only by the relation of the elements of the sixth group and not by their quantity. The composition, type, and quantity of carbides can be calculated beforehand. In long-term aging, in alloys with less than 0.1% C, the principal carbides are the $M_{23}C_6$ and M_6C types. An earlier assumption (Sims, C.T., J. Metals, 1966, No 18, p 1119), that one-half of the C atoms are bound in the M_6C carbide and the other half in $M_{23}C_6$ or M_6C , seems generally to be erroneous; it is correct only in certain individual cases. Three figures, two tables, six bibliographic references.

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USSR

UDC 669.13-15:620.178.3

DRAPKIN, B. M., ZHUKOV, A. A., and FIGUZOV, YU. V., Rybinsk Evening Technological Institute

"Laws Governing Change in the Elastic Properties of Pig Iron During Heat-Fatigue Fracture"

Moscow, Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 135-137

Abstract: The authors have studied change in the elastic properties of pig irons with different structures in the process of heat-fatigue fracture. They showed that in all cases the moment of the appearance of the first cracks is represented by the value of the Young modulus which comprises 70-75% of the initial value.

The authors make the following conclusions with respect to their research. The initial period of heat-fatigue fracture of pig iron is characterized by the processes of defect pile-up of the crystal structure in the metal matrix

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DRAPKIN, B. M., et al., Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 135-137

of the pig iron, the processes taking place more intensely in pig iron with a ferrite matrix. They established that during heat cycling of pig iron the appearance of cracks is accompanied by a sharp drop in the elastic properties, in which case the modulus of elasticity E comprises 0.7-0.75 of the initial value. They state that it is necessary to make future investigations on the behavior of various materials under conditions of heat-cycle loading in order to expand these laws to other metals and alloys.

As illustration the authors have compiled a table which shows the chemical composition and characteristics of the pig iron. A graph gives the change of the tested pig irons with respect to the Young modulus in the process of heat cycling.

The article contains 1 illustration, 1 table, and 7 bibliographic references.

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USSR

UDC 539.67

SHTRAKHMAN, K. M., FIGUZOV, Yu. V., and LOGVINENKO, Yu. S.

"Internal Friction and Isothermic Diffusion in a Copper-Zinc System"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 165-169

Abstract: With increasing time of diffusion isothermic annealing of copper (from 19 to 100 hours), peaks appear on the internal friction temperature dependence curves at 260, 290, and 330°C. The appearance of peaks is related to the relaxation process in δ - and ξ -phases formed with isothermic diffusion, as well as in the α -solid solution. 3 figures, 4 references.

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USSR

UDC 539.67

MOROZOV, O. G., and PIGUZOV, Yu. V.

"The Effect of KhN77TYuR Alloy Structure on Internal Friction"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 134-137

Abstract: The effect of structural conditions of the KhN77TYuR alloy on internal friction at low and kHz measurement frequencies is studied.

Structural conditions obtained by standard and special regimes and also by cold rolling before aging are characterized mainly by boundary structure or by intra-grain structure.

Such deliberately selected structures, in the study of their effect on internal friction, make it possible to express a supposition on the relative contributions of the intra-grain structure and boundaries of complex alloys to the rise of high-temperature internal friction background at low and kHz measurement frequencies. 4 figures, 4 references.

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USSR:

UDC 539.67

VERNER, V. D., PIGUZOV, Yu. V., and RZHEVSKAYA, I. Ya.

"Relaxation Spectrum of Molybdenum. Governed by Incorporation Impurities"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka", 1970, pp 61-65

Abstract: Results of an investigation are presented which make it possible to explain the complex relaxation spectrum in molybdenum with a substantial content of impurities.

A graphic resolution of a complex 220-degree peak, obtained in molybdenum with oxygen, nitrogen, and carbon additions, is presented.

The shape of the oxygen and carbon solubility lines in a solid molybdenum-based solution is refined and the true diffusion coefficients of these elements are determined. 2 tables, 5 figures, 3 references.

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Acc. Nr: AP0046635

Abstracting Service: *P*
CHEMICAL ABST. *4/70*

Ref. Code:
UR 0131

81820d Increased stability of mold plates. Dimova, D. Kh.; Piguzov, Yu. A. (Mosk. Inst. Stali Splayov, Moscow, USSR). Zhurnal Prikladnoi Metallovedeniya 1970, 35(1), 16-19 (Russ). The efficiency of the utilization of presses in the production of refractory products depends to a large extent on the life of press mold plates. The zone of the max. wear occurs at a definite distance (in this particular case 0.8 mm) from the upper surface of the plate. The effect of quenching temp. on the wear-resistance of plates and ratio of martensite/austenite in the steel structure were studied. After heat treatment of plates by carburizing at 1080° followed by quenching with a repeated heating at 820° and tempering at 150°, the max. amt. of martensite and a large amt. of carbides were obtained in the surface layer of the plate. The austenite content is slight. On the contrary, the plates carburized at 1080° and quenched from this temp. have, in the surface layer, mostly austenite (~60%) in the mass of which large needles of martensite are observable. The potential wear resistance of plates with the martensitic structure of steel is higher than that with austenitic. To explain the premature failure of plates with martensite structure the profile of wear of plates was analyzed. The profile of plates with martensite structure is characterized by

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REEL/FRA
19781947

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less wear of the upper part of a plate in comparison with the part of the plate corresponding to the pressing zone. The premature failure of plates of martensite structure is caused by the cracking of the products during pressing. The plates, the upper part of which were tempered, are softer which makes it possible to prevent the breaking of products during their expulsion from the mold.

J. Jindra

87

2/2

19781948

1/2 016 UNCLASSIFIED
TITLE--ZEOLITE CONTAINING METAL CATIONS -U-

PROCESSING DATE--04DEC70

AUTHOR--(05)-KARZHEV, V.I., PIGUZOVA, L.I., GONCHAROVA, N.V., SVIRINA,
V.P., KRIVOZUBOVA, N.V. *P*
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,078
REFERENCE--OTKRYTIYA, IZOBREET., PROM. OBRAZTSY, TOVARNYE ZNAKI, 1970 47
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ZEOLITE, METAL ION, LANTHANUM COMPOUND, CHEMICAL PATENT,
THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/0860

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

CIRC ACCESSION NO--AA0136294

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136294

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZEOLITE, CONTG. CATIONS OF GROUP VI AND VIII METALS AND LANTHANIDES INTRODUCED IN THE REACTION OF CATION EXCHANGE, IS PREPD. BY MULTIPLE SATN. OF SOLNS. OF SALTS OF THE CORRESPONDING METALS. AFTER EACH SATN., THE ZEOLITE IS THERMALLY TREATED AT 140-550DEGREES. THIS ZEOLITE HAS A HIGH DEGREE OF NA CATION SUBSTITUTION.

UNCLASSIFIED

Circuit Theory

USSR

UDC: 621.372.852.3

TUMASOV, V. R., PIKALOV, A. P.

"An Approximate Method of Calculating the Equivalent Circuit of Type S2-20 Resistors"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 2 (19), pp 83-88 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1B183)

Translation: The authors present the equivalent circuit of an S2-20 resistor in the form of a Π -shaped attenuator with discrete elements. The wave impedance of the line is calculated. Six illustrations, one table, bibliography of ten titles. Resumé.

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Public Health, Hygiene and Sanitation

UDC (063)581.524.4:631.849

USSR

KOLESNIKOV, B. P. and PIKALOVA, G. M., Ural State University, Sverdlovsk

"Vegetation and Industrial Pollution: A Scientific-Coordinating Conference
Held in Sverdlovsk 26 to 28 November 1969"

Moscow, Botanicheskiy Zhurnal, No 6, 1971, pp 903-907

Abstract: One of the most effective methods of neutralizing the injurious consequences of industrial pollution is the use of phytomelioration, i.e., the creation of artificial plant communities with plant species and forms physiologically resistant to toxic gases and waste products of industry and mining enterprises. Ural biologists have been working since the mid-1950's on the problems involved in creating "green filters" using dust- and gas-resistant plants. Ural University in cooperation with many scientific research organizations and industrial plants organized in 1962 the first of a series of biennial conferences to summarize and coordinate research in the field. At the fourth such conference held in Sverdlovsk in November 1969, 56 reports and communications were presented under two main headings: "Phytomelioration and Mining Recultivation of Industrial Tailings" and "Effect of Industrial Emissions on Plant Physiology." The proceedings were published in Referaty dokladov i

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USSR

KOLESNIKOV, B. P. and PIKALOVA, G. M., Botanicheskiy Zhurnal, No 6, 1971,
pp 903-907

soobshcheniy IV Ural'skogo nauchno-koordinatsionnogo soveshchaniya po
probleme "Rastitel'nost' i promyshlennyye zagryazneniya" (Abstracts of Reports
and Communications Read at the Fourth Ural Scientific-Coordinating Conference
on Vegetation and Industrial Pollution), Sverdlovsk, 1969, 185 pp.

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PIKAND, L. I.

TECHNICAL TRANSLATION

FSTC-ET-23- 1281-71

ENGLISH TITLE: PRODUCTION TESTING OF THE DNR-DZ LIGHT DISTANCE MEASURING DEVICE

FOREIGN TITLE: PROIZVODSTVENNOYE ISPYTANIYE SVETODAL'NOYERNOY RASADKI DNR-DZ

AUTHOR: L. I. Pikand and Y. A. Nikanorov

SOURCE: GEODEZIYA I KARTOGRAFIYA, No. 6, 1970, pp. 17-20

Translated for FSTC by Leo Kanner Associates, Redwood City, California

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UDC 541/.545

USSR

PIKAYEV, A. K., Institute of Physical Chemistry, Academy of Sciences USSR,
Moscow

"Chemical Methods of Pulsed Electron Radiation Dosimetry"

Moscow, Uspekhi Khimii, Vol 41, No 9, Sep 72, pp 1696-1712

Abstract: The article is a survey of existing chemical methods of pulsed electron radiation dosimetry, discussing the results of work in this field as of the middle of 1971. Pulse electron radiation sources are described (linear accelerators and pulse accelerators of the "Febetron" type) and peculiarities of dosimetry at high absorbed dose rates (up to 10^{14} rads/sec) are examined. There is a detailed discussion of the effect of the dose rate on radiolysis product yields in various dosimetric systems (ferrous-sulfate dosimetric system, other aqueous dosimetric systems, the use of the hydrated electron formation process for dosimetry, dosimeters based on polymers systems, gaseous dosimetric systems, thermoluminescence lithium-fluoride dosimeter, calorimetric dosimetry method). A table is given listing dosimetric systems which are suitable for determining the dose in various dose rate ranges. The most universal dosimetric system is liquid benzene. In the

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PIKAYEV, A. K., Uspekhi Khimii, Vol 41, No 9, Sep 72, pp 1696-1712

case of aqueous solutions, the range of dose rates in which the yield does not depend on the dose rate is usually wider, the higher the concentration of the dissolved substance. The most suitable gaseous system is nitrous oxide.

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PIKAYEV, A. K.

