

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--IMPROVEMENT OF DIAGNOSTICITY OF FINITE AUTOMATON BY INTRODUCING
INBUILT CONTROL POINTS -U-
AUTHOR--(02)-BOGOMOLOV, A.M., GRUNSKIY, I.S. 6
COUNTRY OF INFO--USSR
SOURCE--AVTOMATIKA I TELEMEXHANIKA, 1970, NR 5, PP 183-188
DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--AUTOMATIC CONTROL SYSTEM, AUTOMATON, DATA PROCESSING

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0922 STEP NO--UR/0103/70/000/005/0183/0183
CIRC ACCESSION NO--AP0113757
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0113757

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ESTIMATIONS OF THE LENGTH OF THE SETTING EXPERIMENT FOR AN AUTOMATON WITH CONTROL POINTS ARE GIVEN A POSSIBLE CHANGE OF THE EXPERIMENT CHARACTER IS INVESTIGATED. THE PROBLEM OF DEFINING THE NECESSARY NUMBER OF CONTROL POINTS IS SOLVED SO THAT THE STATE OF AN AUTOMATON WITH CONTROL POINTS MAY BE RECOGNIZED BY THE REACTIONS ON ANY WORD OF A SET REGULAR EVENT WITH A SET DEGREE OF ACCURACY.

UNCLASSIFIED

14117-02-2611211

UDC 621.395.347

USSR

KOBLENTS, Ya. G., GRUSEVICH, S. I., KONOVSKIY, A. G., and
GORYACHEVA, L. I.

"Fast-Acting Selective Mixers"

Moscow, Elektrosvyaz', No. 7, 1971, pp 30-35

Abstract: The mixers discussed in this article refer to the circuits used in automatic telephone lines of the decade type. They can be made to operate speedily through the use of quasi-electronic techniques, semiconductor devices and hercons (hermetically sealed contacts). With such instrumentation, the lines are better utilized and there is little delay in establishing contacts. This article presents the basic technical data of such mixing circuits, indicates the connections and switching procedures, and explains their operation with the assistance of block and switching diagrams. Fast-acting selective mixer equipment has proved its worth under test conditions in the telephone lines between Leningrad and Moscow. It is asserted that, in addition to using fast-acting mixers, existing lines should be modified to improve the efficiency of individual operators' equipment. In the information center of the Leningrad lines, for example, two racks of the fast-acting mixer circuits have improved the uniformity of calls on the operators with a 10% increase in information supplied.

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USSR

UDC 612.822.2-06:612.821.7

GRUSHCHENKO, T. S., and DEMIN, N. N., Laboratory of Functional Neurochemistry, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR, Leningrad

"Biogenic Amine Mediators and Proteinase Activity in Various Portions of Rat Brain During Normal Sleep and Sleep Without the Paradoxical Phase"

Moscow, Voprosy Meditsinskoy Khimii, Vol 19, No 2, Mar/Apr 73, pp 181-186

Abstract: Reserpine given in an intraperitoneal dose of 5 mg/kg does not change the activity of neutral and acid proteinases in the gray and white matter of the hemispheres, brain stem, and cerebellum of rats. During natural sleep, proteolytic activity decreases in the hemispheres and mesencephalon but increases in the cerebellum. After 24 hrs of deprivation of the paradoxical phase of sleep (PPS), inhibition of proteinases in the hemisphere and mesencephalon is more pronounced, while in the cerebellum the activity of neutral proteinases is increased and that of acid proteinases decreased. Twenty-four hrs after administration of nialamide (50 mg/kg), acid proteinases are activated in all portions of the brain, while neutral proteinases are also activated in the hemispheres. In animals sleeping after nialamide injection, acid proteinase activity remains high, and neutral proteinase activity also increases in the mesencephalon and cerebellum. After deprivation of the PPS, proteinase

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GRUSHCHENKO, T. S. and DEMIN, N. N., Voprosy Meditsinskoy Khimii, Vol 19, No 2, Mar/Apr 73, pp 181-186

activity is just as elevated as during normal sleep, while the activity of neutral proteinases in the white matter of the hemispheres is somewhat reduced. Accumulation of endogenous acetylcholine after administration of armin does not change proteinase activity during wakefulness and natural sleep but reduces it somewhat in the mesencephalon after deprivation of the PPS. In vitro, in a concentration of 10^{-5} , acetylcholine affects neither acid nor neutral proteinase activity. The changes in proteinase activity taking place in the various portions of the rat brain during normal and disturbed sleep are modified by altered concentration of endogenous catecholamines and serotonin.

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UDC: 51:801

USSR

GRUSHETSKIY, V. V.

"Grammatical Structures"

Novosibirsk, Sistemnoye i teor. programmirovaniye--sbornik (Systems and Theoretical Programming--collection of works), 1972, pp 216-235 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V737 by A. Maslov)

Translation: A grammatical structure is the term given by the author to a syntactic structure (see preceding abstract) into which means have been introduced for distinguishing semantic concepts (i. e. a syntactic structure with a tag). A change is possible in the initial syntactic structure for a stationary tag. Criteria are considered for the effectiveness of the selected tag and the method of revealing semantic indefiniteness. It is proposed that lexical analysis be introduced into the syntactic structure.

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F. Mathematical Problems of Semiotics

UDC: 51:801

USSR

GRUSHETSKIY, V. V.

"Syntactic Structures"

Novosibirsk, Sistemnoye i teor. programirovaniye--sbornik (Systems and Theoretical Programming--collection of works), 1972, pp 185-215 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V736 by A. Maslov)

Translation: The method of syntactic analysis using the syntactic structures described below was proposed by the author for the BETA translator. This paper discusses certain questions in the study of syntactic structures. Designation of a language as a set of circuits of an oriented graph with marked edges and vertices is considered. The edges of the graph can be marked by a sequence of operators on memory elements (magazines or queues). Each vertex is marked by an internal or external predicate. The external predicate with respect to the next input symbol determines the direction of motion (i. e. singles out the edge departing from a vertex). The internal predicate determines the direction of motion by using some memory element. During motion along an edge, the sequence of operators transcribed in this element is executed. There is

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USSR

GRUSHETSKIY, V. V., Sistemnoye i teor. programirovaniye, 1972, pp 185-215

an initial vertex, and a final vertex from which edges cannot depart. The sequences of input symbols used by the external predicates in passing from the initial to the final vertex form language chains. This designation of language is called a syntactic structure.

The utility of syntactic structures is explained. The place of syntactic structures in Chomsky's classification is considered. There is an error in the description of the classification. It is erroneously stated that "automaton languages fit entirely into syntactic structures".

The paper raises several methodologically ungrounded problems. The "antisymmetry" of the class of languages recognized with the use of one line, and of the class of context-free languages is doubtful since a Turing machine can be modeled on a device of the first type. The use of syntactic structures for real-time computation is inconvenient since the internal predicates do not have time for operation in this case.

Known methods of optimization are considered as applicable to syntactic structures.

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GRUSHIN, N. N.

Aerological Radiosonde

This article briefly describes the new RKZ-5-2 aerological radiosonde. In contrast to the RKZ-2 aerological radiosonde used in network observations, in the RKZ-5-2 radiosonde the temperature and humidity measurement frequencies are reduced by approximately half. The pedestal frequency is 1000 cps. The duration of the meteopauses varies from 250u sec to half their repetition rate. The RKZ-5-2 radiosonde uses the same temperature unit as in the RKZ-2 network radiosonde. The switching device is an electromechanical commutator with a miniaturized electric motor. Tests of the RKZ-5-2 radiosonde in combination with the "Metacrit-2" radar were very encouraging.

(Abstract: "RKZ-5-2 Aerological Radiosonde," by N. N. Grushin, A. E. Kuzenkov, and N. A. Kuz'nichanskaya, Moscow, Trudy Tsentral'noy Aerologicheskoy Observatorii, No 102, 1971, pp 139-140)

[From: Moscow, Referativnyy Zhurnal, Geofizika, Svodnyy Tom, No 10, 1971, 10B41]

JPRS 57277 - 9 -
29 NOV 71

UDC 621.374.5(089.8)

USSR

GRISHIN, S.I., LJENTAZ, A.S.

"Converter Of Electrical Pulses"

USSR Author's Certificate No 306556, filed 22 Sept 69, published 5 Aug 71
(from RZh: Radiotekhnika, No 2, Feb 72, Abstract No 2G246P)

Translation: A pulse converter is proposed which contains an integrating resistance-capacitance chain at the input, a switching semiconductor diode which forms, together with the load, the discharge circuit of the capacitor of the integrating chain, and a semiconductor diode connected in series with the load. In order to avoid multiple appearance of a signal at the converter output, with entry of one pulse at its input, a second integrating resistance-capacitance chain is connected to the converter input, the capacitor of which is connected in parallel with the switching semiconductor diode. A limiting effective resistance is connected into the discharge circuit of the capacitor.

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SEC 527.9

USSR

VISHIK, M. I. and CRUSHIN, V. V., Moscow State University imeni M. V. Lomonosov

"Elliptical Boundary Value Problems Degenerating at a Submanifold of the Boundary"

Moscow, Doklady Akademii Nauk SSSR, Vol. 190, No. 2, 1970, pp 255-258

Abstract: The system of linear differential equations

$$A(x, D)u(x) = f(x), \quad x = (x_1, \dots, x_{n+1}), \quad (1)$$

of order μ and dimension $q \times q$ with coefficients from $C^\infty(\Omega)$ is considered in the bounded region $\Omega \subset R^{n+1}$ with the smooth boundary Γ . Let the following boundary condition be imposed on Γ

$$\gamma B u = g(x') \quad (2)$$

where B is a rectangular matrix of dimension $l \times q$, consisting of differential operators of the order r ; γ is an operator restricting the functions at Γ . It is assumed that the operator $A(x, D)$ is elliptical in Ω and at

USSR

VISHIK, M. I. and GRUSHIN, V. V., Doklady Akademii Nauk SSSR, Vol. 190, No. 2, 1976, pp 255-258

all points Γ/Δ , where Δ is a smooth submanifold of dimension $n - 1$ on Γ and satisfies the condition of ellipticity of the problem (1), (2). Conditions are proved showing that additional conditions are required for this problem to be solvable. Functional spaces are found in which the operator in the problem is Noetherian.

