

2/2 010

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104453

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING O(CH SUB2 CH SUB2 OH) SUB2 (I) WITH KOH AND ¹⁴C SUB2 H SUB2 2 HR AT 160DEGREES (17 ATM INITIALLY) GAVE 53PERCENT DIVINYL ETHER 4F THE GLYCOL, B SUB13 89DEGREES, WHICH WITH 1 PERCENT HCL REGENERATED THE PURE GLYCOL, B SUB2 90DEGREES. HEATING I WITH KOH AT 165DEGREES IN C SUB2 H SUB2 (15 ATM INITIALLY) 3 HR GAVE, AFTER CHROMATOG. OF THE MIXT. 1.8PERCENT (CH SUB2 OH) SUB2 IDENTIFIED BY Silylation. THUS, DIETHYLENE GLYCOL IS CLEAVED BY KOH TO (CH SUB2 OH) SUB2 AND THE PROCESS IS ACCELERATED BY THE PRESENCE OF C SUB2 H SUB2. THE EFFECT IS POSSIBLY CAUSED BY CLEAVAGE OF THE ETHER BOND THROUGH ACTION OF THE ETHEREAL O AS A NUCLEOPHILE IN REACTION WITH C SUB2 H SUB2 AND FORMING AN INTERMEDIATE SUCH AS (HOCH SUB2 CH SUB2) SUB2 O PRIME POSITIVE CH:CH PRIME NEGATIVE.

UNCLASSIFIED

1/2 010

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--SPLITTING OF AN ETHER BOND DURING DIETHYLENE GLYCOL VINYLATION -U-

AUTHOR--ATAVIN, A.S., AMOSOVA, S.V., VYLEGZHANIN, O.N., KEYKO, V.V.,
TROFIMOV, B.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 149-52

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ETHYLENE GLYCOL, CHEMICAL BONDING, ETHER, ETHYLENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1987/1055

STEP NO--UR/0062/70/000/001/0149/0152

CIRC ACCESSION NO--AP0104453

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USSR

AMOSOVA, N. N., Vestn. Leningr. Un-ta., 1972, No 13, pp 5-14.

and

$$P\left(\frac{X_{k1} + \dots + X_{kN}}{B_N} \geq c \sqrt{\log N}\right) = \frac{N^{-\frac{c^2}{2}}}{c \sqrt{2\pi \log N}} \times$$

$$\times \left(1 + O\left(\frac{1}{\log N}\right)\right), \quad n \rightarrow \infty, \quad \text{where further improvement of the order } O(1/\log N)$$
 is impossible.

This article also contains a bilateral analogue of these results.

055K

AMOSOVA, N. N., Vestn. Leningr. Un-ta., 1972, No 13, pp 5-14.

for all sufficiently large n . Let us assume $K_N(\epsilon) = \frac{\epsilon B_N}{(\log(B_N^2))^{\frac{1}{2}}}$,

and suppose

$$\frac{(\log(B_N^2))^{\frac{1}{2}}}{B_N^2} \sum_{i=1}^N \int_{|x| > K_N(\epsilon)} x^2 dF_{ni}(x) \rightarrow 0 \quad (n \rightarrow \infty)$$

for any $\epsilon > 0$. We assume

$$\Phi(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^x e^{-\frac{t^2}{2}} dt.$$

Suppose

$$\sup_n \frac{1}{N} \sum_{i=1}^N \int_0^{\infty} x^q dF_{ni}(x) < \infty$$

for a certain $q > c^2 + 2$, $c > 0$, in which case for $0 \leq x \leq c \sqrt{\log N}$ we have

$$\frac{P\left\{\frac{X_{n1} + \dots + X_{nN}}{B_N} \geq x\right\}}{1 - \Phi(x)} \rightarrow 1, \quad n \rightarrow \infty$$

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USSR

AMOSOVA, N. N.

"Limiting Theorems for Probabilities of Moderate Deviations"

Vestn. Leningr. Un-ta. [Leningrad University Herald], 1972, No 13,
pp 5-14 (Translated from Referativnyy Zhurnal, Kibernetika, No 1,
1973, Abstract No 1 V35 by the author).