INTERNATIONAL SYMPOSIUM ON PULSE RADIOLYSIS

[Article by Doctor of Chemical Sciences A. K. Pikayev; Moscow, Vestnik Akademii Nauk SSSR, Russian, No 3, March 1972, pp 90-91]

The symposium was held on 25-27 October 1971 at the Whiteshoals nuclear center in Pinawa (Canada). The symposium was organized by the Canadian Chemical Institute and Atomic Energy Commission of Canada. About 100 scientists from England, Italy, Canada, USSR, France, West Germany, and Japan took part in its proceedings.

The following subjects were discussed at the symposium: capture of charges in radiolysis, experimental procedure of pulse radiolysis, solvated electrons (e_s^-) in radiation chemistry, excited states, pulse radiolysis of biologically important systems and pulse radiolysis of gases. Plenary lectures on each of these problems were read respectively by G. Freeman (Canada), C. Alenthal (U.S.), J. Hunt (Canada), J. Thomas (U.S.), L. Grossweiner (U.S.) and A. Boyd (Canada).

Noteworthy on the problems of charge capture in radiolysis are the reports of H. Hillis, et al (Canada) and L. Kavan (U.S.) in the former are presented data on optical absorption spectra of e_s^- in liquid hydrocarbons (propane, propylene, 3-methylhexane) at low temperatures. In these them vanish as a result of pair neutralization (the extinction half-period at -180°C is $\sim 10^{-9}$ sec). The initial yields of e_s^- are ~ 1 . In the latter report the mechanism of electron capture by alcohol "glass" at 77°K was established. It was established that the optical spectrum of a captured electron after the passage of a pulse through the system is shifted somewhat towards shorter wavelengths. It is concluded on this basis that near instantaneous recombination of electrons with the medium or their redistribution among traps plays an important part in the mechanism of capture.

Described in reports on the experimental procedure of pulse radiolysis are various methods of recording short-lived particles that occur during irradiation, cell designs, optical systems, etc. J. Hunt

JPRS 55889
4 May 72

1/2 022

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--THE DETECTION OF HYPERFINE STRUCTURE IN THE EPR SPECTRUM OF A TRAPPED ELECTRON IN GAMMA IRRADIATED ALKALINE GLASSY ICE AT 77DEGREE SK

AUTHOR--(021)-ERSHOV, B.G., PIKAEV, A.K.

P

COUNTRY OF INFO--USSR

SOURCE--RADIAT. EFF.; 2: 135-6, JAN 1970

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--EPR SPECTRUM, HYPERFINE STRUCTURE, LINE SPLITTING, ELECTRON TRAPPING, GAMMA IRRADIATION, GLASS PROPERTY.

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1461

STEP NO--UR/0000/70/002/000/0135/0136

CIRC ACCESSION NO--AP0101547

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 022
CIRC ACCESSION NO--AP0101547
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A TRIPLET WAS FOUND IN THE EPR SPECTRUM OF GAMMA IRRADIATED 10M ALKALINE GLASSY ICE WITH A (H)-(H) PLUS (D) RATIO OF SIMILAR TO 0.11. THE SIDE COMPONENTS OF THE TRIPLET COULD BE DETECTED, AND THE SPLITTING IS 6 PLUS OR MINUS 1 OE, IN AGREEMENT WITH CALCULATION. FACILITY: INST. OF PHYSICAL CHEMISTRY, MOSCOW.

UNCLASSIFIED

Acc. Nr.

AP0028301

Abstracting Service:
CHEMICAL ABST. 3-70

Ref. Code

UR 2952

49500p Detection of hyperfine structure in the EPR spectrum of a trapped electron in γ -irradiated alkaline glassy ice at 77°K. Ershov, B. G.; Pitacy, A. K. (Lab. Radiat. Chem., Inst. Phys. Chem., Moscow, USSR). *Radiat. Eff.* 1970, 2(2), 135-6 (Eng). The EPR spectrum of the trapped electrons in γ -irradiated 10M KOH glassy ice at 77°K with $\xi = [H]/([H] + [D]) \approx 0.11$ shows a splitting between side components of 6 ± 1 Oe. The triplet is most distinct for $\xi < 0.2-0.33$. The electrons are localized in the trap formed by the protons of mols. of the medium. DWJN

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REEL/FRAME

19671742

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1/2 009

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--STATISTICAL ANALYSIS OF SPIN DEPENDENCE OF NEUTRON STRENGTH
FUNCTIONS FOR NUCLEI -U-

AUTHOR--(04)--MALECKI, H., PIKELNER, L.B., SALAMATIN, I.M., SHARAPOV, E.I.

COUNTRY OF INFO--USSR

P

SOURCE--YAD. FIZ. 1970, 11(1), 111-21

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--STATISTIC ANALYSIS, NUCLEAR SPIN, NEUTRON, NUCLEUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1976/0426

STEP NO--UR/0367/70/011/001/0111/0121

CIRC ACCESSION NO--AP0042462

UNCLASSIFIED

PROCESSING DATE--09OCT70

UNCLASSIFIED

2/2 009

CIRC ACCESSION NO--A00042462
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A SIMPLE ANAL. EXPRESSION IS OBTAINED FOR THE DISTRIBUTION OF THE NEUTRON STRENGTH FUNCTIONS OF NUCLEI. BY USING THIS EXPRESSION AS THE BASIS, THE DISTRIBUTION OF DIFFERENCE OF THE STRENGTH FUNCTIONS FOR 2 SPIN STATES IS OBTAINED. A STATISTICAL ANAL. FOR 28 NUCLEI SHOWED THAT THE EXPTL. OBSD. DIFFERENCES OF THE STRENGTH FUNCTIONS FOR VARIOUS SPIN SYSTEMS ARE MAINLY DETERM. BY EVALUATED STATISTICALLY FOR ALL THE NUCLEI OF KNOWN STRENGTH FUNCTION S(J). IT IS CONCLUDED THAT THERE IS NO BASIS FOR ASSUMING THE EXISTENCE OF A GENERAL AND ESSENTIAL RELATION BETWEEN THE STRENGTH AND THE SPIN FOR MOST OF THE NUCLEI.

FACILITY: OB'EDIN. INS. YAD. ISSLED.,
USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

1/2 010

TITLE--STATISTICAL ANALYSIS OF THE SPIN DEPENDENCE OF THE NEUTRON STRENGTH FUNCTION OF THE NUCLEUS -U-

AUTHOR--(04)-MALETSKIY, KH., PIKELNER, L.B., SALAMATIN, I.M., SHARAPOV, E.I.

COUNTRY OF INFO--USSR

SOURCE--(KFK-TR-308), FROM REPORT JINR-P3-4484, 25P. DEP. CFSTI

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NUCLEAR SPIN, NEUTRON, NUCLEUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA. #--3001/1913

STEP NO--UR/0000/70/000/000/0001/0025

CIRC ACCESSION NO--AT0127314

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0127314

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STATISTICAL PROPERTIES OF THE ESTIMATIONS OF THE STRENGTH FUNCTIONS ARE DERIVED, AND THE DISTRIBUTION OF THE DIFFERENCE OF THE STRENGTH FUNCTION FOR TWO SPIN STATES IS DETERMINED THEORETICALLY. THE THEORETICAL RESULTS ARE COMPARED WITH EXPERIMENTAL DATA FROM THE LITERATURE. THE RESULTS SHOWED THAT THE DIFFERENCE IN THE STRENGTH FUNCTIONS DOES NOT OCCUR IN ALL NUCLEI BUT ONLY IN INDIVIDUAL MASS NUMBER AREAS. WHERE THE STRENGTH FUNCTIONS VARY STRONGLY WITH A, THE CHARACTERISTICS OF THE DIFFERENCES ARE DIFFICULT TO DETERMINE WITHIN THE FRAMEWORK OF THE ANALYSIS MADE, ESPECIALLY AS THERE ARE NO THEORETICAL ASSUMPTION ON THE SIGN AND MAGNITUDE OF THE EFFECT TO EXPECTED. THERE IS NO BASIS FOR THE ASSUMPTION OF AN ESSENTIAL AND COMMON DEPENDENCE OF THE STRENGTH FUNCTION ON THE SPIN. FACILITY: JOINT INST. FOR NUCLEAR RESEARCH, DUBNA, USSR.

UNCLASSIFIED

1/2 036 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--FORMATION OF STELLAR ASSOCIATIONS -U-
AUTHOR--PIKELNER, S.B. P
COUNTRY OF INFO--USSR
SOURCE--ASTROPHYS. SPACE. SCI. (NETHERLANDS), VOL. 7, NO. 3, P. 489-93
(JUNE 1970)
DATE PUBLISHED----JUN70
SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS
TOPIC TAGS--STAR, STELLAR SYSTEM, ASTROPHYSICS, X RAY, HEATING, UV
RADIATION, IONIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605030/001 STEP NO--NE/0000/70/007/003/0489/0493
CIRC ACCESSION NO--AP0141824

UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0141824

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RAYLEIGH-TAYLOR INSTABILITY FORMS MASSIVE COMPLEXES. WHEN 10^{21} ATOMS CM⁻³ NEGATIVE² ARE GATHERED, X RAYS WHICH HEAT THE GAS UV RAYS WHICH IONIZE CARBON ARE ABSORBED. A LAYER SHOULD APPEAR WITH TEMPERATURES AS LOW AS 6 K AND DENSITY TO 4 TIMES 10^3 CM⁻³ NEGATIVE³. FINALLY THE LAYER IS FRAGMENTED INTO STARS WHOSE MASSES MAY EVEN BE LESS THAN ONE SOLAR MASS. THE TEMPERATURE OF THE LAYER SHOULD INCREASE WITH TIME BECAUSE PART OF FREE CARBON IS GRADUALLY ABSORBED BY DUST. THEREFORE MORE MASSIVE STARS SHOULD APPEAR AFTER LESS MASSIVE STARS. THE STARS WHICH ARE FORMED KEPT NEAR THE LAYER BY ITS GRAVITATION. WHEN THEIR TOTAL MASS BECOMES COMPARABLE WITH THE MASS OF THE LAYER, THEY SHOULD FALL TO THE GALACTIC PLANE IN AGREEMENT WITH OBSERVED PROPER MOTIONS OF SEVERAL STUDIED STELLAR SYSTEMS. (13 REFS). FACILITY: STERNBERG ASTRONOMICAL INST., MOSCOW, USSR.

UNCLASSIFIED

1/2 017

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--COLD REGIONS IN THE INTERSTELLAR GAS AND THE FORMATION OF STELLAR ASSOCIATIONS -U-

AUTHOR--PIKELNER, S.B.