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1/2 008 UNCLASSIFIED PROCESSING DATE--18SEP70
 TITLE--ELLIPTICAL BOUNDARY VALUE PROBLEMS DEGENERATING AT A SUBMANIFOLD OF
 THE BOUNDARY -U-
 AUTHOR-(02)-VISHIK, M.I., GRUSHIN, V.V. 6
 COUNTRY OF INFO--USSR
 SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL. 190, NO 2, PP 255-258
 DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES
 TOPIC TAGS--BOUNDARY VALUE PROBLEM, LINEAR DIFFERENTIAL EQUATION,
 DIFFERENTIAL OPERATOR, ELLIPTIC FUNCTION, MATHEMATIC SPACE, MATHEMATIC
 DEGENERACY

CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REF/FRAME--1980/0505 STEP NO--UR/0020/70/190/002/0255/0258
 CIRC ACCESSION NO--AT0048749
 UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0048749
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE SYSTEM OF LINEAR DIFFERENTIAL EQUATIONS $A(x, D)U(x)$ EQUALS $F(x)$, x EQUALS $(x_{SUB1}, \dots, x_{SUBN}$ POSITIVE) OF ORDER μ AND DIMENSION Q TIMES Q WITH COEFFICIENTS FROM C PRIMEINFINITY (Ω) IS CONSIDERED IN THE BOUNDED REGION Ω OR PRIMEINFINITY WITH THE SMOOTH BOUNDARY Γ . LET THE FOLLOWING BOUNDARY CONDITION BE IMPOSED ON Γ , $\Gamma \text{ GAMMA} \text{ B} \text{ U} \text{ EQUALS} \text{ G}(\text{XPRIME})$ WHERE B IS A RECTANGULAR MATRIX OF DIMENSION L TIMES Q , CONSISTING OF DIFFERENTIAL OPERATORS OF THE ORDER R ; Γ IS AN OPERATOR RESTRICTING FUNCTIONS AT Γ . IT IS ASSUMED THAT THE OPERATOR $A(x, D)$ IS ELLIPTICAL IN Ω AND AT ALL POINTS $\Gamma - \Delta$, WHERE Δ IS A SMOOTH SURMANIFOLD OF DIMENSION $N-L$ ON T AND SATISFIES THE CONDITION OF ELLIPTICITY OF THE PROBLEM (1), (2). CONDITIONS ARE PROVED SHOWING THAT ADDITIONAL CONDITIONS ARE REQUIRED FOR THIS PROBLEM TO BE SOLVABLE. FUNCTIONAL SPACES ARE FOUND IN WHICH THE OPERATOR IN THE PROBLEM IS NOETHERIAN.

Epidemiology

USSR

UDC 616.988.75-06:616.988.5]-053.8-036

ALEKSEYEVA, A. A., KETILADZE, Ye. S., KNYAZEVA, L. D., KRYLOV, V. F.,
GRUSHINSKAYA, I. A., ZHILINA, N. N., and STAKHANOVA, V. M., Clinical Department,
Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR
on the base of Clinical Infectious Disease Hospital No 82, Moscow

"The Course of Mixed Influenza-Adenoviral Infection in Adults"

Moscow, Klinicheskaya Meditsina, No 1, 1973, pp 101-105

Abstract: Of 1055 patients, age 16 to 78 admitted to the authors' hospital with respiratory symptoms during the 1969 and 1970 influenza A2-Hongkong epidemics, 158 (15%) were diagnosed after physical examination and laboratory tests as having a mixed influenza-adenoviral infection. About one-third of these had the clinical symptoms of adenoviral infection (toxicosis, headache, head cold, pain in the throat, cough, pharyngitis) along with the usual symptoms of influenza. In the other two-thirds, the disease proceeded asymptotically in the form of a virus carrier state or subclinically. The average duration of the above symptoms was much longer than in those suffering from influenza or adenoviral infection alone; pharyngitis persisted the longest. Systematic follow-up (2 years) of the patients with chronic adenoviral infection exacerbated by influenza confirmed the continued presence of adenoviruses even though the individuals felt well and exhibited no signs of inflammation of the respiratory tract.

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1/2 010 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--GRAVITY DETERMINATIONS IN ANTARCTICA -U-
AUTHOR--GRUSHINSKIY, N.P.
COUNTRY OF INFO--USSR, ANTARCTICA
SOURCE--GEOFIZICHESKIY BYULLETen', MOSCOW, 1970, NR 21, PP 18-39
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--GEOPHYSIC EXPEDITION, ANTARCTIC GEOLOGY, POLAR AREA, CATALOG,
GRAVITY SURVEY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAmE--1986/1295 STEP NO--UR/0000/70/000/021/0018/0039
CIRC ACCESSION NO--AP0103177
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103177

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS A CATALOGUE OF GRAVIMETRICAL POINTS OBTAINED BY THE GRAVIMETRICAL PARTY OF THE STERNBERG STATE ASTRONOMICAL INSTITUTE DURING THE NINE ANTARCTIC EXPEDITIONS OF THE USSR ACADEMY OF SCIENCES. THE POINTS ARE LOCATED MAINLY IN THE ANTARCTIC SEAS AND ON THE ANTARCTIC CONTINENT. PART OF THEM IS DETERMINED IN THE OCEAN EN ROUTE OF THE SHIP. THE PAPER GIVES A BRIEF DESCRIPTION OF THE EXPEDITIONS, AS WELL AS THE EVALUATIONS OF GRAVITY VALUES INCLUDED IN THE CATALOGUE.

UNCLASSIFIED

GRUSHKO, G. S.

JPKS 53647
21 JULY 1991

CERTAIN GENERALIZATIONS IN A MATHEMATICAL MODEL OF VISION

[Article by G.S. Grushko, Khar'kov, Problema Blonki, Respublikan-
skiy Nauchno-Issledovatel'skiy Tekhnicheskii Zhurnal, Russian, No 7, 1970,
pp 31-32]

In the report by Yu.P. Shabanov-Kushnarenko, V.L. Rvacher
and A.G. Murashko titled "Mathematical Model of Vision" ("Tekhnika"
Publishing House, Kiev, 1966), the authors analyze a mathematical
model of vision.

The equation derived has the following form:

$$\frac{dS}{dt} = S \left(\frac{aI}{aI + b} \right) - \beta + kE, \tag{1}$$

where S = brilliance of optical pattern, B = brilliance of visual
sensation, a = coefficient of visual inertia, b = coefficient of
sighting irradiation, and k = gain factor. Coefficients a, b and
k are constants.

Equation (1) is a heat conduction equation for a homogen-
ous medium with a constant heat conduction factor.

Moreover, in the same report [1], it is indicated that par-
ameter a of the visual model can be considered constant only at
fairly high levels of brightness. However, if the brightness of
the visual pattern varies within wide limits, a will be a variable.
The b-value is also a variable.

Let us consider a heat conduction equation in the case
when coefficients a, b and k in Eq. (1) are variables.

GRUSHKOV, S. A.

5 PMS 59808
6 73

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K11-9. EFFECT OF THE SUBSTRATE ORIENTATION ON THE GROWTH AND PROPERTIES OF EPITAXIAL LAYERS

Article by S. A. Grushkov, F. F. Kazanmly, V. F. Kovalenko, I. Ye. Haronchuk, B. P. Masenko, V. I. Orlov, A. N. Tuzavsky, Svetlovodsk, Novosibirsk, III
Zhurnal Prikladnoy Fiziki, I. Zhurnal Prikladnoy Fiziki Krasnodar I. Plensk, Krasnodar, 1971, June 1972, p 1011

The epitaxial layers of solid solutions of $Al_{1-x}Ga_xAs_{1-x}As_x$ were grown from a solution in a gallium melt in a hydrogen flux on gallium arsenide plates with an orientation of 100, 111B, 111A and on the 100 planes disoriented to 111B by 3° and 10°.

The effect of the orientation plane on the growth rate, morphology, electrical parameters and photoluminescence intensity was investigated. The layers were improved with respect to morphology were obtained on singular planes. The distribution of the composition in the $Al_{1-x}Ga_xAs_{1-x}As_x$ layers with respect to thickness is observed as a function of the substrate orientation plane. The most uniform layers were obtained for growth on substrates oriented in the 111B plane. In pure layers of $Al_{1-x}Ga_xAs_{1-x}As_x$ with a concentration of less than 3-10% cm^{-3} , a deep level is observed (for example, for $x = 0.3$ the activation energy of this level $E = 0.12$ electron volts). On the basis of the layers of solid solutions of $Al_{1-x}Ga_xAs_{1-x}As_x$ obtained, like diodes were manufactured with a brightness to 1,000 nc for a current of 10 millamps.

1/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--NITRATION OF SOME LIGNIN MODEL COMPOUNDS WITH A NITRIC ACID
SOLUTION IN ETHANOL -U-
AUTHOR-(02)-GRUSHNIKOV, O.P., SHORYGINA, N.N.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 645-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--NITRATION, LIGNIN, ALDEHYDE, ALCOHOL, METHANOL, METHYL ETHER,
BENZENE DERIVATIVE, ORGANIC NITRO COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0924 STEP NO--UR/0062/70/000/003/0645/0649
CIRC ACCESSION NO--AP0134653

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2/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0134653
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VANILLIN AND ETMOBR GAVE
GUAIACYLETHYLCARBINOL (I), M. 85-6DEGREES. VERATRALDEHYDE SIMILARLY
GAVE VERATRYLETHYLCARBINOL (II), B SUB2 146DEGREES, WHICH WITH MEOH-HCL
GAVE THE ME ETHER, B SUB0.07 74DEGREES. I ME ETHER, B SUB0.5 96DEGREES,
WAS PREPD. SIMILARLY. NITRATION OF THESE CARBINOLS WITH HNO SUB3 (D.
1.4) IN 96PERCENT ETOH RESULTED IN ENTRY OF NO SUB2 GROUPS INTO THE
BENZENE RING AND PARTIAL ETHYLATION OF THE CARBINOL GROUPS. TREATMENT
OF THE ABOVE COMPS. WITH HNO SUB3 AS WELL AS THEIR NITRATION WITH HNO
SUB3 IN ANHYD. MEDIA RESULTED IN ELECTROPHILIC SUBSTITUTION OF NO SUB2
INTO THE SIDE CHAIN, ESP. PRONOUNCED FOR THE SUBSTRATES WITH A FREE OH
GROUP. THIS REACTION IS SUPPRESSED BY METHYLATION, AND LEADS TO
DESTRUCTION OF LIGNIN NOT ONLY IN ANHYD. MEDIA, BUT TO SOME DEGREE IN
ETOH. THE FOLLOWING WERE ISOLATED AS REACTION PRODUCTS: II GAVE
60PERCENT 6-NITRO DERIV. OF II ET ETHER, A RED SIRUP, AND 10PERCENT
3,4,(MEO) SUB2 C SUB6 H SUB3 NO SUB2 (III) CONTG. 9PERCENT 6-NITRO
DERIV. OF II, M. 87-8DEGREES. I GAVE 8PERCENT 4,6,DINITROGUAIACOL, M.
121-2DEGREES. II ME ETHER GAVE 3PERCENT III AND 66PERCENT IIA ME ETHER,
A SIRUP. I ME ETHER GAVE 13PERCENT 4,6,DINITROGUAIACOL, M.
121-2DEGREES. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO,
MOSCOW, USSR.

UNCLASSIFIED

Computers: Analog

USSR

BURTOV, A. I., GRUSHVITSKIY, R. I., METTER, E. Ya., PETROV, V. A., PLATONOV, V. V., SAVUTKIN, V. V., VEDESHENKOV, V. A., VOLKOV, A. F., ZENKIN, V. D., LIKHONINSKIY, V. S., and SOROKIN, G. K.

"Computer Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 27, 1972, p 162, No (11) 351216

Translation: This patent describes a computing device containing resolving modules with decoupling cells at the power supply inputs. It also has a control block connected to the inputs of a switching block and an efficiency indicator. Every output of the switching block is connected to the control input of one of the decoupling cells, thus improving the reliability of the device.