Translation: Let us study a sequence of series of random quantities X_{n1}, \dots, X_{nk_n} , independent in each series, with distribution functions

$F_{n1}(x), \dots, F_{nk_n}(x)$, $n = 1, 2, \dots$. Suppose

$$\int_{-\infty}^{\infty} x dF_{ni}(x) = 0, \quad \int_{-\infty}^{\infty} x^2 dF_{ni}(x) = \sigma_{ni}^2 < \infty$$

for $1 \leq i \leq k_n$ and all n . We assume $N = k_n$, $B_N^2 = \sum_{i=1}^N \sigma_{ni}^2 < \infty$. Suppose $N \rightarrow \infty$ as $n \rightarrow \infty$ and suppose there are positive a and A such that,

$$a \leq \frac{B_N^2}{N} \leq A$$

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USSR

2/2 -040

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AA0100739

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AL CASTING ALLOYS HAVING HIGHER STRENGTH AT 300DEGREES AND LOWER COEFF. OF EXPANSION THAN OTHER AL BASE ALLOYS FOR PISTONS CONTG. 15-19PERCENT SI, CONTAIN SI 20-2, CU 2.2-3, NI 2.2-2.8, MG 0.2-0.5, MN AND CR EACH 0.2-0.4, TI 0.1-0.3, AND FE 0-0.9PERCENT. THE MELT SHOULD BE INOCULATED WITH A P COMPD., REFINED WITH CL OR CHLORIDE AT 700-850DEGREES, AND CAST AT 780-850DEGREES. CU, NI, AND CR COMPD. INCREASE THE HEAT RESISTANCE, MN IMPROVES THE STABILITY OF THE AL SOLID SOLN., AND CR AND MN BREAK UP THE COARSE FE-SI COMPD. PLATES. AFTER 10 HR ANNEALING AT 360-80DEGREES AND AIR COOLING THESE CASTINGS HAVE 16-20 KG-MM PRIME2 TENSILE STRENGTH, 0.2-0.5PERCENT ELONGATION, 90-110 BRINELL HARDNESS, 9-12 KG-MM PRIME2 FATIGUE LIMIT FOR 5 TIMES 10 PRIME7 CYCLES, AND 5-6 KG-MM PRIME2 125 HR RUPTURE STRENGTH AT 300DEGREES. AFTER 12 HR HEATING AT 220-40DEGREES AND AIR COOLING, THE ABOVE PROPERTIES ARE 19-23, 0.2-0.5, 100-130, 10-13, AND 6-6.5, RESP. THE COEFF. OF LINEAR EXPANSION AT 20-300DEGREES IS (18.5-19.5) TIMES 10 PRIME6. THE ALLOYS ARE THUS SUITABLE FOR PISTONS IN "SUPERCHARGED AUTOMOTIVE ENGINES."

UNCLASSIFIED

1/2 040 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ALUMINUM ALLOYS FOR CAST PISTONS -U-
AUTHOR-(04)-BUSAROV, V.M., KIRILLOV, M.I., AMOSOV, V.N., ARSHINOV, V.D.
COUNTRY OF INFO--USSR
SOURCE--BRIT. 1,180,880
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PROPULSION AND FUELS
TOPIC TAGS--ALUMINUM ALLOY, CHEMICAL COMPOSITION, CHEMICAL PATENT, METAL
CASTING, HEAT RESISTANT METAL, HARDNESS, METAL SOLID SOLUTION, TENSILE
STRENGTH, FATIGUE STRENGTH, INTERNAL COMBUSTION ENGINE COMPONENT, PISTON
ENGINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/0215 STEP NO--UK/0000/70/000/000/0000/0000
CIRC ACCESSION NO--AA0100739
UNCLASSIFIED

Mechanical Properties

USSR

UDC 620.18

KOPETSKIY, CH. V., ORZNEKHOVSKIY, V. L., PASHKOVSKIY, A. I.,
AMOSOV, V. M., BOBKOVA, N. N., and PAVLOVA, YE. I., Moscow

"Influence of Carbon on the Mechanical Properties and Structure
of Molybdenum Crystals"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar-Apr 71,
pp 67-74

Abstract: The structure and properties of molybdenum crystals with orientation of the $\langle 110 \rangle$ $\langle 100 \rangle$ growth axes, containing 0.02 and 0.03 wt. % carbon, are studied in the 77-293°K temperature interval. A decrease in the carbon content within these limits causes a sharp increase in plasticity of the crystals, particularly at low temperatures, a decrease in the yield point, and a decrease in the dependence of yield point on test temperature, as well as more even distribution of dislocations and superior crystal structure. The strong dependence of yield point, relative elongation, relative reduction in area, and nature of rupture of crystals on the orientation of the rupture axis is confirmed.