COUNTRY OF INFO--USSR

SOURCE--ASTRONOMICHESKII ZHURNAL, VOL. 47, NO. 2, 1970, P. 254-264

DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--LOW TEMPERATURE PROPERTY, INTERSTELLAR MATTER, STAR, STELLAR EVOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/1472

STEP NO--UR/0033/70/047/002/0254/0264

CIRC ACCESSION NO--AP0125100

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0125100

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL ANALYSIS OF THE POSSIBLE ROLE OF LOW TEMPERATURE REGIONS IN THE INTERSTELLAR GAS IN THE GENESIS OF STELLAR ASSOCIATIONS. THE RESULTS ARE USED IN CONSTRUCTING A POSSIBLE MECHANISM OF THE FORMATION OF STARS DURING THE FINAL STAGE IN THE DEVELOPMENT OF RAYLEIGH-TAYLOR INSTABILITIES. SHIELDING OF THE INTERSTELLAR GAS FROM UV AND X RAYS, THE FORMATION OF NEUTRAL CARBON, AND THE FORMATION OF A THIN GAS LAYER WITH TEMPERATURES OF 6 TO 10 DEG K ARE THE ESSENTIAL FEATURES OF THIS THEORY. FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 681.327.66

PIKHLAI, Ye. V., Institute of Cybernetics, Academy of Sciences of the
Estonian SSR

"An Associative Memory Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 21, Jul 72, Author's Certificate No 344505, Division G, filed 21 Mar 69,
published 7 Jul 72, p 217

Translation: This Author's Certificate introduces an associative memory
device which contains wires with a magnetic-film coating surrounded by
conductors. The device also includes a response extraction unit and an
interrogation shaper. As a distinguishing feature of the device, oper-
ational reliability is improved and speed is increased by connecting the
wires with magnetic-film coating to the corresponding interrogation
shapers, and by connecting the conductors to the response extraction unit.

1/1

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Navigation Aids

USSR

UDC: 621.396.967:351.814.343.61.7

PIKHT, E. I.

"Problems of Objectivity in the Facilities for Checking a Course Radio Beacon"

Sb. Nauchn. tr. Vladimir. politekhn. in-t (Collected Scientific Works of Vladimir Polytechnical Institute), 1970, vyp. 9, pp 12-20 (from RZh-Radio-tekhnika, No 5, May 71, Abstract No 5G58)

Translation: The paper discusses causes and conditions under which the earth exercises an effect on the position of the equal-signal zone of a course radio beacon, as well as problems of future development of checking facilities. Fourteen illustrations, bibliography of four titles.

USSR

UDC 529.786

YEREMINA, N. M., MISHAKOV, G. A., PIKHITELEV, A. I., and RUDNEVSKIY, N. K.

"Method and Results of Measuring the Lorentzian Dislocation and Widening of Hyperfine Components of the Major Doublet of Rubidium Caused by Buffer Gas"

V Sb. "VII Ural'sk. Konf. po Spektroskopii, 1971. Vyp 1" [In the Collection "Seventh Ural Conference on Spectroscopy, 1971. No 1".], Sverdlovsk, 1971, pp 139-141 (from Referativnyy Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.549)

Translation: In basic elements of the quantum frequency standard based on rubidium vapors - absorption section, filter section, and spectral lamp - the fillers used are rubidium vapors and a buffer gas. For the analysis and investigation of characteristics of this type of standards, e.g. the parameter of quality and filtration of superfine components of the major Rb doublet, it is necessary to know the coefficient of dislocation and of widening of the rubidium lines caused by the buffer gas. A method is suggested for the investigation of indicated constants for the major doublet of rubidium. The coefficients of dislocations and of line widenings of the major doublet of rubidium (780 nm and 794.7 nm) were measured with a relative error of 15% for argon, xenon, nitrogen, and neon. The results of measurements are shown in a table. Two illustrations, one table, seven bibliographical references.

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PIKHTIN, A.N.

SFRS 59208

6-73

K-7. DISTRIBUTION OF ADJUSTERS IN THE EPITAXIAL LAYERS OF GALLIUM PHOSPHIDE ALLOYED WITH SULFUR AND NITROGEN

Article by D. G. Zaboljina, A. M. Petrov, A. N. Pikhin, D. A. Yan'kov, R. P. Kiseleva, N. V. Artemova, Leningrad; Novosibirsk, III Sibirskii poluprovodnikovii Khibralov (Pis'ma v zhurnal "Fizika i Khimiya Tverdogo Tela", 1972, p. 133)

The properties of epitaxial layers of gallium phosphide alloyed with nitrogen were investigated. The layers were grown by the method of liquid phase epitaxy in an open system on GaP substrates alloyed with sulfur obtained by the Czochralski method. Alloying with nitrogen was realized by adding gallium nitride from 0.05 to 1 percent by weight to the Ga-P melt. The sulfur got into the melt as a result of solution of the substrate.

By using the measurements of the capacitance of the surface barrier at the Ga-P-Au contact, a study was made of the concentration distribution of the donors with respect to depth of the epitaxial layer. On the film obtained on the basis of an analysis of the absorption spectra, the nitrogen concentration in the film was determined as a function of the amount of GaP in the Ga-P melt. Results are presented from a study of the electroluminescence of p-n junctions obtained by the diffusion of zinc in the grown layers. The electroluminescence spectra at room temperature contained two bands with 2.14 electron volt and 2.2 electron volt peaks.

The quantum yield of green radiation is $6 \cdot 10^{-3}$. The brightness of the diodes at a current density of 10 milliamperes/cm² was 30 nites) at 100 milliamperes/cm² it was 1,100 nites.

1/2 064

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--PREPARATION OF OHMIC CONTACTS IN SEMICONDUCTORS -U-

AUTHOR--(03)--POPOV, V.A., PIKHTIN, A.N., YASKOV, D.A.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, (2), 238-9

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--SEMICONDUCTOR DEVICE, SEMICONDUCTOR MATERIAL, LASER APPLICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1801

STEP NO--UR/0120/70/000/002/0238/0239

CIRC ACCESSION NO--AP0135366

UNCLASSIFIED

2/2 064

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135366

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A LASER WAS USED TO PREP. OHMIC CONTACTS IN SEMICONDUCTORS. RESULTS ARE GIVEN FOR ALLOYING OF DIFFERENT METALS AND MIXTS. INTO A SERIES OF SEMICONDUCTOR MATERIALS. FACILITY: LENINGRAD. ELEKTROTEKH. INST., LENINGRAD, USSR.

UNCLASSIFIED

1/2 032

TITLE--KINETICS OF INTERIMPURITY RADIATIVE RECOMBINATION IN GALLIUM PHOSPHIDE -U- UNCLASSIFIED PROCESSING DATE--16OCT70

AUTHOR--(03)-PIKHTIN, A.N., YASKOV, D.A., GLINSKIY, G.F.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(2), 386-93

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RADIATIVE RECOMBINATION, PHOSPHIDE, GALLIUM COMPOUND, ELECTROLUMINESCENCE, LUMINECENCE SPECTRUM, IMPURITY CENTER, ZINC, TELLURIUM, PN JUNCTION, REACTION KINETICS, LUMINESCENCE QUENCHING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1895

STEP NO--UR/0181/70/012/002/0386/0393

CIRC ACCESSION NO--AP0054698

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0054698

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INSIDE THE SPECTRAL BAND DETERMINED BY RADIATIVE RECOMBINATION OF AN ELECTRON, CAPTURED BY A DONOR, WITH A HOLE, CAPTURED BY A SPATIALLY CAPTURED ACCEPTOR, DEPENDENCE SHOULD BE OBSERVED OF THE RELAXATION TIME τ , τ , ON THE ENERGY OF PHOTONS, $h\nu$. THE THEORETICAL DEPENDENCE $\tau(h\nu)$ IS EXPERIMENTALLY CONFIRMED FOR INTERIMPURITY (ZN AND TE) RADIATIVE RECOMBINATION IN GAP (GREEN BAND AT 80 DEGREES EXPTL. DATA WERE OBTAINED IN THE INVESTIGATION OF THE KINETICS OF ELECTROLUMINESCENCE OF GAP DIODES IN THE PULSE INJECTION OF CHARGE CARRIERS ACROSS THE P-N JUNCTION. IN THE RED BAND OF ELECTROLUMINESCENCE, THE MAGNITUDE OF τ WAS INDEPENDENT OF $h\nu$. THE SPECTRAL COMPONENT OF THE RADIATION WAS INVESTIGATED IN THE PROCESS OF QUENCHING OF LUMINESCENCE AND THE EFFECT OF TEMP. ON THE KINETICS OF RADIATIVE RECOMBINATION IN GAP. FACILITY: LENINGRAD, ELEKTROTEKH. INTS. IN UL'VANOVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--ON THE NATURE OF MAGNETIC TRANSFORMATION IN METALS -U-

AUTHOR--PIKIN, S.A.

P

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 4, PP 1406-1411

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--MAGNETIC TRANSFORMATION, ELECTRON MOBILITY, SPECIFIC HEAT,
THERMAL EFFECT, ACOUSTIC EFFECT, TRANSITION METAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1988/1574

STEP NO--UR/0056/70/058/004/1406/1411

CIRC ACCESSION NO--AP0106320

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106320

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALLOWANCE FOR THE MOBILITY OF CARRIERS PRODUCING MAGNETIC ORDERING IN A METAL LEADS, IN THE MODEL OF THE BAND THEORY OF MAGNETISM, TO A PHASE TRANSITION OF THE SECOND KIND WITH A FINITE SPECIFIC HEAT AT THE TRANSITION POINT. ACOUSTIC EFFECTS IN THIS CASE WEAKLY AFFECT THE NATURE OF THE MAGNETIC TRANSFORMATIONS. THE RANGE OF TEMPERATURES ΔT IN WHICH RENORMALIZATION OF THE SPECIFIC HEAT OCCURS, ΔT IS SMALLER THAN OR EQUAL TO $10 T_0$ NEGATIVE T_0 SUBE, IS ESTIMATED FOR THE TRANSITION METALS. FACILITY: INST. KRISTALLOGRAFI, AN SSSR.

UNCLASSIFIED

Metrology, Mapping, Surveying, Graphics

USSR

KORSEN, V. K., PIKKOV, O. M., YARVAL'T, A. E.-I.

"Method of Measurement of Small Differences in Frequencies of Two Signals"

Otkrytiya Izobretmeniya Promyshlennyye Obratzsy Tovarnyye Znaki, No 5, 1972,
Patent No 359606.

Translation: Method of measurement of small differences in frequencies of two signals, based on determination of the increment in phase difference of these signals, not exceeding π during the measurement cycle, and the change in the initial phase of one signal by π , differing in that in order to increase accuracy, interference stability and to simplify the measurement process, an initial phase difference is set less than π , which changes the initial phase of the first signal by π when the phase difference of the input signals exceeds π , while the transmission of pulses of the first signal formed at the moments of its transition through the zero level in two directions control the pulses of the second signal formed at moments of transition through the zero level in one direction, and the difference in summary lengths of the two groups of pulses of signal phase difference formed in sequence, the number of pulses in which is identical, is measured.