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Acc. Nr: AP0036820 6

Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i
Immunobiologii, 1970, Nr 1, pp. 70-75

THE CAPACITY OF MACROPHAGES TO PROVOKE
THE ANTIBODY SYNTHESIS IN THE LYMPHOCYTE CULTURE
IN VIVO

Morgunov, I. N.; Orgel', M. Ya.; Grutman, M. I.

The authors studied the role of macrophages of peritoneal exudate of rats in induction of formation of antibodies against sheep erythrocytes or to diphtheritic toxoid under conditions of diffusion chambers present in the irradiated recipients. A conclusion was drawn that marked primary and secondary response in the lymphocyte culture in vivo required macrophage treatment of the antigen. When only the antigen was added to the lymphocyte culture in vivo, the antibody production proved to be less than on addition of macrophages which came in contact with the antigens before.

D.N.

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REEL/FRA
19721737

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE INFLUENCE OF AURANTINE ON THE PHAGOCYTOSIS AND INDUCTION OF
SYNTHESIS OF HEMOLUSINS -U-
AUTHOR-(02)-GRUTMAN, M.I., ORGEL, M.YA.
COUNTRY OF INFO--USSR
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,
NR 6, PP 69-71
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MACROPHAGE, PERITONEUM, ANTIGEN, PHAGOCYTOSIS, SELECTIVE DRUG
EFFECT, INHIBITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY KEEL/FRAME--3004/0689 STEP NO--UR/0219/70/049/006/0069/0071
CIRC ACCESSION NO--AP0131288
UNCLASSIFIED

272 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131238

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MACROPHAGES OF THE PERITONEAL EXUDATE OF NORMAL AND IMMUNE RATS IN VITRO CULTIVATION WITH SHEEP ERYTHROCYTES WERE INTRODUCED TO THE SAME ANIMALS FROM WHOM THEY WERE TAKEN. HEMOLYSINS APPEARED IN THE BLOOD OF DONORS RECIPIENTS. MACROPHAGES, PRELIMINARILY INCUBATED WITH ANTIGEN, DID NOT INDUCE THE FORMATION OF HEMOLYSINS AFTER ADMINISTRATION TO IRRADIATED (550 R) AUTOLOGOUS RECIPIENTS. AURANTINE (10 MU G-ML) INHIBITED THE ANTIGEN PHAGOCYTOSIS IN VITRO AND SUPPRESSED THE INDUCTION CAPACITY OF MACROPHAGES IN VIVO. FACILITY: KIEV INSTITUTE OF EPIDEMIOLOGY, MICROBIOLOGY AND PARASITOLOGY.

UNCLASSIFIED

USSR

UDC 612.53+612.74

BERNSHTEYN, V. A., SINAYSKIY, M. M., GRUYEVA, L. G., LEVITINA, T. A., and LAZUTINA, T. P., Chair of Physiology, Extension of the Smolensk Institute of Physical Culture, Malakhovka, Moskovskaya Oblast

"Some Aspects of Thermoregulation During Muscle Work"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 5, 1973, pp 819-827

Abstract: The investigation was performed on 12 athletic students pedaling a bicycle ergometer at a work load of 15 kgm/min/kg body weight for 30 min. At this rate of work, heart rate increases to a maximum of 174 beats/min, pulmonary ventilation to 730 ml/kg/min, and oxygen consumption to 30 ml/kg/min. During the so-called controlled hyperthermia which develops under minimum to moderate thermoinsulation, deep body temperature (measured in the ear near the tympanic membrane) rises uniformly from a control of 37.0°C to 39.4°C. However, excessive thermoinsulation (wearing a thick jacket) causes an additional uncontrolled rise in deep body temperature to a peak of 40.0°C. Skin temperature on the forehead rapidly increases during the first 9 minutes from 35.5 to 39.4°C, to exceed deep body temperature by 1.2°C, but falls subsequently to 37.7°C at the 30th minute. Sweating on the forehead begins with the local rise in temperature and then becomes proportional to deep body temperature and

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USSR

BERNSHTEYN, V. A., et al., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 5, 1973, pp 819-827

thermoinsulation (from 0.2 mg/cm²/min in 3 minutes to 4.9 mg/cm²/min in 30 min). Even though not all the sweat evaporates, it is concluded that in steady-state work done with light thermoinsulation at a normal room temperature, about 3/5 of the total heat loss is due to evaporation of sweat.

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Diagnosis

USSR

UDC 616.981.51-078.73

SHLYAKHOV, E. N., SHVARTS, S. A., GRUZ, Ye. V., and KATKHANDOVA, T. M., Moldavian Institute of Hygiene and Epidemiology

"Immuno-Allergic Diagnosis of Anthrax in Man with Anthraxin"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 47, No 6, Jun 70, pp 79-83

Abstract: Data from 1,152 cases were evaluated in an effort to ascertain the rate of development and duration of skin-allergic reactions, the effectiveness of anthraxin tests in comparison with bacteriological studies, and the problem of whether the indices of anthraxin tests depend on the test periods or the beginning of a specific cure. It was found that with the anthraxin skin test, a diagnosis could be reliably confirmed 2.5 times more effectively than by the bacteriological method. Anthraxin skin tests are the only method of retrospective diagnosis of anthrax. In 93% to 73% of cases, it was possible to establish anthrax many years, or sometimes even decades, after its occurrence.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--IMMUNO ALLERGIC DIAGNOSIS OF ANTHRAX IN MAN WITH THE AID OF
ANTHRAXIN -U-
AUTHOR-(04)-SHLYAKHOV, E.N., SHVARTS, S.A., GRUZ, YE.V., KATKANOVA, T.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6,
PP 79-83
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ANTHRAX, MAN, SKIN TEST, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0409

STEP NO--UR/0016/70/000/006/0079/0083

CIRC ACCESSION NO--AP0126162

UNCLASSIFIED

2/2 012

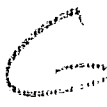
UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126162

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MANY YEAR EXPERIENCE IN THE APPLICATION OF ANTHRAXIN FOR THE DIAGNOSIS OF ANTHRAX IN THE SOVIET UNION AND ABROAD DEMONSTRATED ITS HIGH SPECIFICITY AND EFFICACY. WITH THE AID OF ANTHRAXIN SKIN TEST ANTHRAX DIAGNOSIS WAS RELIABLY CONFIRMED TWO AND A HALF TIMES MORE FREQUENTLY (IN 92PERCENT OF THE CASES) THAN BY BACTERIOLOGICAL EXAMINATION. AT PRESENT SKIN TEST WITH ANTHRAXIN IS THE ONLY METHOD WHICH PERMITS TO ESTABLISH RETROSPECTIVE DIAGNOSIS OF ANTHRAX MANY YEARS AFTER AN ATTACK OF THIS DISEASE (FROM 93 TO 73PERCENT OF THE CASES). EARLY SPECIFIC TREATMENT OF ANTHRAX REDUCED THE INDICES OF DAIGNOSTIC TESTS WITH ANTHRAXIN A LITTLE. FACILITY: MOLDAVSKIY INSTITUT GIGIYENY I EPIDEMIOLOGII.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP79
TITLE--ON PRINCIPLES OF AUTOMATIC CLASSIFICATION OF METEOROLOGICAL UNITS
-U-
AUTHOR--(02)-GRUZA, G.V., RANKOV, YE.YA. 
COUNTRY OF INFO--USSR
SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 2, PP 12-22
DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES
TOPIC TAGS--SYNOPTIC METEOROLOGY, WEATHER FORECAST

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/1224 STEP NO--UR/0050/70/000/002/0012/0022
CIRC ACCESSION NO--AP0103112
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

2/2 012

CIRC ACCESSION NO--AP0103112

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

ABSTRACT. THE TASK OF AUTOMATIC CLASSIFICATION OF SYNOPTIC PROCESSES AND METEOROLOGICAL FIELDS IN WEATHER PREDICTION PROBLEMS IS DISCUSSED. A PROGRAM OF IMPLEMENTING THE CLASSIFICATION OF METEOROLOGICAL UNITS ON A COMPUTER IS DESCRIBED. RESULTS ARE GIVEN OF A NUMERICAL EXPERIMENT ON CLASSIFYING FIELD SECTIONS OF 500 MB CHART OVER THE NORTHERN HEMISPHERE.

UNCLASSIFIED

USSR

UDC: 678.5.01.40.001.01.01.01.01

GOLOVKO, L. I., SHKUTANO, Y. A., YAKUBOVICH, S. V.

"Protection of Fiberglass Plastics by Polyurethane Coatings"

Kiev, Khimicheskaya Tekhnologiya, No 1(61), Jan/Feb 75, pp 2-10

Abstract: The authors investigate the feasibility of using polyurethane to improve the weather resistance and the durability of polyacrylonitrile reinforced with fiberglass. The paper gives the results of a study of the water and chemical resistance of hardened copolymers of an unsaturated diisocyanate with styrene, coated with polyurethane. PU-1 binder was used for the study (polydiethylcarbamoyl chloride chloride with styrene) with a diisocyanate PU-1 polyurethane lacquer. The coatings were applied with an airbrush in two layers to make a total thickness of 30-40 microns. The prepared specimens were kept in distilled water for 100-200 hours at 25°C. Losses of static tensile strength amounted to 41-50% for uncoated specimens and 3-10% for coated specimens. Loss of impact strength for uncoated samples was 75% after 100 hours, the corresponding loss for coated plastic was only 11%. The thickness of the protected plastic was 2-3% of the initial value at the end of the test. Results of mechanical and chemical resistance tests are given. 10 references are cited.

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GOLDBERG, S. D., et al. *Environmental Toxicology and Chemistry*, 10(1), 1991, pp 28-32

specimens from 1981 to 1984. The total coplanar PCBs in the water were greater relative to the effects of overall PCBs.

2/0

USSR

UDC 632.95.4/.5

RASKIN, M. S., USKOVA, L. A., and GRUZDEN, L. G.

"Investigation of the Activity of Herbicidal Mixtures"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 11 (121), 1973, pp 47-51

Abstract: Highest degree of conditional synergism was observed in the combination of diamate with 2M-4Kh or 2,4-D taken in ratios of 1:6 to 1:20. Diamet and diamet-D were effective against annual dicotyledonous weeds including those resistant to 2,4-D and 2M-4Kh. The optimal dose of herbicides for grain culture fields is 21.2 kg/hectare. Herbicidal activity of these preparations is almost identical, although diamet-D is somewhat more advantageous due to a simpler production technology and a much higher content of the active substance. Used at the optimal dose, diamet-D did not depress the growth of oats nor did it lower the yield of grain, its quality also remaining unaffected.