1/1

USSR

UDC 621.762:669.018.5(038.8)

AMOSOV, V. M., KARELIN, B. A., KITAYEV, B. L., SAVICHEVA, M. A., GUSEV, A. M.,
PAPILOV, V. P., and STEPANOVA, T. I.

"Powder Metal Alloy"

USSR Author's Certificate No 254092, filed 12 Jun 69, published 20 Mar 70
(from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G357 P)

Translation: A powder metal electrode alloy based on W is proposed for spark gaps. To stabilize the emission properties and to increase the rate of electrode atomization barium zirconate is introduced into the alloy composition. The barium zirconate possesses stable properties under the conditions of exploitation and does not interact with the remaining components of alloy during sintering in the temperature interval 1550-1600°. The alloy is of the following composition: 0.5-4% Ni, 4-5% barium zirconate, and the remainder -- W. The alloy structure is in the form of fine-grain W, coated with solid W solution in Ni, and dispersed particles of barium zirconate uniformly distributed in grains and along grain boundaries.

V. Chelnokov

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Mechanical Properties

USSR

UDC 620.18

KOPETSKIY, CH. V., ORZHEKHOVSKIY, V. L., PASIKOVSKIY, A. I.,
AMOSOV, V. M., BOBKOVA, N. N., and PAVLOVA, YE. I., Moscow

"Influence of Carbon on the Mechanical Properties and Structure
of Molybdenum Crystals"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar-Apr 71,
pp 67-74

Abstract: The structure and properties of molybdenum crystals with orientation of the $\langle 110 \rangle$ $\langle 100 \rangle$ growth axes, containing 0.02 and 0.03 wt. % carbon, are studied in the 77-293°K temperature interval. A decrease in the carbon content within these limits causes a sharp increase in plasticity of the crystals, particularly at low temperatures, a decrease in the yield point, and a decrease in the dependence of yield point on test temperature, as well as more even distribution of dislocations and superior crystal structure. The strong dependence of yield point, relative elongation, relative reduction in area, and nature of rupture of crystals on the orientation of the rupture axis is confirmed.

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USSR

UDC: 621.382.7

ALFEROV, Zh. I., *Fizika i tekhnika poluprovodnikov*, No 10, 1972,
pp 1879-1887

600 lines/mm. The radiation receivers were germanium photo-diodes
or the PnU-22. The authors express their gratitude to L. V.
Klepikova and V. P. Kus'min for their assistance with the experi-
ments, and V. K. Tchelkevich for his interest in the work.

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USSR

UDC 621.372.7

ALFEROV, Zh. I., AMOSOV, V. I., GARBUZOV, D. S., ZHILYAYEV, Yu. V.,
KONNIKOV, S. G., KOP'YEV, P. S., and TROJIN, V. G.

"Investigating the Dependence of the Luminescent Characteristics
of n and p Type $\text{GaP}_{1-x}\text{As}_x$ and $\text{Al}_{1-x}\text{Ga}_x\text{As}$ Solid Solutions"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1879-
1887

Abstract: The present article is the latest of a series published by the first-named author in collaboration with three or other researchers regarding the nature of photoluminescence in solid solutions of $\text{GaP}_{1-x}\text{As}_x$ and $\text{Al}_{1-x}\text{Ga}_x\text{As}$. In the present paper, results are given of experimental investigations into the position of the prime band maximum radiation and the relative radiation intensity in the band as they depend on the composition of the solid solutions of both n and p types. The experiments were carried out were in the form of epitaxial layers obtained by the liquid phase gas transport method, their composition being determined by a microcentrifugal spectral method with the JMA-Spectrograph. The luminescence was excited by a LPM-250 lamp with a filter emitting the moving the yellow and green mercury lines, and the emission spectra were recorded by the MPR-2 monochromator with a grating of 1/2