1/1

1/2 021

UNCLASSIFIED

PROCESSING DATE--02JCT70

TITLE--PILOT PLANT TESTING OF VIBRATING MIXERS IN CADMIUM PLANT TECHNOLOGY

-U-

AUTHOR--(05)--KHAN, O.A., GUSHCHIN, YU.A., PIKOV, N.KH., AYDAROV, R.ZH.,
AYDAROVA, P.I.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(1) 19-21

P

DATE PUBLISHED-----70

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

TOPIC TAGS--MATERIAL MIXING, VIBRATION EFFECT, CADMIUM, COPPER, ZINC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0751

STEP NO--UR/0136/70/043/001/0019/0021

CIRC ACCESSION NO--AP0107293

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107293

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MIXER USED IS DESCRIBED. THE RESULTS ARE PRESENTED OF PILOT PLANT TESTING OF VIBRATING MIXERS IN DISSOLN. OF CD AS WELL AS OF CU CONTG. INDUSTRIAL PRODUCTS; ALSO PRESENTED ARE THE RESULTS OF CEMENTATION OF CD AND CU IN SOLNS. BY ZV DUST UNDER CD PLANT TECHNOLOGY CONDITIONS. THE DATA OBTAINED WERE SUBMITTED AS THE BASIC DATA ON WHICH TO BASE THE DEVELOPMENT AND CONSTRUCTION OF EXPTL. INDUSTRIAL VIBRATING MIXERS (VIBROAGITATORS) WITH CAPACITIES OF 10-15 M PRIME3.

UNCLASSIFIED

USSR

UDC 613.693

PIKOVSKIY, A. M., Candidate of Medical Sciences, Col Med Serv

"Breakdown of the Fitness of Pilots"

Moscow, Voenno-Meditsinskiy Zhurnal, No 3, 1973, pp 70-73

Abstract: The general problems of breakdown of the fitness of pilots are discussed, and three specific cases are mentioned in which the preventive measures should have been taken by three different kinds of specialists: 1) medical specialists; 2) specialists in flight training; 3) engineering and medical specialists. The steps to be taken in general by aviation doctors to prevent pilot failure are discussed. Inflight symptoms and symptoms noted in ground examinations are outlined.

1/1

1/2 024

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--RELIEF WELDING OF BEARING CAGES -U-

AUTHOR--(02)-PIKOVSKIY, A.M., RUDMAN, M.D.

COUNTRY OF INFO--USSR

P

SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 3, 1970, PP 69-70

DATE PUBLISHED--70

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

TOPIC TAGS--BEARING MANUFACTURING PLANT, WELDING, BIBLIOGRAPHY, AVIATION INSTITUTE, TRACTOR, MECHANICAL TEST, R AND D COOPERATION, R AND D COORDINATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/1469

STEP NO--UR/0122/70/000/003/0069/0070

CIRC ACCESSION NU--AP0115396

UNCLASSIFIED

2/2 024 -

CIRC ACCESSION NO--AP0115396
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT. THE FOURTH STATE BEARING PLANT,
JOINTLY WITH THE KUYBYSHEV AVIATION INSTITUTE CARRIED OUT A PROJECT
CONCERNED WITH THE REPLACEMENT OF SERIES PRODUCED BEARINGS WITH RIVETED
CAGE CONNECTIONS BY A DESIGN IN WHICH THE CAGES ARE CONNECTED UPON
ASSEMBLY BY RELIEF WELDING. MECHANICAL TESTS CONFIRMED THE HIGH STATIC
STRENGTH OF THE POINT WELDING CONNECTIONS. THE ACTUAL EFFICIENCY OF THE
THE WELDED CAGES WAS ESTABLISHED BY STAND AND OPERATIONAL TESTS THAT
BEARINGS. TEST UNDER IDENTICAL OPERATING CONDITIONS SHOWED THAT
BEARINGS WITH A WELDED CAGE HAVE A CONTROL LONGEVITY 1.83 TIMES HIGHER
THAN DO BEARINGS WITH A RIVETED CAGE, AND AN AVERAGE LONGEVITY 2.4 TIMES
HIGHER. EXPERIMENTAL LOTS OF BEARINGS WITH WELDED CAGES WERE DELIVERED
TO TRACTOR PLANTS AND WERE TESTED IN AGRICULTURAL AND TRANSPORT
OPERATIONS. THE TESTS WERE FULLY SATISFACTORY.

UNCLASSIFIED

USSR

UDC 51:621.391

PIKUL', M. V.

"Resource Distribution in Network Planning Systems"

V sb. Ekon.-Mat. metody planir. i uvr. (Economic-Mathematical Methods of Planning and Management--collection of works), First Edition, Vladivostok, 1972, pp 126-134 (from RZh Matematika, No 11, Nov 73, abstract No 11 V701)

Translation: This article is devoted to one of the methods of optimal resource distribution in network planning systems. The task is formulated as follows: to determine the time to perform each operation to ensure the most complete utilization of resources and the completion of an entire complex of operations in the assigned time periods.

Abstract from the author's introduction.

1/1

USSR

UDC 615.5+57.04

CHEKASOVA, L. S., and PIKHLEV, A. T., Doctors of Biological Sciences (Editors)

Deystviye malykh doz ioniziruyushchey radiatsii na tsentral'nuyu nervnyuyu sistemu -- materialy vsesoyuznogo simpoziuma, sostoyavshegosya v g. minske v Dekabre 1968g (Effect of Small Doses of Ionizing Radiation on the Central Nervous System -- Materials of the All-Union Symposium held in Minsk in December 1968), Minsk, Belorussian State University imeni V. I. Lenin Press, 1971, 112 pp

Translation: The materials in this collection are a discussion of the reports given at the All-Union Symposium on the effect of ionizing radiation on the central nervous system.

Some of the papers were devoted to various problems of clinical radiation pathology, and others pertained to the metabolism of the brain and the role of the hypothalamus-hypophysis-adrenal system in radiation pathology. In two of the articles, the authors try to standardize the experimental procedure, assuming utilization of ionizing radiation.

The results of some of the papers are of interest to researchers dealing with the problems of space radiobiology.

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USSR

CHERKASOVA, L. S., and PIKULEV, A. T. (Editors) Deystviye malykh doz ioniziruyushchey radiatsii na tsentral'nuyu nervnuyu sistemu -- materialy vsesoyuznogo simpoziuma, sostoyavshegosya v g. Minske v Dekabre 1968g, Minsk, Belorussian State University imeni V. I. Lenin Press, 1971, 112 pp

On the whole, the collection will be useful to scientific workers, post-graduate students and students in the advanced courses specializing in biophysics, biochemistry, radiobiology and also clinicians dealing with radiation pathology.

Foreword

At this time radiobiology has at its disposal comparatively broad data on the effect of large doses of ionizing radiation on the organism. Without refuting the undoubted importance of this research, we must consider that during peacetime and even under extraordinary circumstances, low radiation levels, especially under the conditions of chronic effects, will have great practical significance. This determines the urgency of the symposium with respect to the effect of ionizing radiation on the central nervous system held in December 1968, in Minsk on the initiative of the Physiology Institute of the Belorussian SSR Academy of Sciences. The most important reports given at the symposium are presented in this collection.

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USSR

CHERKASOVA, L. S., and PIKULEV, A. T. (Editors), Deystviye malykh doz ioniziruyushchey radiatsii na tsentral'nyuyu nervnyuyu sistemu -- materialy vsesoyuznogo simpoziuma, sostoyavshegosya v g. Minske v Dekabre 1968g, Minsk, Belorussian State University imeni V. I. Lenin Press, 1971, 112 pp

There is no doubt that the mechanisms of the development of pathology and the recovery processes in the presence of small doses of radiation have their characteristic features. This can be judged at least by the fact that the chemical radio protectors, as a rule, turn out not to be effective in the case of ionizing radiation in small doses. It is possible that this depends on the fact that large doses basically have a damaging effect, and small doses, especially under chronic conditions, mainly disturb the processes of physiological recovery. This proposition, just as many others, lacks experimental basis.

The selection of the nervous system as the object of research the results of which are presented here is undoubtedly appropriate. Soviet classical neurologists recently demonstrated that under both physiological and pathological conditions the nervous system is the first to react to all changes in environment. The goal of radiobiologists, physiologists, biophysicists and biochemists is to determine the effect of various doses on the nervous system and to establish the biological significance of various changes in this system; in other words, to establish what processes in the nervous system are the "physiological

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USSR

CHERKASOVA, L. S., and PIKULEV, A. T. (Editors), Deystviye malykh doz ioniziruyushchey radiatsii na tsentral'nyuyu nervnyuyu sistemu -- materialy vsesoyuznogo simpoziuma, sostoyavshegosya v g. Minske v Dekabre 1968g, Minsk, Belorussian State University imeni V. I. Lenin Press, 1971, 112 pp.

measure" of the organism and which are a manifestation of the approaching radiation pathology. There is no clear distinction between the physiological and the pathological. However, the strength and duration of the oncoming changes, the set of other manifestations of the radiation effect, the reversibility of the reactions, and so on permit radiopathologists to make decisions regarding this highly complex problem.

There is hardly any doubt that when we are talking about radiation effects on the nervous system it is necessary to distinguish the radiosensitivity and radio injury.

The research of O. P. Voyevodina is of interest. She has demonstrated that whole-body irradiation in the amount of one roentgen on a daily basis and reaching a total dose of 7-10 roentgens cause imbalance of the excitatory and inhibitory processes of the cerebral cortex of dogs without any changes in the quantitative composition of leukocytes in the peripheral blood. The changes are of a reversible nature. Normalization comes after 29-40 days.

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USSR

CHERKASOVA, L. S., and PIKULEV, A. T. (Editors), Deystviye malykh doz ioniziruyushchey radiatsii na tsentral'nuyu nervnuyu sistemu -- materialy vsesoyuznogo simpoziuma, sostoyavshegosya v g. Minske v Dekabre 1968g, Minsk, Belorussian State University imeni V. I. Lenin Press, 1971, 112 pp

This type of research must be continued. It can have very great significance for the future experimental basis of the maximum permissible level.

This collection contains interesting papers on clinical pathology (I. S. Glazunov, et al., A. K. Gus'kova, et al., and so on). People working under the conditions of possible professional irradiation (workers on accelerators, reactors, x-ray technicians, and others) were subjected to especially careful clinical analysis. In the papers mentioned, unique data are presented on radiation pathology. It is classified with respect to radiation doses and forms of clinical manifestation. Highly complex problems are solved with respect to establishing the causal relationship of the discovered aberrations from irradiation.

The report by I. Ya. Tereshchenko, where the remote consequences of irradiation of children are demonstrated, must attract special attention. The results obtained indicate the inadmissibility of the applied method of radiation therapy in small children.

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USSR

CHERKASOVA, L. S., and PIKULEV, A. T. (Editors), Deystviye malykh doz ioniziruyushchey radiatsii na tsentral'nyuyu nervnyuyu sistemu -- materialy vsesoyuznogo simpoziuma, sostoyavshegosya v g. Minske v Dekabre 1968g, Minsk, Belorussian State University imeni V. I. Lenin Press, 1971, 112 pp

In my opinion there is no special necessity for discussing the timeliness and significance of the research dealing directly with the problem of space radio pathology (Yu. G. Grigor'yev, et al.).

A number of interesting studies performed under the guidance of Professor L. S. Cherkasova must be mentioned. These papers deal with the urgent problems of metabolism of the brain and the role of the hypothalamus-hypophysis system in radiation pathology. Without a comprehensive study of these problems it is impossible to discover the pathogenetic mechanisms.