1/1

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--STUDY OF UV AND BLUE FLUORESCENCE ENHANCEMENT OF L FIBROBLASTS IN
VITRO AFTER X IRRADIATION -U-
AUTHOR-(04)-PROTSENKO, M.I., GANIN, A.F., GRUZDEV, A.D., MOSOLOV, A.N.
COUNTRY OF INFO--USSR
SOURCE--TSITOLOGIYA: 12: 214-19 FEB 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--TISSUE CULTURE, X RAY RADIATION BIOLOGIC EFFECT, CELL
PHYSIOLOGY, RADIATION DOSAGE, FLUORESCENCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1984 STEP NO--UR/9053/70/012/000/0214/0219
CIRC ACCESSION NO--AP0120627
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120627

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. L FIBROBLASTS WERE IRRADIATED WITH X RAYS (200 AND 400 RAD) AND AFTERWARDS CULTURED IN VITRO. UV AND VISIBLE BLUE FLUORESCENCES OF CELLS WERE MEASURED. A RAPID INCREASE OF BOTH TYPES OF FLUORESCENCE WAS FOUND REACHING ITS PEAK BY THE 3RD DAY; ON DAYS 15 TO 20 THIS LEVEL DECREASED TO THE ONES OF THE CONTROL VALUES.
FACILITY: MEDICAL INST., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC 615.779.9:612.696

YELIN, D. N., Col Med Ser and GRUZZEV, A. V., Lt Col Med Serv

"Toxic Effects of Preparations of the Streptomycin Series on Cochlear and Vestibular Functions"

Moscow, Voenno-Meditsinskiy Zhurnal, No 4, 1970, pp 82-83

Abstract: The deleterious effect of streptomycin preparations is known. Men in military service suffering from tuberculosis were given one gram daily of streptomycin, intramuscularly. Complaints of noise in the ears, dullness and dizziness appeared in some men, who had received 15-60 grams of streptomycin. More serious damage of the acoustic nerve usually occurred in older men. Caloric nystagmus tests showed that the vestibular apparatus was involved less frequently than the cochlear apparatus. Treatment was instituted on the first appearance of symptoms of intoxication. Streptomycin was discontinued. Patients were given a solution of ATP or MAP (myo-adenyl preparation), which has a similar metabolic role to ATP. The use of these products either completely removed or markedly diminished the toxic effects of streptomycin.

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USSR

UDC 621.791.3.01:669.14.018.44

GRUZDEV, B. L. and KOZLOV, Candidates of Technical Sciences, and VANGNITS, I. S., and SYRESKIN, V. A., Engineers, Ufa Aviation Institute imeni S. Ordzhonikidze

"Technology of Brazing Alloy ZhS6K with Braze VPr 11"

Moscow, Svarochnoye Proizvodstvo, No 2, Feb 74, pp 34-35

Abstract: Since alloy ZhS6K has unsatisfactory weldability, a study was made as to how well it can be brazed in a vacuum using braze alloy VPr 11. The effectiveness of diffusion interaction can be increased by increasing the time of the parts at the brazing temperature. However this brazing method cannot be recommended since undesirable structural transformations can occur in the base metal during an extended time at 1150° C which lowers strength properties. Moreover, long contact of the braze alloy with the alloy causes erosion of the alloy. These problems can be overcome by heat treating the braze joint at 1050° C. Best short-time strength can be achieved by heat treating at 1050° C for extended periods. Tests showed that seam metal strength, after heat treating for 2, 4, and 8 hours, was 30.4, 34.3, and 37.3 kgf/mm², respectively, as compared to 27.9 kgf/mm² for the non-heat 1/2

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USSR

GRUZDEV, B. L., and KOSLOV, et al., Svarochnoye Proizvodstvo, No 2, Feb 74,
pp 34-35

treated braze joint. Gap size between the parts being brazed was also
critical with the best results achieved for a gap dimension of 0.05-0.06
mm. Four figures, three bibliographic references.

2/2

UDC: 621.791.754

USSR

MAKAROV, V. N., Engineer, and GRUZDEV, B. L., Candidate of Technical Sciences

"The Effect of an External Magnetic Field on the Structure and Properties of Refractory Nickel Alloy Joints"

Kiev, Avtomaticheskaya Svarka, No 9, Sep 73, pp 72-73

Abstract: The authors study the effect of the electromagentic influence on the molten bath during welding. A series of specimens were welded at the Ufa Aviation Institute imeni S. Ordzhonikidze from the VZh98 and EI602 alloys with the aim of evaluating the effect of an external magnetic field on the structure and properties of joints. The welding was done on the ADVS-2 automaton with the IPP-300P power source. In order to set up the external magnetic field a coil was fixed to the torch nozzle. The coil is fed with constantly pulsating current. The coil had 2250 turns of ϕ 0.32 mm wire. The distance between the coil and the specimen was 10 mm. The welding was carried out with and without the magnetic field. Current had to be increased 15-20 percent with the magnetic field. The metallographic study showed that welding with a pulsating field of more than 3000 ampere-turns resulted in more disoriented and finer seam metal structure. The disorientation and the finer grains result in improving the mechanical properties of the joints. The improvements are explained by the formation of a structure with a lower density of defects in the crystal lattice.

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USSR

UDC 621.791.72.669.195.001.5

GRUZDEV, B. L., Candidate of Technical Sciences, KLADOV, YE. I., Engineer,
and BULGAKOV, I. YA., Engineer, Ufa Aviation Institute imeni Sergo Ordzhonikidze

"Some Features of Electron-Beam Welding of VT5-1 Alloy"

Moscow, Svarochnoye Proizvodstvo, No 2 (460), Feb 73, pp 19-21

Abstract: The advantages of electron-beam (EB) welding of VT5-1 alloy in vacuum, in comparison with manual argon-arc (AA) welding, are discussed. In EB welding, the part of initial and additional materials participating in the development of the joint decreases by 73 times and the content of hydrogen is 2.5 times lower than in AA welding. In a comparison of EB and AA thermal cycles, the volume of melting metal and the magnitude of the elastic-plastic deformation zone decreases considerably in EB welding. Mechanical test results demonstrate the much higher strength characteristics of EB welded joints. The application of EB welding for 10-11-mm-thick joints of VT5-1 titanium alloy is, from the standpoint of quality and economy, more expedient than AA welding. Four figures, four tables, five bibliographic references.

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USSR

UDC 632.95

PIL'MENSHEYN, I. D., EEZUGLYY, S. F., ROMANOVA, A. I., POTOLOVSKIY, L. A., and GRUZDEV, B. V.

"A New Emulsifier for Pesticides - Calcium Dodecylbenzolsulfonate Derived from Tetrameric Propylene"

V sb. Khim. sredstva zashchity rast. (Chemical Protection of Plants -- collection of works), No 2, Moscow, 1972, pp 145-150 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22K517 by I. Pil'menshteyn)

Translation: Calcium dodecylbenzolsulfonate (I) synthesized in the All-Union Sci-Res Institute of Petroleum Products derived from tetrameric propylene reduces the consumption of OP-7 [a wetting agent of the alkyl phenol-ethylene oxide type] 3- to 4-fold in emulsifying concentrations of pesticides. Introduction of I into the latter greatly improves their emulsifiability due to decreased interphasial tension at the water-oil boundary.

1/1

UDC 632.954

USSR

GRUZDEV, G. S., and POPOV, V. G., Agricultural Academy imeni K. A. Timiryazev
"Combination of Chemical and Agrotechnical Methods in the Control of Acroption
Repens D.C."

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 12, 1972, pp 37-42

Abstract: Banvel-D/active ingredient dimethylamine salt of 2-methoxy-3,6-dichlorobenzoic acid/and tordon-22k (a derivative of 4-amino-3,5,6-trichloropicolinic acid) are effective herbicides in the control of persistent perennial weeds such as gorchak polzuchiy (Acroption repens D. C.). However, their application in optimum doses for a herbicidal effect damages crops. It was established in experiments on waste land overgrown with A. repens that spraying with tordon-22k (1.0-3.0 kg/ha), banvel-D (5.0-10.0 kg/ha), or a mixture of tordon-22k +banvel-D (0.5 + 10.0 kg/ha; 1.0 + 5.0 kg/ha), when followed by plowing to a depth of 30 cm, suppressed the growth of A. repens for 9-11 mos and 24 mos on planting of corn and winter wheat, respectively. The root system of the weed perished entirely on application of the mixtures of the two herbicides. Banvel-D (5.0-10.0 kg/ha), tordon-22k (0.5-1.0 kg/ha), or a mixture of tordon-22k (0.5 kg/ha) and banvel-D (10.0 kg/ha) did not lower the yield of the green mass of corn planted 8 mos after application of the herbicides. Tordon-22k
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USSR

GRUZDEV, G. S. and POPOV, V. G., Khimiya v Sel'skom Khozyaystve, Vol 10, No 12, 1972, pp 37-42

(2.0-3.0 kg/ha) lowered the yields of the green mass of corn and of the grains of winter wheat. Tordon-22k (0.5 kg/ha) or banvel-D (5.0 - 10.0 kg/ha) did not reduce the yield of winter wheat planted 1 yr after their application. The crops of corn and wheat planted 8 and 12 mos, respectively, after application of tordon-22k (0.5 kg/ha) or banvel-D (5.0-10.0 kg/ha) did not contain residues of the herbicides. On spraying of tordon-22k in amounts $\gg 0.5$ kg/ha, its residual content in the crops was considerable.

2/2

Materials

UDC 621.039

USSR

KOT, A. A., Doctor of Technical Sciences, GRUZDEV, N. I., SHCHAPOV, G. A.,
TIPIKIN, S. A., and BOGUSLAVSKIY, V. B., Engineers

"Study of the Radiolytic Processes in the Loop Water of a Reactor"

Teploenergetika, No 1, January 1972, pp 31-34

Abstract: Investigations were conducted at the second unit of the BAES (Beloyarsk Atomic Electric Power Plant) with respect to a study of the radiolysis of water, the extent of the radiolytic decomposition of ammonia which is dosed into the feed water of the reactor, and the formation of nitrates and nitrites in the area of the reactor. Methods were studied for suppression of the radiolysis of the water and removal of the radiolytic oxygen. The experiments were conducted during a change of the reactor power from 130 to 360 megawatts (thermal) which corresponds to the electrical power of the unit of 40-130 megawatts. The vapor content in the evaporative channels of the reactor remained constant independently of the reactor power and was equal to 15.4--16.6 percent. 4 fig. 1 tab. 2 ref.

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1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ISOELECTRONIC SERIES OF SULFUR S I CU XIV. 3P PRIME4 3P PRIME3 4S
TRANSITION. ENERGY LEVELS, WAVELENGTHS, AND OSCILLATOR STRENGTHS -U-
AUTHOR--GRUZDEV, P.F.
COUNTRY OF INFO--USSR
SOURCE--OPT SPEKTROSK. 1970, 28(4), 615-21
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SULFUR, ELECTRON STRUCTURE, COULOMB INTERACTION, CALCULATION,
ELECTRON RESONANCE, ELECTRON TRANSITION, OPTIC SPECTRUM, OSCILLATOR
STRENGTH
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1429 STEP NO--UR/0051/70/028/004/0615/0621
CIRC ACCESSION NO--AP0118418
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--300CT70

CIRC ACCESSION NO--AP0118418

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WITH THE AID OF A SEMIEMPIRICAL METHOD BASED ON THE SCHEME OF INTERMEDIATE BONDING AND THE COULOMB APPROXN., CALCNS. WERE CARRIED OUT OF THE WAVELENGTH AND OSCILLATOR STRENGTH OF THE LINES OF THE RESONANCE TRANSITION $3p \text{ PRIME}^4$ YIELDS $3p \text{ PRIME}^3 4s$ AND THE ENERGY LEVELS OF THE CONFIGURATIONS $3p \text{ PRIME}^4$ AND $3p \text{ PRIME}^3 4s$ IN THE SPECTRA OF THE ATOMS AND IONS OF THE ISOELECTRONIC SERIES S I CU XIV.