AMOSOV, N. M., LISHCHUK, V. A., PALETS, B. L., PATSKINA, S. A., YERMAKOVA, I. I., LYABAKH, Ye. G., Upr. i Inform. Protsessy v Zhivoy Prirode, Moscow, Nauka Press, 1971, pp 178-182.

self-regulation of local blood circulation, the regulation of water and salt metabolism and the central nervous control system. Mathematical models are presented for the system of regulation of blood flow through the skeletal musculature and the system for temperature control in the organism. It is noted that programs have been created on their basis for machine realization in the input language BESM-ALGOL. A special "control" program is called for, allowing printout of all variables of interest to an investigator in digital or graphic form, as well as calculation of a number of arbitrary quantities for the model (mean values, integral estimates, etc.).

USSR

AMOSOV, N. M., LISHCHUK, V. A., PALETS, B. L., PATSEINA, S. A., YERMAKOVA, I. I., LYABAKH, Ye. G.

"Algorithmic Support of a Model of the Internal Sphere of an Organism"

Upr. i Inform. Protsessy v Zhivoy Pripode [Control and Information Processes in Living Nature -- Collection of Works], Moscow, Nauka Press, 1971, pp 178-182, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V594 by V. Mikheyev).

Translation: Requirements are studied for a system of algorithmic support of the model of the "internal sphere" of an organism for realization by digital computer. The most important are the following: 1) the model must have a modular structure with the minimum number of global variables; 2) all modules of the model should be described in the same language; 3) great independence (in the sense of programming) of individual modules from each other and from the system as a whole is possible; 4) good controllability of the program realizing the model; 5) the program should have wide possibilities for contact with the operator during the process of computation; 6) self-improvement of the model during operation. The modules of the general model of the "internal sphere" of the organism are the cardiovascular system, the temperature control system, the respiration control system, the system for

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USSR

USSR

AMOSOV, N. M., Trud, 29 Aug 71, p 3

always useful; and (3) abundant food is useful. At the same time as medicine could do more, there is a great deal the individual can do. Correct diet and exercise will greatly assist in improving health. The diet recommended by A. Pokrovskiy, director of the Institute of Nutrition, Academy of Medical Sciences USSR, is the best I know. It is essentially a vegetable-protein (meat, milk, and eggs) diet. The role of water in the diet should be greatly increased, at least 2.5-3 liters a day should be drunk. Fast walking, running, and specific physical exercises will accustom the body to increased physical loads. The results of this work can be checked by pulse rate, which should double immediately after the exercise (but not more), and then return to within 3-5 beats of normal in five minutes. Finally, one should not overlook the necessity of adequate sleep.

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USSR

AMOSOV, N. M., Academician, Academy of Sciences Ukrainian SSR, Winner of the Lenin Prize

"Does Civilization Stand in Contradiction With Health?"

Moscow, Trud, 29 Aug 71, p 3

Abstract: Evolution adapted the human being to intensive physical loads, constant hunger or danger of it, and limited mental capacity. Today the conditions have changed completely -- physical loads are minimal and food is abundant, while human memory has greatly expanded, specifically in heightened awareness of pain and longer memory of it. This has led to the so-called "diseases of civilization" -- cardiovascular illness, sclerosis, and various types of spasms, as well as neurosis. The causes of them are, simply, that the loads modern people experience are unendurable for an out-of-condition and fattened body. The main failing of modern medicine, which is not to deny its achievements, is that it has been concerned with curing the sick rather than teaching how to be healthy. In passing, it should be mentioned that certain medical dogmas indirectly assist modern diseases. Specifically there are the beliefs that (1) every pain indicates disease; (2) peace and quiet in

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USSR

UDC: 8.74

AMOSOV, N. M., OSTAPOV, Yu. G.

"Mathematical Modeling of the Metabolism of a Cell"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works),
vyp. 25, Moscow, "Nauka", 1972, pp 257-261 (from RZh-Kibernetika, No 6, Jun
72, Abstract No 6V606)

Translation: An analysis of the results of a computer study of biochemical
processes which take place in a living cell.