The deeper and more completely the problems of radiation biochemistry and hormonal effects on these processes are studied, the more well-founded the principles of radiation damage therapy will be.

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USSR

CHERKASOVA, L. S., and PIKULEV, A. T. (Editors), Deystviye malykh doz ioniziruyushchey radiatsii na tsentral'nuyu nervnyuyu sistemu -- materialy vsesoyuznogo simpoziuma, sostoyavshegosya v g. Minske v Dekabre 1968g, Minsk, Belorussian State University imeni V. I. Lenin Press, 1971, 112 pp

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USSR

CHERKASOVA, L. S., and PIKULEV, A. T. (Editors), Deystviye malykh doz ioniziruyushchey radiatsii na tsentral'nyuyu nervnyuyu sistemu -- materialy vsesoyuznogo simpoziuma, sostoyavshegosya v g. Minske v Dekabre 1968g, Minsk, Belorussian State University imeni V. I. Lenin Press, 1971, 112 pp

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USSR

UDG 591.1.15

PIKULEV, A. T., GURKO, A. V., ZHIGALKOVICH, N. V., KHRIPCHENKO, I. P.,
and CHERNOGUZOV, V. M.

"On the Mechanism of the Action of Ionizing Radiation on the Activity of
Aminotransferase in the Brain of White Rats"

Nauch. dokl. vyssh. shkoly. Biol. n. (Scientific Papers of the University.
Biological Sciences), 1971, No 9, pp 43-48 (from RZh-Biologicheskaya
Khimiya, No 2, 25 Jan 72, Abstract No 2F272)

Translation: The rate of transamination processes catalyzed by the alanine-
and aspartate-aminotransferase enzyme system is disrupted in rat brain under
the effect of X-radiation in a dose of 700 roentgens. This is due to a change
in the activity of the given enzymes in individual subcellular fractions of
the brain, and also to discoordination in the transamination system which is
especially pronounced on the first and seventh days after exposure to radia-
tion. Résumé.

1/1

P

Radiobiology

USSR

UDC 577.15

CHERNOGUZOV, V. M. and PIKULEV, A. T., Belorussian State University

"The Effect of X-Ray Irradiation on Aspartate Aminotransferase Activity in Brain Mitochondria"

Minsk, Doklady Akademii Nauk BSSR, No 4, 1970, pp 367-369

Abstract: Whole-body, single X-ray irradiation of rats with 40 r increased the activity of soluble aspartate aminotransferase in brain mitochondria within 24 hours by 21% compared with the control. This increase was at the expense of the bound form of the enzyme, because total aspartate aminotransferase activity in the mitochondria remained unchanged. The observed phenomenon is ascribed to partial liberation of the bound form of aspartate aminotransferase, due to physicochemical changes in the properties of the mitochondria brought about by ionizing radiation.

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USSR

UDC 624.04:534.1

PIKULEV, N. A., Kazan', ERDELEVSKIY, A. N., Sverdlovsk

"On the Problem of Designing a Group of Vibration Dampers Considering Detuning"

Podol'sk, Stroitel'naya mekhanika i raschet sooruzheniy, No. 5, 1971, pp 4-9

Abstract: A technique is proposed for calculating the total dynamic rigidity of a group of identical linear vibration absorbers considering their detuning. The vibration dampers are considered as a group of parallel couplings connected to the structure, the partial natural frequencies of which have random deviations from the frequency of the forced oscillations. It is assumed that these deviations lie with a given degree of probability within the tolerance limits due to inaccuracy in fabrication or construction of the vibration dampers and also by instability in the frequency of the dynamic disturbance. Formulas are derived for determining the total dynamic rigidity of the group of vibration dampers where the partial natural frequencies have a random deviation from a given value corresponding to the ideal tuning of the system. Analysis shows that when the number of vibration dampers in the group is small and the probability of identical detuning is great in several or in all vibration dampers, the formula given for calculating the total dynamic rigidity of the system

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USSR

PIKULEV, N. A., EKDELEVSKIY, A. N., Stroitel'naya mekhanika i raschet sooruzheniy, No. 5, 1971, pp 4-9

with vibration dampers is selected depending on the result of the expansion of a certain inequality. When the purpose of installing a small group of vibration dampers is to obtain a coefficient of vibration damping with a modulus considerably greater than unity the correct coefficient for calculating the total dynamic rigidity of the group is taken from a given table without calculating the properties of the system as a whole. It is shown that a large group of randomly detuned vibration dampers is similar to a group of ideally constructed vibration dampers with an increase in damping. One can therefore raise the accuracy of the tuning at a stable frequency of the forced oscillations. If the frequency of the forced oscillations changes over a wide range, an increase in the accuracy of the tuning of the vibration dampers can lead to a considerable drop in their total design dynamic rigidity.

2/2

1/2 029 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--FLUOROMETRIC ANALYSIS OF VIBRATORY ENERGY TRANSFER DURING MOLECULAR
IMPACTS -U-
AUTHOR--(04)-PIKULIK, L.G., SEVCHENKO, A.N., YAKOVENO, V.A., KOSTKO, M.YA.
COUNTRY OF INFO--USSR *P*
SOURCE--ZH. PRIKLAD. SPEKTROSK (USSR), VOL. 12, NO. 4, P. 682-90, APRIL
1970
DATE PUBLISHED----APR 70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FLUORESCENCE, ABSORPTION SPECTRUM, GAS STATE, MOLECULAR
PHYSICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1114 STEP NO--UR/0368/70/012/004/0682/0690
CIRC ACCESSION NO--AP0136534

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136534

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTRODUCTION OF GASES INTO FLUORESCENT VAPORS AMPLIFIES THE RADIATION DUE TO LOWER PROBABILITY OF NONRADIATIVE TRANSITIONS. THE PHENOMENON IS EXPLAINED BY VIBRATORY ENERGY TRANSFER FROM EXCITED MOLECULES TO THE INTRODUCED GAS PARTICLES. THE INFLUENCE OF THE OUTSIDE GASES UPON THE LIFE OF PHTHALIMIDE VAPOR EXCITED STATE, SPECTRA AND QUANTUM IS DESCRIBED. THE CHARACTERISTICS PERMIT THE EVALUATION OF ENERGY TRANSFER BY DIRECT FLUOROMETRIC MEASUREMENTS TO BE MADE. CONSTANCY OF OUTPUT AND OF DURATION OF FLUORESCENCE WITHIN A BROAD ABSORPTION SPECTRUM POINT TO ESTABLISHMENT OF THERMODYNAMIC BALANCE OF MOLECULE IN THE MEDIUM. STABILIZATION OF FLUORESCENT MOLECULES IS QUITE EFFECTIVE IN BOTH STOKES' AND ANTI STOKES REGIONS OF THE EXCITATION SPECTRUM.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SPECTRAL DEPENDENCE OF THE ANISOTROPY OF THE EMISSION OF COMPLEX
MOLECULAR SOLUTIONS -U-
AUTHOR-(02)-RUDIK, K.I., PIKULIK, L.G.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 611-14
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ANISOTROPY, AMINE, PHTHALIC ACID, IMIDE, HIGH TEMPERATURE
EFFECT, LOW TEMPERATURE EFFECT, GLYCEROL, BUTANOL, PROPANOL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/2020 STEP NO--UR/0048/70/034/003/0611/0614
CIRC ACCESSION NO--AP0125608
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 022

CIRC ACCESSION NO--APG125608

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

ABSTRACT. THE EFFECT OF TEMP. ON THE DEPENDENCE OF THE ANISOTROPY R OF EMISSION ON THE EXCITATION FREQUENCY NU SUBEX WAS STUDIED IN GLYCEROL, ISO BUOH, AND PRDH SOLNS. OF 3,AMINOPHTHALIMIDE, 4,AMINOPHTHALIMIDE, AND 3,METHYLAMINO,N,METHYLPHTHALIMIDE (I). AT COMPARATIVELY HIGH TEMPS. THE DEPENDENCE OF R ON NU SUBEX WAS ONLY SLIGHT BUT BOTH THE ABS. VALUE OF R AND THE NU SUBEX DEPENDENCE INCREASED WITH DECREASING TEMP. AT SUFFICIENTLY LOW TEMP.; E.G., AT MINUS 20DEGREES FOR I IN GLYCEROL, FURTHER COOLING OF THE SOLN. ALMOST DID NOT CHANGE THE ANISOTROPY OF THE LONG WAVE RADIATION BUT PRODUCED A SIGNIFICANT DROP IN R AT HIGH NU SUBEX.

FACILITY: BELORUSS. TEKHNOL. INST. IM. KIROVA, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--TEMPERATURE FUNCTION OF THE FLUORESCENCE POLARIZATION OF
PHTHALIMIDE SOLUTIONS ACCORDING TO THE ABSORPTION SPECTRUM -U-
AUTHOR--(03)--RUDIK, K.I., PIKULIK, L.G., KOSTKO, M.YA.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(3), 76-81
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--IMIDE, FLUORESCENCE, GLYCEROL, BUTANOL, PROPANOL, ABSORPTION
SPECTRUM, THERMAL EFFECT, EXCITED STATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0847 STEP NO--UR/0139/70/013/003/0076/0081
CIRC ACCESSION NO--AP0124512

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124512

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE WAVELENGTH OF THE EXCITATION RADIATION ON THE DEGREE OF POLARIZATION OF THE FLUORESCENCE OF SOLNS. OF 3 AND 4, AMINOPHTHALIMIDE, AND 3, MONOMETHYLAMINO, N, METHYLPHTHALIMIDE IN GLYCEROL, ISO, BUOH, AND PROH WAS STUDIED BY MEASURING ABSORPTION SPECTRA OF THE SOLNS. AT NEGATIVE 80 TO 70 DEGREES, VARIOUS CONCNS. OF THE PHTHALIMIDES, AND VARIOUS DURATIONS AND WAVELENGTH OF THE EXCITATION RADIATION. AT HIGH TEMPS. THE EXCITATION RADIATION FREQUENCY DEPENDENCE ON THE DEGREE OF POLARIZATION IS NEGLIGIBLE. IN THE LONGWAVE EXCITATION REGION, THE DEGREE OF POLARIZATION INCREASES WITH DECREASING TEMP. TO A MAX. OF SIMILAR TO 50 PERCENT. THE FREQUENCY DEPENDENCE OF THE POLARIZATION IS ALSO DETD. BY THE DURATION OF THE EXCITATION RADIATION. THE RESULTS ARE DISCUSSED IN TERMS OF THE SUPERPOSITION OF THE 1ST AND 2ND BAND IN THE SPECTRUM.