UNCLASSIFIED

USSR

UDC: 621.317.37

OSOKIN, V. I., BLEVOY, N. D., CHIRNIKOV, S. I., KAPOV, E. G., GIMZIN, S. V.

"A Microwave Pulse Power Meter"

Moscow, Obshchaya, Inzheneriya, Promyshlennyye Otrantsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 391899, Division G, filed 23 Mar 70, published 7 Mar 72, p 135

Translation: This Author's Certificate introduces a microwave pulse power meter which contains a balustric bridge, a detector and an amplifier. As a distinguishing feature of the patent, measurement accuracy is improved by feeding the signal simultaneously to the inputs of a phase multi-vibrator and a sine wave-tooth voltage oscillator. The output of the sine-tooth voltage oscillator is connected to the input of a memory unit. The output signal from the memory unit is sent to one of the inputs of a two-coil ratemeter, and the signal from the output of the balustric bridge is sent to the other input of the two-coil ratemeter. The output of the ratemeter is connected to the input of the detector. The output of the detector is connected to the input of the amplifier. The output of the amplifier is connected to the input of the oscilloscope.

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OSOKIN, V. I. et al., USSR Author's Certificate No 331325

through a pulse duration shaper, a frequency divider and a delay line. The second input of the flip-flop is connected to the output of the pulse duration shaper.

USSR

UDC: 537.74

GRUZDEV, S. V., DUBOVOY, N. D., KARPOV, R. G., MATYUKHIN, Yu. D., OSOKIN, V. I., and YUDINA, V. P.

"UHF Power Meter With Automatic Selection of the Measurement Limit"

Leningrad, Priborostroyeniye, No 1, 1972, pp 13-17

Abstract: Most UHF power meters of the self-balancing type, in which some of the measuring operations are automatic, have a manually operated method of setting the measurement limit. The authors, members of the Ryazan Radio Engineering Institute, have devised a method of automating that adjustment as well. Where the measurements are based on the method of replacing the UHF power by the varying frequency pulse power, and especially in digital readout instruments, this can be done fairly easily, as the authors demonstrate. A block diagram of the device is given together with an explanation of its operation. The essence of the system is a power-frequency converter for representing the output information in frequency form.

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USSR

UDC: 621.317.784.023(088.8)

OSOKIN, V. I., DUBOVOY, N. D., KARPOV, R. G., GRUZDEV, S. V., CHIBRIKOV,
S. I.

"An Automatic SHF Power Meter"

USSR Author's Certificate No 268519, filed 18 Nov 68, published 14 Aug 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A275 P)

Translation: This Author's Certificate introduces an automatic SHF power meter with double comparison which contains an automatically balancing thermistor bridge, a microwave cutoff switch and a power indication circuit. The proposed meter differs from conventional units in the fact that the rectifier input is connected to the bridge output, and the rectifier output is connected to one of the comparator inputs; the other comparator input is connected to the output of an integrator, and the comparator output is connected to the inputs of flip-flops; the output of a sawtooth voltage generator is connected to a thermistor and to a meter, resulting in increased speed and accuracy of measurement over a wide temperature range. E. L.

1/1

USSR

UDC: 621.317.784.023(088.8)

KARPOV, R. G., GRUZDEV, S. V., OSOKIN, V. I., DUBOVOY, N. D., KROTENKO, V. I.,
MAKSIMOV, Yu. N.

"An SHF Power Meter"

USSR Author's Certificate No 263006, filed 30 Apr 68, published 8 Jun 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A277 P)

Translation: This Author's Certificate introduces an SHF power meter which contains a self-balancing thermistor bridge with a selective amplifier in the self-balancing circuit, and a heater for the thermistor. As a distinguishing feature of the patent, measurement precision is improved by using a high-frequency oscillator as the thermistor heating source.

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C

USSR

UDC: 621.317.754

OSOKIN, V. I., DUBOVY, N. D., KARPOV, R. G., GRUZDEV, S. V., CHEBRINOV, S. I.

"An Automatic SHF Power Meter"

Moscow, Otkrytiya, Izobreteniya, Proryshlennyye Obraboty, Sovarnyye Izdeli, No 14, 1970, Author's Certificate No 268519, filed 16 Nov 68, p 4.

Abstract: This author's certificate introduces an automatic SHF power meter with double comparison. The unit contains an automatic-balance thermistor bridge, an SHF disconnect and a power indication circuit. As a distinguishing feature of the patent, measurement precision is improved by connecting the rectifier input to the bridge output and connecting the rectifier output to one of the comparator inputs, the other comparator input being connected to the output of an integrator. The comparator output is connected to flip-flop inputs. The output of the saw-tooth voltage generator is connected to a thermistor and a meter pointer.

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USSR

UDC 621.317.784.023(088.8)

KARPOV, R. G., GRUZDEV, S. V., FROLIN, M. I., OSOKIN, V. I., DUBOVOY, N. D.

"Superhigh Frequency Power Meter"

USSR Author's Certificate No 272400, Filed 29 Apr 68, Published 22 Sep 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A283P)

Translation: A superhigh frequency power meter comprising a self-balancing bolometric bridge with an oscillator in the autobalancing circuit is proposed. The proposed meter is distinguished by the fact that in order to improve the meter sensitivity a pulse oscillator with constant amplitude and regulatable repetition rate is used as the oscillator. Its modulation characteristic depends on the peak value of the control pulse amplitude.

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USSR

UDC: 621.317.784.023(088.8)

GRUZDEV, S. V., DUBOVGY, N. D., KARPOV, R. G., OSOKIN, V. I., CHIBRIKOV, S. I.

"A Pulse-Frequency SHF Power Meter"

USSR Author's Certificate No 270387, filed 8 Dec 68, published 24 Aug 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A334 P)

Translation: This Author's Certificate introduces a meter which contains a bolometric bridge, pulse amplifier, amplitude detector, variable-frequency oscillator and a subtraction device. As a distinguishing feature of the patent, a prf divider for the VFO pulse output is connected in the feedback circuit of the bridge resulting in an increase in meter sensitivity proportional to the division coefficient of the divider. b. l.

1/1

USSR

UDC: 621.317.78.023(086.8)

GRUZDEV, S. V., DUBOVOY, N. D., KARPOV, R. G., OSOKIN, V. I., CHIBRIKOV, S. I.

"An SHF Power Meter"

USSR Author's Certificate No 270886, filed 8 Dec 68, published 24 Aug 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A337 P)

Translation: An SHF power meter is proposed which contains a thermistor bridge, a selective amplifier and a power indication circuit. In order to improve measurement accuracy, provision is made in the proposed meter for automatic compensation of the error in comparison of the measured power with the substituting power increment. This is accomplished by using a storage integrator, a comparator and a sawtooth voltage generator to which a pointer indicator is connected at the instant when the sawtooth voltage reaches the balance level. E. L.

1/1

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USSR

UDC: 621.317.78

GRUZDEV, S. V., DUBOVOY, N. D., KARPOV, R. G., OSOKIN, V. I., CHIBRIKOV, S. I.

"An SHF Power Meter"

USSR Author's Certificate No 270888, filed 8 Dec 68, published 24 Aug 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A329)

Translation: An SHF power meter is proposed which contains a thermistor bridge, amplifier, variable-frequency oscillator and sensitivity control circuit. As a distinguishing feature of the patent, the proposed meter utilizes automatic sensitivity control which is effected by varying the frequency of the substituting voltage. This frequency is compared with that of the reference oscillations, and the difference between these frequencies is presented in digital form. The ultimate result is an increase in measurement precision. E. L.

1/1

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Acc. Nr.: AT0046539

Ref. Code: URC146

USSR

UDC 621.317.713

GRUZDEV, S.V., DUBCOY, N.D., KARPOV, R.G., OSOKIN, V.I.

"Digital SHF Power Meter"

Tsifrovoy izmeritel' SVCh moshchnosti (cf. English above),
Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priboro-
stroyeniye, 1970, No 1, pp 30-33

Translation:

Considered is an SHF power meter with linear conversion of the measured quantity into pulse repetition frequency and automatic output of the measurement result in digital form. The basic analytic relations and experimental data are presented.

Reel/Frame
19781800

USSR

UDC 621.317.78

GRUZDEV, S. V., DUBOVOY, N. D., KARPOV, R. G., OSOKIN, V. I.

"High-Speed Superhigh-Frequency Power Meter"

Tr. Ryazansk. radiotekhn. in-ta (Works of Ryazan Radiotechnical Institute), 1970, vyp. 23, pp 174-187 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A376)

Translation: This article contains a description of an instrument which is an astatic tracking system constructed on the basis of a selective amplifier encompassed by positive feedback via a bolometric bridge. The block diagram of this meter and the time diagrams explaining its operation are presented. A short theory is presented. The possibility of applying the device on the indicated principle for stabilization of the generator power is noted. The bibliography has three entries.

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USSR

UDC 621.317.78

DUBOVOY, N. D., GRUZDEV, S. V., KARPOV, R. G. OSOKIN, V. I.

"Superhigh-Frequency Power Meter with Time-Pulse Conversion"

Obmen opytom v radioprom-sti (Exchange of Experience in the Radio Industry)
vyp. 2, Moscow, 1970, pp 47-48 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract
No 8A373)

Translation: This article contains a block diagram and a description of the operating principle of a high-speed tracking time-pulse superhigh-frequency power meter. The meter includes a power amplifier, a controlled multivibrator, a pulse amplifier, a shaping circuit, and a delay line. The multivibrator is executed according to the schematic permitting control of the generated constant voltage pulse length. Variation of the pulse length can serve as a measure of the superhigh-frequency power. The pulse feed of the bridge circuit greatly improves the sensitivity of the bridge by comparison with constant or variable voltage feed.

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USSR

UDC 621.317.78

OSOKIN, V. I., GRUZDEV, S. V., DUBOVOY, N. D., KARPOV, R. G.

"Automatic Device for Measuring Low Levels of Continuous Superhigh-Frequency Power"

Tr. Ryazansk. radiotekhn. in-ta (Works of Ryazan Radiotechnical Institute), 1970, vyp. 23, pp 188-196 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A369)

Translation: A significant deficiency of self-balancing bridges as applied to measuring superhigh-frequency power is the high initial signal level at their output before supplying the measured power as a result of which the relative variation of this signal on arrival of the measured power at the bolometer is insignificant. A functional diagram is presented and analyzed, the special structure of which permits elimination of the indicated deficiencies and, in addition to this, automation of the measurement process, an increase in speed and an increase in accuracy. The instrument constructed by the described scheme, insures automatic measurement of the power in the 30 microwatt to 3 milliwatt range with accuracy to 5%. The measurement time for maximum power is less than or equal to 3 seconds.