AMOSEV, A. N.

SO: JPRS 55939
9 MAY 72

GLORIA

Article by AMOSEV, A. N. and AMOSEV, A. N. in Problems of the Theory of the Social System, Moscow, 1971, pp. 12-13, 14.

Society is a complex network of interacting social institutions or systems, each with its own internal logic and structure. The social system is a dynamic process, constantly evolving and changing. The social system is a complex network of interacting social institutions or systems, each with its own internal logic and structure. The social system is a dynamic process, constantly evolving and changing.

To guarantee the progress of the social system toward its chosen goals, as well as to provide its "activity" in doing so, all the laws in the hierarchy of the system must be observed and matched in their activity. The function of this matching is fulfilled by social control.

Strictly speaking, all the activities of man always have been and are regulated and controlled. Thus, the human brain is a regulatory "mechanism" for controlling a large number of inner parameters of the organism and behavior of a given individual in space and time. The specialist -- a doctor, for example -- by observing definite symptoms, arrives at a hypothesis regarding the control of the course of an illness in order to formulate a desirable connection of therapy to be caused by him or herself. However, our knowledge and ability to control complex systems and processes are insufficient. "People do not know," he says, "that the solution to modern problems in the administration of the social, economic, and industrial spheres are within the limits of human capabilities, or that existing activities can be designed to the desired level by education and study." [2] With the development of society, the complexity of the processes maintaining control constantly increases. The sphere of administrative activity for the state, or for maintaining stable operations, becomes more and more difficult. The objective limitation of correct choices for such administrative activity is the human brain, which is not an ideal regulator outside the somatic sphere. This becomes especially apparent in processes of control of complex systems whose operation is determined by an enormous number of dynamically interconnected variables.

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124483

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE DIRECT SYNTHESIS OF P O SUB2 NC SUB6 H SUB4 O(CH SUB2)SUB2 SET (NITROFOS) (I) FROM P NITROCHLOROBENZENE (II) AND HO(CH SUB2)SUB2 SET (III), IN THE PRESENCE OF KOH AND METALLIC UC, WAS CARRIED OUT IN HCONME SUB2 OR ACNME SUB2 BUT GAVE LARGE AMT. OF BY PRODUCTS; IN ME SUB2 SO, THERE ARE NO SIDE REACTIONS. OPTIMIZATION OF THE REACTION CONDITIONS BY A STATISTICAL PLANNING METHOD SHOWS THAT 87PERCENT I IS OBTAINED WITH 3.3:1 III-II, 1.2:1 KOH II, 0.06:1 CU II AT 34DEGREES WITH REACTION TIME 1.33 HR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--OPTIMIZATION OF THE PREPARATION OF SINEPHOS 2 P NITROPHENOXY ETHYL
ETHYL SULFIDE BY THE STATISTICAL PLANNING OF AN EXPERIMENT -U-
AUTHOR-(03)-DAVYDOV, L.A., AMOSOV, G.YA., MANDELBAUM, YA.A.

CCOUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(3), 165-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORGANIC NITRO COMPOUND, ORGANIC SULFUR COMPOUND, ORGANIC
SYNTHESIS, CHLOROBENZENE, COPPER, INDUSTRIAL BYPRODUCT, CHEMICAL PRODUCT
PRODUCTION, INSECTICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/0816

STEP NO--UR/0064/70/046/003/0165/0167

CIRC ACCESSION NO--AP0124483

UNCLASSIFIED

USSR

UDC 632.95

DAVYDOV, L. A., AMOSOV, G. Ya., and MANDEL'BAUM, Ya. A.

"Construction and Study of a Mathematical Model of the Process of Producing Sinerphos (4-Nitrophenoxydiethylsulfide)"

V sb. Khim. sredstva zashchity rast. (Chemical Protection of Plants -- collection of works), No 2, Moscow, 1972, pp 11-18 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N514 by A. F. Grapov)

Translation: The method of statistical planning of an experiment was used to find the optimum parameters of the process of producing sinerphos from $\text{ClCH}_2\text{CH}_2\text{SEt}$ (I) and $\pi\text{-NO}_2\text{C}_6\text{H}_4\text{OH}$ (II). I:II molecular ratio 1.07, KOH:II molecular ratio 1.45, reaction temperature 85°, time 56 min, yield of $\pi\text{-NO}_2\text{C}_6\text{H}_4\text{CH}_2\text{CH}_2\text{SEt}$ 88.4%.