FACILITY: BELORUSS. TEKHNOL. INST. IM: KIROVA, MINSK, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--VIOLATION OF A UNIVERSAL RELATION IN THE LOW TEMPERATURE REGION -U-
AUTHOR--(02)--GLADCHENKO, L.F., PIKULIK, L.G. P
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(3), 471-5
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--LUMINESCENCE, LOW TEMPERATURE EFFECT, AMINE DERIVATIVE, IMIDE,
SOLVENT ACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1242 STEP NO--UR/0368/70/012/003/0471/0475
CIRC ACCESSION NO--AP0116704
UNCLASSIFIED

272 021

UNCLASSIFIED

PROCESSING DATE--300CT70

CIRC ACCESSION NO--AP0116704

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEPANOV'S RELATION IN (XNU-WNU) PLUS 3 INNU EQUALS HNU-KT PLUS CONST. WHERE WNU IS THE LUMINESCENCE INTENSITY AND XNU ABSORPTION COEFF. WAS CHECKED IN THE TEMP. RANGE MINUS 145 TO 20DEGREES BY USING 3,AMINO, (I), 3,METHYLAMINO, (II), 4,AMINO, (III), AND 3,6,DIAMINO, (IV) DERIVS. OF N,METHYLPHTHALIMIDE, ACRIDINE YELLOW (V), AND RHODAMIN 6G (VI) DISSOLVED IN GLYCEROL(VII) OR ME SUB2 CHCH SUB2 OH (VIII). EXCEPT FOR II AND III IN VII AT 20DEGREES, THE RELATION WAS VALID, BUT THE TEMP. CALCD. FROM IT (T SUBC) DIFFERED FROM EXPTL. TEMP. (COMP. SOLVENT, DELTA NU SUBFL CM PRIME NEGATIVE, TAU SUBFL TIMES 10 PRIME9 SEC, AND VARIOUS T SUBE-T SUBABS. DEGREES GIVEN): I, VII, 2100, 14, 295-304, 264-335, 223-360, 203-380; II, VIII, 1700, 15.5, 293-295, 203-308, 128-317; III, VII, 2200, 5.3, 293-369, 250-374, 223-408, 203-403; IV, VII, 3450, 4.3, 293-423, 257-423, 119-480; V, VIII, 2600, 9.8, 293-315, 262-340, 193-360, 143-437; VI, VII, 700, 10.3, 296-313, 255-348, 232-430, 202-466; V, VII, 1200, MINUS, 293-298, 203-274; VI, VII, 0, MINUS, 293-270, 219-114. THE RESULTS ARE DISCUSSED IN TERMS OF SOLUTE SOLVENT INTERACTION CHANGES WITH TEMP.

UNCLASSIFIED

UDC 621.385.632

USSR

BUDEY, A.G., LAVRUKOVICH, V.I., PIKILLIK, V.G., SHAS', A.V.

"Experimental Study Of Some Methods Of Modulation Of TWT"

Vestn. Belorus. un-ta (Bulletin Of Belorussian University), 1971, Ser.1, No 3,
pp 61-66 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No
2A154)

Translation: Problems are considered of AM and FM low-noise traveling-wave tubes. The block diagram is presented of a unit for determination of the amplitudes, phase characteristics, and the characteristics of frequency conversion. The circuit is described of a sawtooth voltage generator based on drift transistors operating in an avalanche regime. Experimental and calculated data are compared. 8 ref. Summary.

1/1

1/2 032 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--RESISTANCE OF MINERAL PHASES AND STRUCTURAL COMPONENTS OF A SINTER
TO DESTRUCTION -U-
AUTHOR--(02)-PIKULIN, S.A., VEGMAN, YE.F.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(11), 26-30
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--MINERAL, SINTERING FURNACE, CHEMICAL COMPOSITION, IRON,
SILICON DIOXIDE, CALCIUM OXIDE, ALUMINUM OXIDE, MAGNESIUM OXIDE, CRACK
PROPAGATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0951 STEP NO--UR/0148/70/013/001/0026/0030
CIRC ACCESSION NO--AT0105820
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0105820

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHEM. COMPN. OF THE SINTERS USED WAS FE 49.9-52.0, FEO 13.2-18.3, SIO SUB2 9.2-12.7, CAO 12.6-14.6, MGO 1.38-1.86, AL SUB2 O SUB3 1.3-1.5PERCENT, AND BASICITY (CAO: SIO SUB2) 1.02-1.43. THE CRACKS WERE STUDIED ON 107 MICROPARTS WITH DIFFERENT PHASE COMPNS. FOR EVERY PART, THE AREA OF THE PHASE WAS DETD. AS WAS THE LENGTH OF THE CRACKS IN THE PHASE. THE LEAST CRACK FORMATION WAS FOUND IN DIFFERENT FORMS OF MAGNETITE IN COMPARISON WITH OTHER MINERAL PHASES. THE CRACK FORMATION IN COARSE GRAINED MAGNETITE WAS HIGHER THAN THAT OF FINE GRAINED.

UNCLASSIFIED

USSR

UDC 669.28.5.849.1.018.44.620.186

PIKUNOV, M. V., DANILINA, T. B., MEL'NIKOVA, L. V., DESIPRI, A. I.

"Investigation of the Structure and Certain Properties of Alloys Based on the Molybdenum-Rhenium System"

Nauchn. Tr. N-i. i Proyechn. In-t Redkomet. Prom-sti [Scientific Works of Scientific Research and Planning Institute for the Rare Metals Industry], 1971, Vol. 32, pp. 22-28. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I718 by the authors).

Translation: The metallographic structure of the alloy Mo-50% Re-50% Fe, produced in an arc furnace with a nonconsumable electrode, is studied in detail. A method of preparation of sections and etching conditions are developed for this purpose. It is demonstrated that this alloy, depending on the conditions of heat treatment, may be either a one- or a two-phase alloy with the corresponding changes in properties. Physical heterogeneity of ingots is detected, related to the conditions of solidification and manifested as sharp differences in dendritic structure. This heterogeneity causes differences in hardness in various sectors of the ingot. The possibility of deformation of the alloy by hot pressing and impact upsetting is studied. 3 figs; 4 tables, 5 biblio refs.

1/1

USSR

UDC 669.794.669.25

VOSKRESENSKAYA, L. A., PETUKHOVA, A. S., PIKUNOV, M. V.

"Study of Distribution of Tantalum in the Structure of Yttrium by Contact Micro-
roentgenography"

Nauchn. Tr. N-i. i Proyeckn. In-t Redko met. Prom-sti [Scientific Works of Scientific Research and Planning Institute for the Rare Metals Industry], 1971, Vol. 32, pp. 34-37. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I710 by the authors).

Translation: The distribution of Ta in Y produced by various methods was studied. The method of contact microroentgenography was found to be the only possible method for this purpose. It was established that Y is contaminated to a significant extent with tantalum. The nature of the distribution of Ta in Y and the influence of Cu and Fe impurities on this distribution were determined. 3 figs; 5 biblio refs.

1/1

USSR

UDC 669.018.45.548.55

PIKUNOV, M. V.

"The Problem of Rare Refractory Metal Single Crystals"

Nauchn. Tr. N-i. i Projektn. In-t Redkomet. Prom-sti [Scientific Works of Scientific Research and Planning Institute for the Rare Metals Industry], 1971, Vol. 32, pp. 182-189. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I755 by the author).

Translation: The problem of the application of single crystals of refractory rare metals (RRM) in scientific research and practical development is briefly analyzed. Possible methods of production of RRM single crystals are studied. The history of development of electronic crucibleless zone melting (ECZM) in the USSR and abroad is briefly outlined. The level achieved and unsolved problems in the production of RRM single crystals by ECZM are discussed. Problems of the distribution of RRM single crystals with ECZM, preferential growth directions, the production of single crystals of metals with polymorphic conversions, and the improvement of structure are studied in general form. 18 biblio refs.

1/1

Single Crystals

USSR

UDC 669.275.018.45.548.55.620.193.669.977

PIKUNOV, M. V., SHISHKOV, V. V.

"Purity and Perfection of Tungsten Single Crystals"

Nauchn. Tr. N-i. Proyechn. In-t Redkomet. Prom-sti [Scientific Works of Scientific Research and Planning Institute for the Rare Metals Industry], 1971, Vol. 32, pp. 189-195. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I709 by the authors).

Translation: The correspondence of calculated and experimental data on the purification of W by electronic crucibleless zone melting to remove Fe, Cr, Mo, and V is established. A difference in hardness on the surfaces corresponding to various crystallographic planes is detected, the values of hardness on the section changing as a function of orientation of the diagonals of the imprint relative to the crystallographic axis. 1 fig; 2 tables; 28 biblio refs.

1/1

1/2 029 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--REACTION OF MOLTEN GALLIUM WITH COPPER -U-
AUTHOR--TIKHOMIROVA, D.I., ~~PIKUNOV, M.V.~~ RUZINOV, L.P., MARCHUKOVA, I.D.
COUNTRY OF INFO--USSR
SOURCE--FIZ. KHIM. MEKH. MATER. 1970, 5(6), 699-703
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--COPPER ALLOY, GALLIUM ALLOY, LIQUID METAL, INTERMETALLIC
COMPOUND, CHEMICAL REACTION, COPPER POWDER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0624 STEP NO--UR/0369/70/005/006/0699/0703
CIRC ACCESSION NO--AP0105603
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105603

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECHANISM OF THE REACTION OF LIQ. GA WITH POWD. CU AT 100DEGREES IS STUDIED. ON THE BASIS OF THE INVESTIGATION OF THE CHARACTERISTICS OF THE GROWTH OF THE THETA PHASE (CU₃GA SUB2) THE METHOD OF CALCN. OF THE AV. EFFECTIVE THICKNESS OF THE LAYER OF THE INTERMETALLIC PHASE IS WORKED OUT. IT IS ESTABLISHED THAT THE GROWTH OF THE THETA PHASE, ARISING AS THE RESULT OF THE REACTION OF LIQ. GA WITH POWD. CU CONFORMS TO A PARABOLIC RELATION.

UNCLASSIFIED

AA0051877

PIKUS, I.F.
UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent,

237319

ROTATING REGENERATIVE HEAT-EXCHANGER
comprising body with base and cap,

counterflow inlets and outlets for heat-exchange media and rotor with gasproof radial ribs, differing in having alternating baffles on the cap and base. This intensifies the heat exchange. The heat exchanger consists of fixed cylindrical body 1 with cap 2 and base 3 having inlets and outlets 4 and 5 for heat-exchange media in counter-flow, and rotor 6 with gasproof ribs 8 on vertical shaft 7, forming sections 9 for the heat-exchange scale dispersal. The cap and base have alternating gasproof baffles 10, which with ribs 8 form channels 11 to provide multiple motion of each heat-conductor via sections 9 with alternating upward and

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9

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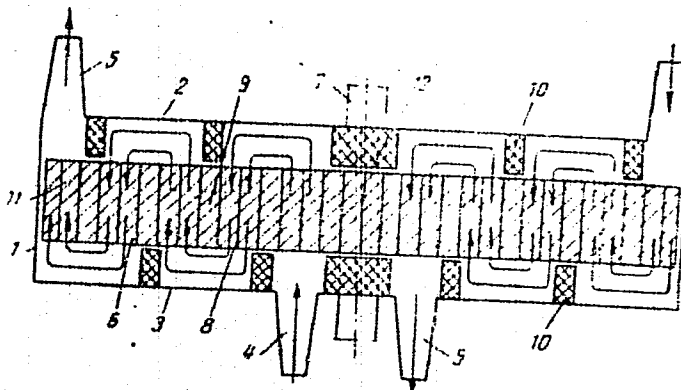
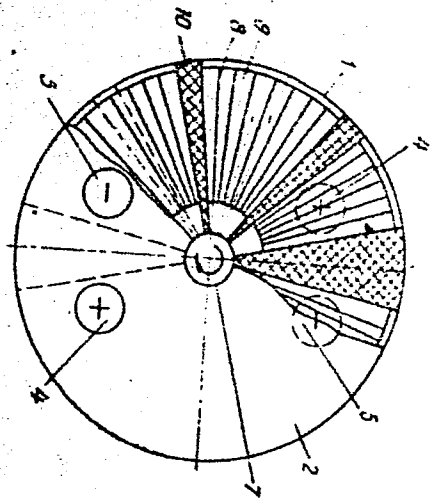
downward flow, providing pseudo-liquefaction of the scale layer in the channels with upward flow. To prevent cross-flow between the hot and cold zones, sliding-type sealing device 12 is used.