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USSR

UDC 621.317.328

GRUZDEV, S. V., DUBOVOY, N. D., KARPOV, R. G., OSOKIN, V. I., CHIBRIKOV, S. I.

"Superhigh-Frequency Power Meter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzyy, Tovarnyye Znaki,
No 17, 12 May 70, p 56, Patent No 270886, Filed 8 Dec 68

Translation: This Author's Certificate introduces a superhigh-frequency power meter containing a thermistor bridge, a selective amplifier and a power indicating circuit. In order to increase the measurement accuracy, in the power indicating circuit the output of the balancing oscillation rectifier is connected to a comparator and an integrator, the integrator output is connected to the second input of the comparator, and the output of the comparator is connected via the control circuit to the saw oscillator the output of which is connected to the thermistor.

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USSR

UDC 621.317.744

GRUZDEV, S. V., DUBOVY, N. D., KARPOV, R. G., OSOEN, V. I., CHIBRIKOV, S. I.

"Pulse-Frequency Superhigh-Frequency Power Meter"

Moscow, Otkrytiya, Izobreneniya, Proizhlyennyye Obratzyy, Tovarnyye Znaki,
No 17, 12 May 70, p 56, Patent No 270887, Filed 5 Dec 69

Translation: This Author's Certificate introduces a pulse-frequency super-high-frequency power meter containing a bolometric bridge, a pulse amplifier, an amplitude detector, a generator with controlled frequency, an auxiliary generator and a subtracting circuit. In order to increase the sensitivity the output pulse repetition frequency divider of the controlled generator is connected to the feedback circuit of the bridge circuit.

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USSR

6
UDC: 621.317.769

KARPOV, R. G., GRUZDEV, S. V., FROLEN, K. I., OSOKIN, V. I., SUBOTAY, N. D.

"An SHF Power Meter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrabotay, Izvremennyye Zhurnaly, no 19, 1970, Author's Certificate No 272400, p 50

Abstract: This author's certificate introduces an SHF power meter which contains a self-balancing bolometric bridge with an oscillator in the self-balancing circuit. As a distinguishing feature of the patent, the sensitivity of the meter is improved by using a pulse generator with constant amplitude and controllable prf as the oscillator. The modulation characteristic of this generator depends on the peak value of the amplitude of the controlling pulses.

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USSR

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GRUZDEV, S. V., DOBOVOY, N. S., KARPOV, R. G., OSOJIN, V. I., CHIRIKOV, S. I.

"Superhigh-Frequency Power Meter"

Moscow, Открытия, Изобретения, Промышленные Образцы, Товарные Знаки, No 17
12 May 70, p 55, Patent No 270338, Filed 3 Dec 66

Translation: This Author's Certificate introduces a superhigh-frequency power meter containing a thermistor bridge, an amplifier, a controlled frequency generator and a measuring regulation circuit. In order to increase the measurement accuracy, the controlled frequency oscillation output and the reference oscillation output in the sensitivity regulating circuit are connected via dividers to the pulse sequencing switch, and the subtractor output is connected to the digital sensor for controlling the conversion voltage frequency and the division factor of the dividers.

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USSR

UDC 539.1.01

GRUZDEV, V. A.

"Concerning a Type of Instability of the Output Current of a Plasma Electron Source"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy: Fizika, No 5, 1970, pp 136-138

Abstract: The extraction of electrons from the plasma of a Penning discharge through the opening in the anode of the discharge chamber is a promising method of obtaining electron beams in a vacuum by means of an electric discharge. The characteristics of such electron sources may be substantially improved by using Penning tubes with one- or two-cavity cathodes for forming the plasma. However, under certain conditions the output current of such sources manifests a characteristic instability of the relaxation type, with constant voltages at the electrodes of the discharge chamber and in the extracting gap. This instability is discussed in the article. It is noted that the relaxation instability of the output current of an electric source based on a Penning discharge with cavity cathodes may be used for generating powerful electromagnetic oscillations as well as for obtaining l/l intensive electron pulse beams with a small pulse duration.

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USSR

UDC 547.26'118'222.07

GRUZDEV, V. G., IVIN, S. Z., and KARAVANOV, K. V.

"A Method of Making Alkyldichlorophosphines"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrazttsy, Tovarnyye Znaki, No 27, 1970, Soviet Patent No 279618, Class 12, filed 1 Aug 64, p 29

Abstract: This Author's Certificate introduces a method of making alkyl-dichlorophosphines by reducing complex compounds of alkyltetrachlorophosphines with aluminum chloride. As a distinguishing feature of the patent, the method is simplified by using metal carbides such as calcium carbide to carry out the reduction in the presence of potassium chloride.

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USSR

UDC 533.601.1+533.607.14

VINOGRADOV, YU. V., GRUZDEV, V. N., TALANTOV, A. V.

"Effect of the Turbulence Intensity on the Processes of Wake Mixing for Different Velocity Ratios"

V sb. Teoriya i praktika szhiganiya gaza (Theory and Practice of Gas Combustion --collection of works), No 5, Leningrad, Nedra, 1972, pp 28-33 (from RZh-Aviatsionnyye i raketnyy dvigateli, otdel'nyy vypusk, No 11, Nov 72, Abstract No 11.34.8)

Translation: In this paper an experimental study was made of the effect of the turbulence intensity on the mixing of isothermal wakes in a closed flow with a velocity ratio m from 0 to 5. The analysis of the results demonstrated that a simultaneous increase in the turbulence intensity in the wakes leads to intensification of mixing. This agrees with the theory of turbulent diffusion. The effect of the turbulence remains approximately the same as the velocity difference of the wakes increases. There are 2 illustrations and a 5-entry bibliography.

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USSR

UDC: 535.373.2

YERMOLAYEV, V. L., GRUZDEV, V. P., and TACHLIN, V. S.

"The Role of Electrostatic and Covalent Interactions in Energy Transitions in Solutions"

Moscow, Izvestiya AN SSSR -- Seriya Fizicheskaya, vol 56, No 5, 1972, pp 984-987

Abstract: Investigations conducted by the authors for the last few years in the area of radiationless energy transitions in liquid solutions with triple-charged ions of lanthanum have shown that Coulomb interactions strongly affect the velocity constant of energy transition if the donor and acceptor have an uncompensated charge and the covalent interactions occur directly between the donor and acceptor or through the links of the structure. In this article they prove the importance of the Coulomb and covalent interactions in energy transitions from the excited REI₁ to the unexcited REI₂, and from the triplet states of aromatic molecules to the REI, as well as from excited REI to the aromatic molecules, with conversion of the latter to the triplet state. Here, REI represents the rare-earth ion. The authors also find that the radiationless energy transition with the participation of the REI is an effective method for studying coordinate chemical processes in solutions.

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Biochemistry

USSR

UDC 547.964.4+577.17

(11)

SHVACHKIN, YU. P., VDOVINA, R. G., POZNYAK, M. G., VOLUYSKAYA, YE. N.,
RYABTSEV, M. N., KRIVTSOV, V. F., GRACHEVA, A. K., KRASHCHCHERKOV, S. P.,
NOVSELOV, V. A., GRUEDEV, V. S., OLEYNIK, A. M., KALINKINA, Z. B., FEDOTOV,
V. P., IVANOV, A. I., YUDAYEV, N. A.

"New Synthesis of Human Insulin"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 216-217

Abstract: Human insulin was synthesized on the basis of obtaining A and B chains by the solid phase method [R. B. Merrifield, J. Am. Chem. Soc., No 85, 2149, 1963; J. Stuart, et al., Tverdogazny sintez peptidov, Moscow, Mir, 1971] and subsequently combining the synthetic chains into the complete molecule of the biologically active hormone. Here, a new version of the synthesis is realized which permits exclusion of treatment of the chains with sodium in liquid ammonia which eliminates the danger of undesirable side reactions caused by this reagent [A. Marglin, et al., J. Am. Chem. Soc., No 88, 5051, 1966]. The A and B chains of human insulin were synthesized on an automated device using a spherical chloromethylated copolymer of styrene with 1% divinyl benzene as the insoluble carrier. All operations were performed in a nitrogen atmosphere. The derivatives of the L-amino acids used in the synthesis of the A and B chains are listed. The fluorohydrates of the chains were con-
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USSR

SHVACHKIN, YU. P., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 216-217

verted into S-sulfonates which exhibited no differences from the S-sulfonates of the corresponding natural chains of bull insulin. The synthetic A and B chains were recombined both with the corresponding natural chains and among each other. The resultant compounds had specific insulin activity of comparable magnitude to the previously synthesized insulin compounds [K. Lubke, et al., Adv. Enzymol., No 33, 445, 1970].

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USSR

UDC: 621.372.061

AMIANOV, I. N., GRUDEV, V. V., Editorial staff of the journal "Radio-
tekhnika i Elektronika" of the Academy of Sciences of the USSR

"Optimum Discrete Systems for Filtration of Several Parameters"

Optimal'nyye diskretnyye sistemy fil'tratsii neskol'kikh parametrov (of
English above), Moscow, 1970, 22 pp, ill. bibliography of one title (No
2169-70 Dep.) (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No RA84 15F)

Translation: The theory of conditional Markov processes is taken as a basis
for solving the problem of synthesizing a discrete optimum nonlinear filter
for a multidimensional Gaussian Markov process conventionally coded in a
pulse radio signal observed in white noise. Recurrent equations are found
for evaluating the components of the Markov process and correlation moments.
Two examples are considered: a) filtration of a process which satisfies a
second-order linear differential equation; b) the problem of simultaneous
measurement of the amplitude and delay of the radio signal. In the first
case the measuring device is a nonlinear tracking system consisting of a
parameter-evaluating channel and a speed-evaluating channel. The gain of
each channel is found as a function of the signal-to-noise ratio. It is
shown in the second case that the measuring device breaks down into two
separate systems: an amplitude-measuring system and a delay-measuring

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AMANTOV, I. N., BRUDEV, V. V., Optimal'nye diskretnye sistemy fil'-
tratsii neskol'kimi parametrami, Moscow, 1970

system. The gain of the delay-measuring channel depends on the instan-
taneous value of the amplitude. The error signal may be normalized by an
optimum AGC system. Filtration accuracy is evaluated. Resumé.