USSR

AMOSOV, A. P., et al., Doklady Akademii Nauk SSSR, Vol 209, No 6, Apr 73, pp 1361-1364

the induction of inflammation at maximal temperature T_m . Since on the average

α_{cr} was found to be ≈ 10 , α_{ad} is less than or equal to $0.1 \alpha_m$.

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Explosives and Explosions

USSR

UDC 662.215.5 + 539. 3

ANOSOV, A. P., EGSTANDZHIYAN, S. A., and ZINENKO, ZH. A., Institute of Chemical Physics, Academy of Sciences USSR, Chernogolovka Moskovskaya Oblast'

"Heating-up and Ignition of Solid Explosives Under Shear Destruction"

Moscow, Doklady Akademii Nauk SSSR, Vol 209, No 6, Apr 73, pp 1361-1364

Abstract: In an attempt to determine conditions at which the formation of the foci of explosion initiation occur as a result of the spontaneous elastic discharge of the deformed parts, a theoretical analysis is carried out of the heating-up and ignition of solid explosives under shear destruction. The destruction process of solid explosives is governed by laws derived for plastic metals. The appearance of the heating-up foci resulting from spontaneous elastic discharge of solid explosives during their destruction is possible under conditions of $V > V_{cr} = 1.74$. As far as chemical reaction input is concerned, at small \mathcal{H} it has a negligible effect on the heating-up value. At higher \mathcal{H} the temperature at the friction plane increases explosively. Ignition occurs at \mathcal{H} values exceeding the critical value \mathcal{H}_{cr} . \mathcal{H} Represents the ratio of τ_m to τ_{ad} -- adiabatic period of $1/2$

USSR

UDC 546.882+620.172.24

AMONENKO, V. M., AZHAZHA, V. M., ZEYDLITS, M. P., and SHEVCHENKO, S. V.,
Physical-Mechanical Institute, Academy of Sciences Ukrainian SSR

"Effect of Small Additions of Oxygen and Nitrogen on the Nature of the
Mechanical Properties-Temperature Relationship in Niobium"

Kiev, Problemy Prochnosti, No 6, 1973, pp 54-56

Abstract: The effect of oxygen and nitrogen impurities on the nature of the temperature and strength-ductility properties of niobium was studied. Niobium of 99.8% purity was used which contained metallic impurities of 0.09% Ta and $5 \cdot 10^{-3}\%$ W and Fe, and interstitial impurities of $2 \cdot 10^{-3}\%$ H₂, $5 \cdot 10^{-3}\%$ O₂ and $2.6 \cdot 10^{-3}\%$ N₂. The mechanical properties of niobium were studied in the 20-900 C interval where it was shown that at a strain rate of $1.6 \cdot 10^{-3}$ sec, at 300, 400 and 550 C, maximum strength properties and minimum ductility are observed. Height of the maximums at 300 and 550 C depends on the concentration of oxygen and nitrogen. The smooth change in the mechanical properties of niobium with temperature is associated with the deformation dynamics of aging. 3 figures, 1 table, 9 bibliographic references.