22.7.66 as 1091558/24-6 LIUBOSHITS I.L. & PIKUS I.F. et al. Institute of Thermal and Mass Exchange of the Belorussian Academy of Science (16.6.69) Bul. 8/12.2.69. Class 24c, Int. Cl. F 23f.

AUTHORS: Lyuboshits, I. L.; Pikus, I. F.
Institut Teplo - i Massoobmena AN Belorusskoy SSR

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19820334

AA0051877



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19820335

USSR

UDC 621.762.4.001

KUZNETSOV, V. P., and PIKUS, I. M.

"Temperature Measurement During Impulse Pressing of Metal Powders"

V sb. Progressiv. tekhnol. mashinostr. (Progressive Machine-Building Technology -- Collection of Works), Vyp. 2, Minsk, "Vysheysh. Shkola," 1971, pp 180-181 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1G240 by S. Bobrova)

Translation of Abstract: The authors describe the methodology of temperature measurement during the explosive pressing of metal powders. The sensor is a thermocouple without a junction, whose working ends make contact through the powder under investigation. Thermocouple response does not exceed 0.08 microsecond. A dependence is obtained between signal amplitude ratios of sensors under static and dynamic conditions $n_{stat} = 2.4 n_{dyn}^{0.84}$, which permits calibration of the apparatus under dynamic conditions. Three illustrations. Bibliography with four titles.

1/1

1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--VARIETY DIFFERENCES IN THE REACTION OF WINTER WHEAT TO THE USE OF
CHLOROCHOLINE CHLORIDE IN THE UKRAINIAN STEPPE -U-
AUTHOR-(03)-ZADONTSEV, A.I., PIKUSH, G.R., PYKHTIN, N.I.

COUNTRY OF INFO--USSR

SOURCE--AGROKHIIMIYA 1970, (3), 99-109

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WHEAT, CHLORIDE, HERBICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0153

STEP NO--UR/0485/70/000/003/0099/0109

CIRC ACCESSION NO--AP0123924

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123924

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ODESSA 3, BEZOSTAYA 1, AND MIRONOVSKAYA 808 WINTER WHEAT VARIETIES WERE SPRAYED WITH CHLOROCHOLINE CHLORIDE (I) AT 4, 8, OR 16 KG-HA. SPRAYING DURING FALL TILLERING RESULTED IN LARGER LEAVES IN THE FALL, BUT SMALLER ONES IN THE SPRING. I HAD GREATER INTERNODAL AND STEM SHORTENING EFFECTS WHEN SPRAYED EARLIER OR IN LARGER DOSES. SPRAYING OF I DURING SPRING TILLERING STRENGTHENED THE EFFECT ON THE LOWER INTERNODES. THIS INCREASED THE ODESSA 3 CROP, SINCE IT HAD THE ELASE RESISTANCE TO LODGING, AND TO A LESS EXTENT INCREASED THE MIRONOVSKAYA 808 CROP, WHICH HAD GREATER RESISTANCE. THE BEZOSTAYA 1 CROP WAS NOT AFFECTED, SINCE IT WAS VERY RESISTANT TO LODGING. I REDUCED THE SPIKE SIZE IN ALL VARIETIES, AND INCREASED THE LENGTH, BUT DECREASED THE D., OF THE WHEAT GRAINS. FACILITY: VSES. NAUCH.-ISSLED. INST. KUKURUZY, DNEPROPETROVSK, USSR.

UNCLASSIFIED

1/2 005 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DEEPENING OF THE TILLERING NODE AND INCREASE OF THE PRODUCTIVITY OF
WINTER WHEAT TREATED WITH CHLOROCHOLINE CHLORIDE -U-
AUTHOR-(03)-ZADONTSEV, A.I., PIKUSH, G.R., GRINCHENKO, A.L.
COUNTRY OF INFO--USSR
SOURCE--VESTN. SEL'SKOKHOZ. NAUKI (MOSCOW) 1970, 15(1), 26-32
DATE PUBLISHED-----70
SUBJECT AREAS--AGRICULTURE
TOPIC TAGS--WHEAT, CHLORIDE, PLANT GROWTH REGULATOR, AGRICULTURAL CROP
YIELD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0402 STEP NO--UR/9091/70/015/001/0026/0032
CIRC ACCESSION NO--AP0122582
UNCLASSIFIED

2/2 005

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122582

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEEDS OF WINTER WHEAT WERE SOAKED 2.5-4 HR IN 5-10PERCENT SOLN. OF CCC, DRIED IN THE SHADE, AND SOWN AT 3 DIFFERENT DATES, EARLY (AUGUST 5), OPTIMAL (SEPT. 5), AND LATE (SEPT. 25). ON THE SHOOTS FROM TREATED SEED, THE UNDERGROUND INTERNODE BELOW THE NARROW BAND, MARKING THE POINT OF DEVELOPMENT OF THE TILLERING NODE, WAS CURTAILED IN LENGTH, AND THE EMBRYONIC TILLERING NODE REMAINED AT A LOWER DEPTH IN THE SOIL (2-3 CM.) THAN FOR CONTROL PLANTS. THIS PROTECTED THE NODE FROM SUDDEN CHANGES OF TEMP., AND ALLOWED IT TO BECOME ACCLIMATIZED GRADUALLY TO REDN. OF TEMP. IN THE WINTER. PLANTS FROM TREATED SEED HAD THUS A GREATER SURVIVAL RATE IN WINTER, SHOWED MORE VIGOROUS GROWTH IN SPRING AND SUMMER, AND GAVE AN INCREASED YIELD OF GRAIN. THE INCREASE WAS SMALLER, THE EARLIER THE DATE OF SOWING; 60 DAYS OF STORAGE OF THE TREATED SEED BEFORE SOWING HAD NO ADVERSE EFFECT.

FACILITY: VSES. INST. KUKURUZY, DNEPROPETROVSK, USSR.

UNCLASSIFIED

1/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--THE EFFECT OF THE DEGREE OF PURIFICATION OF BISMUTH SINGLE CRYSTALS
ON THE ANISTROPY OF THERMO EMF -U-
AUTHOR--(03)-PILAT, I.M., CHAYKA, S.V., OKHREN, V.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. SSSR. MOSCOW, NEORGANICHESKIYE MATERIALY, VOL 6, NO 5, MAY
70, PP 982-983

DATE PUBLISHED----MAY70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--BISMUTH ALLOY, METAL SINGLE CRYSTAL, METAL ZONE MELTING, HIGH
PURITY METAL, CRYSTAL ANISOTROPY, METAL MELTING, THERMOELECTROMOTIVE
FORCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3005/1542

STEP NO--UR/0363/70/006/005/0982/0983

CIRC ACCESSION NO--AP0133465

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133465

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE RELATIONSHIP BETWEEN THE ANISOTROPY OF THERMO EMF AND THE DEGREE OF PURIFICATION OF BI SINGLE CRYSTALS. IT WAS FOUND THAT IN TEMPERATURE INTERVALS 120-200DEGREESK AND 280-400DEGREESK A IS PRACTICALLY INDEPENDENT OF TEMPERATURE, BUT SHOWS DIFFERENT VALUES WHICH ARE RELATED TO THE PURITY OF SAMPLES. THE STUDIES WERE CARRIED OUT ON SAMPLES CUT PARALLEL TO THE TRIGONAL AXIS AND PERPENDICULAR TO IT. IT IS CONCLUDED THAT IN ORDER TO OBTAIN HIGH PURITY BI SUITABLE FOR THERMOELECTRIC AND THERMOMAGNETIC STUDIES, IT IS NECESSARY TO USE DOUBLE DROP MELTING AND ZONE MELTING (AT LEAST 50 PASSAGES) METHODS. FACILITY: CHERNOVTSY STATE UNIVERSITY.

UNCLASSIFIED

USSR

UDC 546.87:546.55

P
PIIAT, I. M., CHAYKA, S. V., OKHREM, V. G., Chernovtsy State University

"The Effect of the Degree of Purification of Bismuth Single Crystals on the Anisotropy of Thermo-emf"

Moscow, Neorganicheskiye Materialy, Vol 6, No 5, May 70, pp 982-983

Abstract: A study was made of the relationship between the anisotropy of thermo-emf α and the degree of purification of Bi single crystals. It was found that in temperature intervals 120-200°K and 280-400°K α is practically independent of temperature, but shows different values which are related to the purity of samples. The studies were carried out on samples cut parallel to the trigonal axis and perpendicular to it. It is concluded that in order to obtain high-purity Bi suitable for thermoelectric and thermomagnetic studies, it is necessary to use double drop-melting and zone-melting (at least 50 passages) methods.

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Recorders and Transducers

USSR

UDC 621.397.621 2

BEL'SKIY, V. N., DAVIDENKO, S. N., MARKOVA, Yu. V., ~~PILATOVSKIY, A. I.~~, SMIRNOV, A. Ye., and UAKIN, Ye. S.

"Mobile Magnetic Video Recording Station PVS-1"

Moscow, Tekhnika kino i televideniya, No. 6, 1971, pp 33-37

Abstract: The advantage of this mobile video recording station is that it enables personnel involved in TV programming not only to escape the confines of the studio but to transcend the line-of-sight limitations of the portable transmitter. The station was built by order of the State Committee of the Council of Ministers, USSR, for Television and Radio, in the VNIITR /expansion unknown/ and was completed in 1970. Short descriptions are given of the equipment complement, the functional system of the station, the video channel, the sound accompaniment, the recording of directors' comments, and other facilities the station affords. Diagrams are given of the equipment layout in this mobile recording studio, and of interconnections of the system blocks. Photographs of some of the equipment are also shown.