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1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PHYSICAL PROPERTIES OF CALCIUM OXIDE TITANIUM DIOXIDE SILICON
DIOXIDE, ALUMINUM OXIDE, MAGNESIUM OXIDE STAGS CONTAINING 15PERCENT
AUTHOR-(04)-ZHILLO, N.L., GRUZDEV, YU.A., GOROKH, A.V., PERSHINA, R.F.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (1), 65-9
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CALCIUM OXIDE, ALUMINUM OXIDE, MAGNESIUM OXIDE, SILICON
DIOXIDE, TITANIUM DIOXIDE, SLAG, FLUID VISCOSITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1812 STEP NO--UR/0370/70/000/001/0065/0069
CIRC ACCESSION NO--AP0118776
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 023

CIRC ACCESSION NO--AP0118776

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPN. VISCOSITY AND COMPN. FUSIBILITY DIAGRAMS FOR EXPTL. DATA AT 1400 AND 1500DEGREES WERE CONSTRUCTED FOR THIS SYSTEM. AN INCREASE IN THE CAO:SIO SUB2 RATIO IN THE TI SLAGS DECREASES THE VISCOSITY; THIS EFFECT IS GREATER AT LOW TIO SUB2 CONC. INCREASING THE TIO SUB2 CONC. IN THE SLAGS TO A CERTAIN LIMIT, DEPENDING ON THE CAO:SIO SUB2 RATIO, REDUCES THE VISCOSITY OF THE MELTS. ABOVE THIS LIMIT THE SLAG VISCOSITY RISES DUE TO CRYSTN. PROCESSES. THE GREATEST REDN. IN VISCOSITY WITH INCREASE IN TIO SUB2 CONC. OCCURS IN THE SLAGS WITH DECREASED CAO:SIO SUB2 RATIOS.

UNCLASSIFIED

UDC: 621.397.61

USSR

KRIVOSHEYEV, M. I., GRUZDEV, Yu. B.

"Development of Technical Facilities for Television Broadcasting"

V sb. Televizion. tekhnika (Television Technology--collection of works),
Moscow, "Svyaz", 1971, pp 5-37 (from RZh-Radiotekhnika, No 6, Jun 71,
Abstract No 6G176)

Translation: Data are given on development of the TV broadcasting network in the Soviet Union. A brief description is given of the Soviet-wide radio and television transmitting station at Ostankino. A detailed description is given of the Soviet-wide TV center, which includes, in addition to the Ostankino station, a studio and equipment complex on Shabolovka, a television theater, a portable equipment base, etc. An outline is given of the development of color television broadcasting. The use of artificial earth satellites is discussed. The technical facilities of sound studios are considered as well as broadcasting outside the studio, the use of video recording and a number of other problems. Fourteen illustrations, bibliography of forty-one titles. N. S.

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1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ISOTYPIC N,GERMANIUM,N,SILICON HETEROJUNCTIONS -U-
AUTHOR-(04)-FEDOTOV, YA.A., GRUZDEVA, G.A., KOVALEV, A.N., SUPALOV, V.A.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(5), 825-9
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--SILICON SINGLE CRYSTAL, GERMANIUM SINGLE CRYSTAL, EPITAXIAL
GROWTH, HYDROGEN, PHOTOELECTRIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0894 STEP NO--UR/0449/70/004/005/0825/0829
CIRC ACCESSION NO--AP0136328
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136328

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

ABSTRACT. THE EFFECT WAS STUDIED OF THE TECHNOLOGY OF THE PREPN. OF ISOTYPIC HETEROJUNCTIONS N,GE,N,SI ON THEIR ELEC. AND PHOTOELEC. CHARACTERISTICS. THE ISOTYPIC HETEROJUNCTIONS WERE PREPD. BY THE IODIDE TRANSPORT METHOD, WITH H AS THE CARRIER GAS. GE EPITAXIAL LAYERS WERE GROWN ON FREE SI SURFACES OR IN THE OPENINGS IN A SI OXIDE LAYER, WHICH WERE OBTAINED BY THE PHOTOLITHOGRAPHIC METHOD. THE ADDNL. INTRODUCTION OF LINEAR DEFECTS DURING THE GROWTH OF GE IN THE OPENING OF OXIDE LAYER SUBSTANTIALLY CHANGES THE D. OF STATES ON THE GE-SI INTERFACE. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

GAUZDEVA, K.N.

CHARACTERISTICS OF ENZYME SPECTRA OF BLOOD SERUM, URINE, AND SALIVA IN
DIGESTIVE SYSTEM PATHOLOGY

Article by K.N. Gauzdeva, V.G. Ianchenko, Odesk Medical Institute; Moscow,
Vestnik Akademi Meditsinskikh Nauk SSSR, Russian, No 11, 1971, pp 48-51

DOI: 616.11-04:616.154.1-01
11-034.832

Investigations of the last few years aroused the interest of a wide circle of clinicians with regard to determining the enzymatic activity of biological fluids in the presence of diverse pathology; new data in clinical biochemistry indicate that disturbances in coordinated activity of enzymatic systems determining the function of some organ and other, and, consequently of the organism as a whole, are at the basis of any pathological process.

Determination of activity of amylase, aldolase, cholinesterase, phosphatase, transaminase and other enzymes present in the blood serum and urine of patients with pathological processes in the liver, pancreas, myocardium, and other organs is being performed on an increasingly wide scale and it is being used for diagnostic and prognostic purposes (A.A. Pokrovskiy; Yu.V. Amshelovskiy; 1963; M.D. Povli chki; Abderhalden; Szczeklik).

Changes in the enzymological status of tissues of the organism are more or less reflected in the enzyme spectrum of the blood, urine, and, perhaps, saliva. Thus far there are not too many investigations dealing with saliva. At the same time, it could hardly be assumed that its chemical composition and activity of its enzymes do not change in the presence of respiratory disturbances in the organism, especially if these disturbances are referable to the digestive system.

We conducted a parallel study of the activity of a number of enzymes in saliva, blood serum, and urine of patients suffering from gastritis, peptic ulcer, and gastric carcinoma. As a control, analogous indices were studied in healthy individuals.

There are several reports in the literature dealing with the state of some enzymes of saliva, blood serum, and urine in the presence of the above forms of pathology (Yu.V. Amshelovskiy, 1963; L.V. Volkova; L.F. Adigamov and

USSR

UDC 621.791.052:620.192.4

KHOREV, A. I., Candidate of Technical Sciences, and GRUZDEVA, L. A., Engineer

"Strength Properties of Welded Joints of Titanium Alloys Containing Isomorphous β -Stabilizing Elements"

Moscow, Svarochnoye Proizvodstvo, No 8, Aug 71, pp 37-40

Abstract: The article describes results of a study of the effect of isomorphous β -stabilizing elements -- molybdenum and vanadium, as well as molybdenum in conjunction with vanadium (given a constant α -stabilizing aluminum addition content of 3 percent) on the mechanical properties of the base metal and welded joints of titanium alloys. The vanadium was introduced in an amount conditionally equivalent to the effect of molybdenum (1 percent Mo equivalent to 1.5 percent V). For smelting of alloys use was made of TG 105 titanium sponge, A00 aluminum, aluminum-molybdenum master alloy, molybdenum powder, and high-purity vanadium. It was found that alloys containing vanadium of electrolytic purity have a lower strength than those alloyed with molybdenum, while those alloyed simultaneously with molybdenum and vanadium take an

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USSR

KHOREV, A. I., and GRUZDEVA, L. A., Svarochnoye Proizvodstvo, No 8, Aug 71, pp 37-40

intermediate position with respect to strength. An attempt is made to classify weldable titanium alloys according to mechanical properties and degrees of alloyage with β -stabilizing elements. There is a zero group containing α -alloys unalloyed with β -stabilizing elements (Ti-3Al alloy; commercial unalloyed VT1-00, VT1-0, VT1 titanium; alloys VT5 (Ti-5Al) and VT5-1 (Ti-5Al-2Sn). Group I consists of low alloys of the martensitic type (OT4-type sheet titanium alloys), group II medium martensitic-type alloys (alloys VT6S, VT6, VT14, VT23), group III high martensitic-type alloys (alloy VT16), group IV low β -alloys (alloys of the system Ti-12Mo-(4-6)Sn; Ti-12Mo-(4-6)Zr; Ti-11Mo-5Sn-5Zr), group V medium β -alloys (alloy VT15). Group VI consists of alloys containing 30 percent or more molybdenum.

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1/2 029 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ON THE PATHOGENESIS OF MICROGENESIS -U-
AUTHOR--(03)-GRUZDKOVA, YE.V., RABUKHINA, N.A., STEPANOVA, I.G.
COUNTRY OF INFO--USSR
SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 3, PP 46-48
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BONE DISEASE, JAW, ANATOMY, CLINICAL MEDICINE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0081 STEP NO--UR/0511/70/049/003/0046/0048
CIRC ACCESSION NO--AP0120781
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120781

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. SUMMARY. THE AUTHORS DISCUSS PROBLEMS RELEVANT TO THE PATHOGENESIS OF UNILATERAL AND BILATERAL MICROGENESIS. THE ARTICLE ANALYZES 94 COVERING A SIX YEAR (1963-1968) PERIOD. STUDIES OF CLINICO ROENTGENOLOGICAL DATA MADE IT POSSIBLE TO ESTABLISH THE SEQUENCE OF PATHOLOGICAL CHANGES INVOLVING THE TEMPEROMANDIBULAR JOINT CAUSED BY AN INFLAMMATORY PROCESS, INJURY OF OSTEOMYELITIS. ONLY IN 12 PATIENTS THERE WERE CONGENITAL DISTURBANCES IN THE CRANIAL BONE FORMATION, IN PARTICULAR AN ABSENCE OF ARTICULAR PROCESSES. THE RESULTS OF THE INVESTIGATION TESTIFY TO THE FACT THAT THE OVERWHELMING MAJORITY OF CASES OF MICROGENESIS ARE A COMPLICATION OF PREVIOUS AFFECTIONS OF THE TEMPEROMANDIBULAR JOINT AND COULD NOT BE REFERRED TO THE GROUP OF MALFORMATION OF THE HUMAN JAWS.
FACILITY: TSENTRAL'NYY N-I INSTITUT STOMATOLOGII, MOSCOW.

UNCLASSIFIED

USSR

UDC 669.15.018.295:538.5

GRUZIN, P. L., RODIONOV, YU. L., LI, YU. A., YEDNERAL, A. F., ZHUKOV, O. P., and PERKAS, M. D., Institute of Metal Science and Physics of Metals, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Eardin

"Redistribution of Alloying Elements Upon Recovery in Martensite-Aging Alloys Fe-Ni-Mo and Fe-Ni-Co-Mo"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 2, 1975, pp 423-427

Abstract: In order to determine the reasons for differences in the nature of change of recovery of the alloys N16M5 and N16K15M5 at various temperatures, the phenomenon was studied by nuclear γ -resonance (NGR). The composition of the alloys is as follows: N16M5--16 wt.% Ni, 5Mo; N16K15M5--16.4% Ni, 5.25% Mo, 15.1% Co, remainder Fe in both cases. Low temperature aging was at 420° C for 8-100 hours; the recovery temperature was 100° C higher. It was found that cobalt has a significant influence on the processes of redistribution of alloy-element atoms during recovery. The degree of recovery in alloys with cobalt increases, apparently as a result of decomposition of metastable segregations at low temperatures.

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БИОТЕХНИКА И МАТЕРИАЛЫ
Соединения и Суперпроводимость

USSR

UDC: 537.812.02

GRUZIN, P. L., BYCHKOV, Ya. P., YEVSTYKHEVA, I. A., EPICHOV, V. S.,
NIKOLAYEV, I. N.