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2/9 037 UNCLASSIFIED PROCESSING DATE--11SEP70
 CIRC ACCESSION NO--AP0105601
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS STUDIED OF RESIDUAL GASES IN VACUUM ANNEALING (5 TIMES 10 PRIME NEGATIVE4 MINUS 5 TIMES 10 PRIME NEGATIVE7 TORR) AT 1000-1600DEGREES ON PURE NB. THE EFFECT OF THIN FILMS OF MO ON NB PROPERTIES AFTER ANNEALING IN VACUO WAS STUDIED ALSO. SPECIMENS (12 TIMES 2 TIMES 1 MM) WERE MADE FROM ROLLED BANDS (DEFORMATION DEGREE 80PERCENT) AND ANNEALED FOR 1 HR AT 1000-1600DEGREES. WHEN THE VACUUM WAS 5 TIMES 10 PRIME NEGATIVE7 TORR, THE TENSILE STRENGTH OF NB WAS LESS THAN THAT WHEN THE VACUUM WAS 10 PRIME NEGATIVE4 TORR; THE RELATIVE ELONGATION INCREASED. HOWEVER, ANNEALING AT IS GREATER THAN 1200DEGREES DECREASED THE RELATIVE ELONGATION, PARTICULARLY AT 10 PRIME NEGATIVE4 TORR. THESE CHANGES ARE DUE TO THE DEVELOPMENT OF PRIMARY AND SECONDARY RECRYSTN. WITH INCREASING GRAIN SIZE AT HIGHER TEMPS. INCREASED TENSILE STRENGTH AND DECREASED RELATIVE ELONGATION IS ASCRIBED TO THE INCREASED GAS CONTENT IN NB. WHEN THE NB SPECIMENS WERE COATED WITH MO, ALL THE ABOVE INDICATED EFFECTS WERE CONSIDERABLY LESS; MO IS LESS AFFECTED BY GASES THAN NB.

UNCLASSIFIED

1/2 037 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--EFFECT OF ANNEALING CONDITIONS ON THE MECHANICAL PROPERTIES OF PURE
NIOBIUM AND MOLYBDENUM COATED NIOBIUM -U-
AUTHOR--AMONENKO, V.M., AZHAZHA, V.M., KOVTUN, G.P.
COUNTRY OF INFO--USSR
SOURCE--FIZ. KHIM. MEKH. MATER. 1970, 5(6), 733-4
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--NIOBIUM, HIGH PURITY METAL, METAL COATING, MOLYBDENUM, METAL
FILM, GAS CONTAINING METAL, VACUUM ANNEALING, METAL DEFORMATION, GRAIN
SIZE, METAL RECRYSTALLIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0622 STEP NO--UR/0369/70/005/006/0733/0735
CIRC ACCESSION NO--AP0105601
UNCLASSIFIED

USSR

AZIMZHA, V. K., et al, Fizika i Khimiya Obrabotki Materialov, No 3, 1964, 7, pp 59-62

samples of molybdenum almost always begins on the grain boundary, with the propagation of the fracture can have a transcrystalline nature. The diffusion of titanium along the grain boundaries neutralizes the effect of the interstitial admixtures which usually are isolated along the grain boundaries and weaken the boundaries. This decreases the probability of occurrence of centers of fracture along the grain boundaries and leads to a more uniform deformation of molybdenum. This explains the fact that the maximum elongation of the molybdenum samples is reached with a titanium film 1 micron thick after annealing in the temperature range of 1000-1100°C.

USSR

ENCLOSURE

AZHAROVA, V. M., ALDASHIN, V. M., KIVILIN, G. P., KIRILASHIN, N. S.

"Effect of Titanium Coatings on the Plasticity of Molybdenum."

Moscow, Fizika i Khimiya Gornotekhnicheskikh Materialov, No 3, May-Jun 78, pp 54-57.

Abstract: Titanium coatings cause a change in the plasticity of molybdenum. The nature and degree of the effect of the coatings depend on the thickness of the coating, the annealing conditions, and other factors. Titanium films up to 1 micron thick cause an increase in the elongation per unit length of molybdenum after annealing in the temperature range of 450-1100°C. Films 10 microns thick and more increase the plasticity of molybdenum if the annealing temperature after coating does not exceed 700°C, and they cause embrittlement after annealing above 700°C. The mechanism of the effect of titanium coatings on the plastic properties of molybdenum is discussed. Additional data are given on the effect of titanium coatings on the plastic properties of molybdenum and on the causes of the plasticizing and embrittling effect of titanium coatings.

Microphotographs of the samples after various heat treatments are presented. It is pointed out that during the process of annealing, diffusion of titanium in the surface layers of molybdenum takes place primarily with respect to the lattice defects, in particular, along the grain boundaries. In molybdenum the grain boundaries are the most probable centers of fracture. Fracture of polycrystalline

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USSR

IVANOV, V. YE., et al., Fizika i Khimiya Obrabotki Materialov,
No 2, Mar-Apr 71, pp 101-105

of brittle compounds at the titanium-steel division boundary,
allows the production of the material with high strength, good
impact toughness, fatigue resistance, and satisfactory ductility.