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UDC 621.357.7.035.4:669.738.7(088.8)

KRAVTSOV, YE. YE., and PIIAVOV, SH. S

"A Process for Electrolytic Cadmium Plating"

Authors' Certificate no 344025, filed 22 Oct 70, published 11 Aug 72 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L308P)

Translation: A process is patented for the electrolytic cadmium plating in an electrolyte containing $CdSO_4$, H_2SO_4 and a surface-active compound. It is improved in that in order to obtain a bright surface and increase the diffusing strength of the electrolyte, acidic resins and an extract of starch syrup were used as surface active agents giving the following components, in g/liter: $CdSO_4$, 45-60; H_2SO_4 , 20-50; the acid resin 30-55; the extract of starch syrup, 10-15; and the process was carried out at a temperature of 18-25° and a D_k of 3-5 amps/decimeter².

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- 15 -

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--LINING OF THE COMBUSTION CHAMBER OF A HIGH PRESSURE STEAM BOILER
-U-
AUTHOR--(04)-KARKLIT, A.K., KRASOTKINA, N.I., PILDISH, V.G., MALINOVSKIY,
S.V.
COUNTRY OF INFO--USSR
SOURCE--OGNEUPORY 1970, 35(2), 18-23
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--STEAM BOILER, SILICON CARBIDE, REFRACTORY MATERIAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1707 STEP NO--UR/0131/70/035/002/0018/0032
CIRC ACCESSION NO--AP0118685
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118685

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 2 LAYERS LINING OF THE COMBUSTION CHAMBER OF A HIGH PRESSURE STEAM BOILER ABLE TO WITHSTAND RAPID TEMP. CHANGES OF 85-100DEGREES-MIN WAS BASED ON SIC NITRIDE BONDED BACK FILLEDWITH GROG. THIS SYSTEM OF A SIC TOP LAYER AND A TIGHTLY PACKED FILL HAS LITTLE VOL. CHANGE WITH TEMP. AND GOOD THERMAL COND. PRODUCING A LINING THAT HAS IMPROVED LIFE, FACILITY: VSES. INST. OGNEUPOR., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 621.382.2.029.64

KAUSOV, S.F., PILODIN, V.I.

"Microwave Band Planar-Epitaxial Varactors"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), No 23, Moscow, "Sov. radio," 1970, pp 133-144 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B149)

Translation: The paper considers the technology of the manufacture and design of silicon planar-epitaxial varactors intended for operation of frequency multipliers in a wide range of operating powers and frequencies. The characteristics of the devices are presented as well as the basic technological characteristics, and the results of a test of varactors which confirm the prospective use for frequency multiplication of diodes which have been developed. 7 ill. 4 tab. 5 ref. Summary.

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USSR

UDC 621.382.2

PIL'DON, V.I., VICEI', A.A.

"Semiconductor Diodes For Frequency Multiplication"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), No 23, Moscow, "Sov.radio," 1970, pp 82-108 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No. 123148)

Translation: Various mechanisms for frequency multiplication are considered and the most promising trends are shown in the development of semiconductor devices intended for frequency multiplication--semiconductor diodes based on variable capacitance, semiconductor diodes based on the effect of charge storage, and combined varicaps. Basic results are considered which were attained abroad in the development and use of multiplier semiconductor diodes based on silicon and gallium arsenide, as well as typical designs of devices and the methods for their tests. On the basis of an analysis of development, the basic trends in the development of devices in the next years are shown. 16 ill. 10 Tab. 36 ref. Summary.

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1/2 008 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECTIVENESS OF USING A NEPHELINE CONCENTRATE IN THE PRODUCTION OF
FOAM GLASS -U-
AUTHOR--(03)-AKULICH, S.S., DEMIDOVICH, B.K., PILETSKIY, V.I.
COUNTRY OF INFO--USSR
SOURCE--STEKLO KERAM. 1970, 27(2), 18-20
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--FOAMED GLASS, ALUMINUM OXIDE GLASS, GLASS COMPOSITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1257 STEP NO--UR/0072/70/027/001/0018/0020
CIRC ACCESSION NO--AP0116719
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116719

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PURPOSE OF THE PRESENT INVESTIGATION CONSISTED IN OBTAINING OPTIMUM COMPS. FOR FOAM GLASS AT A MAX. CONTENT IN THEM OF AL SUB2 O SUB3. SEVERAL COMPS. OF HIGH ALUMINA GLASSES WERE FOUND IN THE SID SUB2-R SUB2 O SUB3 RO-R SUB2 O SYSTEM. FOAM GLASS BASED ON GLASS COMPN. DESIGNATED 6H WAS FOUND TO BE BEST AS TO THE QUALITY AND THE TECH. PRODUCTION PARAMETERS. INCREASING THE AL SUB2 O SUB3 CONTENT IN THE GLASS TO 7.5PERCENT AND HIGHER RESULTED IN INCREASED FOAMING. FOR THE 6H COMPN. THE MAX. FOAMING TEMP. WAS 830DEGREES. ALL OF THE COMPS. TESTED ARE SUITABLE FOR THE PREPN. OF OFAM GLASS BY THE POWDER METHOD. THE PRINCIPAL ADVANTAGE OF THESE COMPS. IS THAT THEY REQUIRE LESS CALCINED SODA THAN THE COMPS. HERETOFORE USED. THEIR COM. USE THUS WILL NOT ONLY SOLVE SEVERAL TECH. PROBLEMS, BUT WILL BE MORE ECONOMICAL. FACILITY: MINSK. GOS. NAUCH. ISSLEO. INST. STROIT. METER., MINSK, USSR.

UNCLASSIFIED

P.N. PILGANCHUK

AA0044234

UR 0482

14

Soviet Inventions Illustrated, Section II Electrical, Derwent,

243680 CABLE LAYING MACHINE digs trenches for cables along an old cable. A track laying motor vehicle pulls a plough. The coupling between the plough and the towing motor is pneumatic and it is controlled by radio signals. The level and the direction of ploughing are determined by the relative position of the plough to the cable.

2/70

23.3.68 as 1228413/29-14. YA.I. MARCHEVSKI et al (3.10.69)
Bul 17/14.5.69. Class 21c. Int.Cl. H 02g.

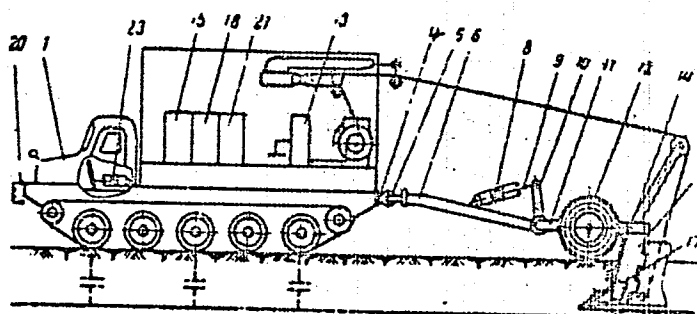
AUTHORS: Marchevskiy, Ya. I., Furto, G. S., Fishgal, S. I.,
Balaban, A. S., Pil'ganchuk, P. N., Imerali, V. B., Stepanenko,
L. K., Parkhomenko, A. I., Min'kovskaya, S. M., Voznesenskiy, I. A.,
Vishnyakov, I. Ye., Zinoveyev, A. I., Razumovskiy, O. V., Khrulev,
V. V., Politova, A. Ye., Khavzeruk, Ye. M., Smirnov, V. I.,
Malakhova, V. M.

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Acc. Nr:

AT0045331

Abstracting Service: 6/70
INTERNAT. AEROSPACE ABST.

Ref. Code:

UR0441

P

A70-23392 # On accuracy of electronogram measuring by means of comparator (Pro tochnist' vimiruvannia elektronogram za depomogoiu komparatora). O. M. Piliankevich and G. K. Abramian (Akademia Nauk Ukrains'koi RSR, Institut Problem Materialoznavstva, Kiev, Ukrainian SSR). *Akademiia Nauk Ukrains'koi RSR, Dopovidi, Seriya A-Fiziko-Tekhnichni i Matematichni Nauki*, vol. 32, Jan. 1970, p. 72-75, in Ukrainian.

The factors are analyzed affecting the accuracy of measuring the electronograms of polycrystalline samples by means of comparator. The analysis was carried out by means of the mathematical statistic methods. It is shown that the dispersion, characterizing an accuracy of measuring is directly proportional to the width of the measured diffraction line and inversely proportional to its contrast. (Author)

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1/2 042 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--MECHANICAL PROPERTIES OF SHEET MARTENSITIC AGING STEEL N18K9M5T -U-

AUTHOR--BERESNEV, G.A., PILIKINA, L.G., KATAYEV, YU.I.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2), 60-1

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MECHANICAL PROPERTY, SHEET METAL, METAL AGING, MARTENSITIC
STEEL, ALLOY DESIGNATION, NICKEL STEEL, COBALT STEEL, MOLYBDENUM STEEL,
TITANIUM STEEL, METAL CRACKING, IMPACT TEST, HIGH STRENGTH STEEL, CRACK
PROPAGATION/(U)MS200 NICKEL COBALT MOLYBDENUM, (U)N18K9M5T NICKEL COBALT
MOLYBDENUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1293

STEP NO--UR/0129/70/000/002/0050/0061

CIRC ACCESSION NO--AP0106074

UNCLASSIFIED

2/2 042

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106074

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

ABSTRACT. COMPARATIVE TESTS WERE MADE ON 2 MM SHEETS OF HIGH STRENGTH MARTENSITIC AGED N18K9M5T (MS-200) AND HIGH STRENGTH STEELS WITH 0.30 AND 0.43DEGREESC. VIBRATORY TESTS WERE MADE ON NOTCHED IMPACT SPECIMENS WITH CRACKS ALONG ONE CUT AND ON TENSILE SPECIMENS WITH SURFACE CRACKS. RESISTANCE TO CRACK PROPAGATION IS A DETG. FACTOR IN THE REALIZATION OF HIGH STRENGTH STEELS IN RIGID CONDITIONS OF LOADING. SHEETS OF HIGH STRENGTH MARTENSITIC AGED N18K9M5T STEEL, DISPLAYING HIGH STRENGTH AND PLASTICITY, ARE RECOMMENDED FOR MATERIALS OPERATING UNDER RIGID LOADING CONDITIONS.

UNCLASSIFIED

USSR

UDC 575.591

PILINSKAYA M. A., All-Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymers, and Plastics, Ministry of Health USSR, Kiev

"Cytogenetic Effect of the Fungicide Ziram in Cultured Human Lymphocytes in Vitro"

Moscow, Genetika, No 6, 1971, pp 138-143

Abstract: Ziram (zinc dimethyldithiocarbamate) at a concentration of 0.3 $\mu\text{g/ml}$ killed all cultured lymphocytes obtained from healthy human donors but at much lower concentrations (0.003 and 0.006 $\mu\text{g/ml}$) it slowed or had no effect on mitosis. At the same time it induced chromosomal aberrations, the number increasing with the size of the dose. The aberrations were mostly of the chromatid type, suggesting preferential injury to chromosomes in the S and G_2 stages. The breaks caused by ziram were arranged in nonrandom order along the length of the chromosomes, mainly chromosome 2. These findings are consistent with the results of a karyological analysis of the blood of industrial workers handling the fungicide. Thus, the in vitro effects of ziram, especially at a concentration of 0.003 $\mu\text{g/ml}$, are very similar to those in vivo.

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