"The Mössbauer Effect in Nb_3Sn as a Function of Heat Treatment"

Moscow, Sverkhprovodnyeshchiye splavy i soediniya.--sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1978, pp 42-47 (from RZh-Radiotekhnika, No 10, Dec 78, abstract No 120518 [referred])

Translation: The superconductive compound Nb_3Sn displays the so-called "degradation effect" -- an appreciable reduction in T_c when the annealing or sintering temperature is raised to 2500°C. An investigation was made of the influence of heat treatment in a vacuum on the parameters of nuclear gamma resonance. With a rise in annealing temperature a considerable reduction was observed in the width of the RQF line and increase of its tail, together with a reduction in absorption probability. The appearance of the tail is due to an increase in the degree of ordering of the structure of the compound Nb_3Sn . It is shown that the degree of ordering can be estimated from the absorption probability for different states if the degree of annealing and absorption probabilities are known for two other states. (1/2)

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USSE

GRUEIN, P. L. et al., *Sovetskoye yadernoye splavy i spetsial.*, "Moskva", 1972, pp 42-47

increase in heat-treat temperature, a change was observed in the density of the 5S-electrons on the Sn nucleus. It is shown that the K_α x-rays are very sensitive to the other tin-containing phases in In₃Sn. Three illustrations, one table, bibliography of seven titles.

2/2

USSR

UDC: 620.179.152.5

GRUZIN, P. L., DRABKIN, L. A. and KOSAREV, L. I.

"Scattering of γ -Radiation by Cs_{137} Steel Cylindrical Barrier"

Sb. Radioizotop. sredstva Kontrolya i automatiz. tekhnol. protsessov v prom-sti (Symposium on Radioisotope as Means of Control and Automation of Manufacturing Processes in Industry) Moscow, Atomizdat Publishing House, 1972, pp 523-527 (from Referativnyy Zhurnal-Metrologiya i Izmeritel'naya Tekhnika, No 8, 1972, Abstract No 8.32.255)

Translation: Angular spectrum of once scattered radiation is obtained for the case of narrow beam of γ -ray falling on Cs_{137} steel cylindrical barriers of various thickness and curvature. It is shown that data on scattering of γ -quantums in parallel plane barriers with scattering angle of 30° can be used in this case with sufficient accuracy. The effect of cylindrical barrier thickness on the scattered radiation flux was investigated. The obtained relations have maximums. With the wall thickness greater than the one corresponding to the maximum flux the relation between flux and thickness is linear (3 illustrations, 1 reference).

1/1

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USSR

UDC 669.15'24'28'25-194:669-157.97

PERKAS, M. D., GRUZIN, P. L., YEDNERAL, A. F., MOCUTNOV, B. M., RODIONOV, Yu. L., and YEREMENKO, M. A., [Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin]

"The Effect of Cobalt on Martensite Aging in Fe-Ni-Mo Alloys"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 2-10

Abstract: Experimental data indicate that aging of Ni6M5 alloy occurs in two stages. At first, Mo atoms migrate to dislocations, and new centers of homogeneous structure are formed. In the second stage a stable intermetallic (Fe, Ni)₂Mo phase is formed. When the same steel was alloyed with 5% Co, the first aging stage was not affected, but more of the intermetallic phase was formed during the second aging stage. When the Co amounts to more than 8-10% (Ni6K10M5, Ni6K15M5, Ni2K15M10) the aging of martensite changes. In this case three aging stages were observed: (1) deformation aging with the formation of regions with short-range order; (2) formation of segregations and separations containing Mo and Ni and having ordered atom positions and ω -phase structure. These segregations were stable and were formed not only at dislocations but also away from the dislocation lines. The third

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PERKAS, M. D., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 2-10

stage became apparent at high temperatures (480-500°C) when separations containing ω -phase are unstable and dissolve or transform into the stable (Fe, Ni, Co)₂Mo phase.

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UDC 669.24*15'292:538.22

GRUZIN, P. L., RODIONOV, YU. L., and MKRTCHYAN, V. S., Institute of Metal Science and Physics of Metals of the Central Scientific Research Institute of Ferrous Metallurgy

"Redistribution of Vanadium Atoms in Iron-Nickel Permalloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 34, No 4, 1972, pp 878-879

Abstract: The Ni-15Fe-13V alloy was enriched with Fe-57 isotope (up to 18%) in order to make the nuclear gamma resonance (NCR) method more sensitive. The Mossbauer spectrometer was used in the experiments. All samples were 20-40 μ m thick, the annealing of which was carried out at 450-500°C. Changes in V atoms concentration was judged from alternations of the superfine magnetic field (H_{sup}). Increase of H_{sup} for $Ni_3(Fe, V)$ alloy after annealing was ~ 40 koersted compared with hardened samples. This increase in H_{sup} corresponded to a decrease in the number of V atoms around Fe atoms which in this case amounted to $\sim 20\%$. The value of H_{sup} for deformed $Ni_3(Fe, V)$ samples was lower by approximately 20 koersted in comparison with hardened. This means that V atoms move away from Fe atoms during annealing. the redistribution of
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GRUZIN, P. L., et al., Fizika Metallov i Metallovedeniye, Vol 34, No 4, 1972, pp 878-879

V atoms during low-temperature annealing (450-500°C) was lower for deformed samples compared with the hardened samples.

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UDC: 539.2+621.039.8

GRUZIN, P. L., RODIONOV, Yu. L., MKRTCHYAN, V. S., LI, Yu. A.

"Study of the Effect of Cobalt on the Redistribution of Alloy Element Atoms in Iron-based Alloys by the NGR Method"

Moscow, Doklady Akademii Nauk SSSR, Vol 204, No 2, 1972, pp 328-331.

Abstract: Cobalt as an alloying element has a significant influence on the physical and mechanical properties of alloys. However, there is no unified opinion at present concerning the relative role of cobalt in changing the properties of alloys. This work studied the influence of cobalt on the redistribution of atoms of alloying elements in submicrovolumes of iron-based alloys by the method of nuclear gamma resonance (NGR). Alloys studied included Fe-12Co; Fe-16Ni-5,6Co; Fe-16Ni-10Co; Fe-16Ni-15Co; Fe-16Ni-15Co-5Mo; Fe-16Ni-15Co-10Mo; Fe-18Ni-10Co-10W.

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GURZIN, P. L., RODIONOV, Yu. L., MKRTCHYAN, V. V., LI, Yu. A., Moscow, Doklady Akademii Nauk SSSR, Vol 204, No 2, 1972, pp 328-331.

The influence of hardening and subsequent tempering at 400-500°C on the resonance spectra was studied for the alloy Fe-16Ni. The study showed that in the early stages of tempering of iron-cobalt at 400-500°C, the atoms of cobalt are redistributed, resulting in an increase in the number of cobalt atoms in the immediate neighborhood of the iron; the molybdenum and tungsten atoms move away from the iron atoms in the solid solution. In later stages of tempering, the phases Fe₂Mo and Fe₂W are formed. Establishment of close order of iron and cobalt atoms retard^s the processes leading to the separation of phases such as Fe₂Mo.

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Single Crystals

USSR

UDC 539.67

VASIL'YEV, A. A., and GRUZIN, P. L.

"Interaction Between Point Defects and Dislocations in Molybdenum Single Crystals"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 90-94

Abstract: The results of an investigation of the recovery of amplitude-independent and amplitude-dependent internal friction on deformed, annealed molybdenum samples are presented. Two recovery phases were observed. The first recovery phase is related to the migration of dislocated impurity atoms; the second phase is divided into two stages. A redistribution of impurity atoms takes place in the first stage, with subsequent locking on dislocations; however, the locking of dislocations is weak, and with increasing vibration amplitude the dislocations break away from locking points. The formation of Cottrell atmospheres occurs in the second stage. Radiation by electrons affects only the first recovery phase. 3 figures, 4 references.

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USSR

UDC 669.017:548.526

GAL', V. V., GRUZIN, P. L., and YUDINA, G. K., Central Scientific Research Institute of New Metallurgical Technology imeni I. P. Bardin

"Study of Surface Diffusion of Metals by Autoradiography"

Moscow, Fizika Metallov i Metallovedeniye, Vol 30, No 5, 1970, pp 950-956

Abstract: The regularities of surface diffusion were studied for sources used in the study of migration by autoradiography. Formulas are presented for the processing for data produced by contact autoradiography is checked on the basis of results of an earlier work. Processing of the results of the work (by Winegard and Chalmers) produced the temperature dependence of the surface self-diffusion factor of silver as 19.9 Kcal/mol, satisfactorily agreeing with the figure of 12 Kcal/mol produced by Suzuoka.

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UDC 621.79

GAL', V. V., and GRUZIN, P. L. Moscow

"Study of the Propagation of Fusible Metals on the Surface of Copper"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 49-54

Abstract: The article describes results of a study of the propagation of mercury (in the 5-80° temperature range) and gallium (in the 35-80° range) on the surface of single-crystal and polycrystalline specimens of copper prepared from ingots obtained by dip-forming. The propagation of mercury begins with a short initial stage, followed by a second longer stage. Propagation is accompanied by the formation of a single dull spot. The propagation of gallium leads to the formation of five zones visually distinguished by different shades, which limit the resultant phases. The number of visually observed layers corresponds to the number of intermetallics in the Cu-Ga and Cu-Hg systems. The spot size in the case of mercury is described by the time function $t^{0.5}$

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GAL', V. V., and GRUZIN, P. L., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 49-54

at a temperature above 20° C. The initial propagation stage is due to hydrodynamic flow, while the subsequent stage is due to diffusion.. The growth of the spot in the case of gallium can be described by a power time function with an index of 0.5 ± 0.1 over the entire temperature range. The propagation rate of the melt varies for different crystal planes. The anisotropy of the diffusion propagation of mercury and gallium according to direction was studied on the (110), (100), (111) and (210) planes of copper. A further study of the surface diffusion of melts on single crystals of copper, nickel and their alloys is planned in subsequent articles.

The authors thank V. T. VORISOV and G. V. SHCHERBEDINSKIY for discussing the results and for their advice.

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VASIL'YEV, A. A., GRUZIN, P. L.

"Interaction of Point Defects With Dislocations in Molybdenum Monocrystals"

Vnutr. Treniye v Metallich. Materialakh [Internal Friction in Metallic Materials -- Collection of Works], Moscow, Nauka Press, 1970, pp. 90-94 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Ye 1364 by the Authors)

Abstract: Results are presented from the study of the recovery of amplitude-dependent and amplitude-independent internal friction in deformations annealed at various temperatures and bombarded by electrons in monocrystalline Mo specimens. Two stages of recovery are detected. The first stage of recovery is related to migration of dislocated impurity atoms; the second stage is divided into two parts. During the first part, redistribution of interstitial atoms occurs with subsequent attachment of

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UDC:

VASIL'YEV, A. A., GRUZIN, P. L., Vnutr. Treniye v Metallich. Materialakh [Internal Friction in Metallic Materials -- Collection of Works], Moscow, Nauka Press, 1970, pp. 90-94 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Ye 1364 by the Authors)

these atoms to dislocations; however, the attachment of dislocations is weak, and as the oscillation amplitude increases, dislocations separate from their attachment points. During the second stage, Cottrell atmospheres are formed. Electron bombardment influences only the first stage of recovery.

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