USRR

UDC 621.791.1

IVANOV, V. YE., AMONENKO, V. M., GODIN, V. M., RYBAL'CHENKO, N. D., TRON', A. S., and YAKUSHIN, A. F., Khar'kov

"Properties of Compounds of Ti Alloys With Steel Made in Thin Layers"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar-Apr 71, pp 101-105

Abstract: The strength and plastic properties of the bimetals VT6S-lKhk8N10T, OT4-lKh18N10T, Vt14-lKh18M10T, and AT2-Khk8k0T with niobium-copper interlayers were studied in the temperature range from -196 to +1,000°C. The influence of the dimensional factor on the effect of contact hardening of the interlayer was established. The increase in the strength of the thin copper interlayers is explained by specifics of the stress state of the metal with low yield point, located between two stronger metals. This state of the metal during deformation results in higher shear stresses, resulting from blocking of dislocations by the stronger metal at the division boundary. The use of these thin interlayers of copper and niobium, preventing the formation

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USSR

UDC 621.79.027

AMONENKO, V. M., AZHAZHA, V. M., V'YUGOV, P. N., GUMENYUK, V. S., and
SIVOKON', V. V.

"The Possibility of Purification of Chemically Active Metals by Zone Melting"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory
and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 5-12

Translation: An installation is described for zone cathode ray melting of
zirconium with a residual pressure of $\sim 5 \cdot 10^{-8}$ torr. The heating chamber,
sealed with metal, is evacuated with two oil-vapor pumps with sorption traps.
Data are presented on the partial pressures of residual gases and their
changes as functions of the duration of operation of the installations with
the sorption traps. It is demonstrated that the use of the new 5F-4E vacuum
oil as a working fluid in the oil-vapor pumps is promising for the production
of vacuums of $\sim 4 \cdot 10^{-6}$ in metallurgical pipe installations. Data are pre-
sented on zone purification of zirconium in a vacuum of $7 \cdot 10^{-8}$ - $1 \cdot 10^{-7}$ torr.
5 Tables; 6 Figures; 2 Bibliographic references.

1/1

USSR

IVANOV, V. YE., et al., Fizika i Khimiya Obrabotki Materialov,
No 2, Mar-Apr 71, pp 101-105

of brittle compounds at the titanium-steel division boundary,
allows the production of the material with high strength, good
impact toughness, fatigue resistance, and satisfactory ductility.

USRR

UDC 621.791.1

IVANOV, V. YE., AMONENKO, V. M., GODIN, V. M., RYBAL'CHENKO, N. D., TRON', A. S., and YAKUSHIN, A. F., Khar'kov

"Properties of Compounds of Ti Alloys With Steel Made in Thin Layers"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar-Apr 71, pp 101-105

Abstract: The strength and plastic properties of the bimetals VT6S-1KH18N10T, 07A-1KH18N10T, Vt14-1KH18N10T, and AT2-1KH18N10T with niobium-copper interlayers were studied in the temperature range from -195 to +1,000°C. The influence of the dimensional factor on the effect of contact hardening of the interlayer was established. The increase in the strength of the thin copper interlayers is explained by specifics of the stress state of the metal with low yield point, located between two stronger metals. This state of the metal during deformation results in higher shear stresses, resulting from blocking of dislocations by the stronger metal at the division boundary. The use of these thin interlayers of copper and niobium, preventing the formation

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USSR

UDC 539.3:551.243

AMMER, S. A., DARINSKIY, B. M., and KOSILOV, A. T.

"Dislocational Internal Friction in Deformed Whiskers"

V sb. Vnutr. treniye v metallich. materialakh (Internal Friction in Metallic Materials -- collection of works), Moscow, Nauka Pub. House, 1970, pp 65-67 (from RZh-Mekhanika, No 12, Dec 70, Abstract No 12V513, Authors' Abstract)

Translation: Recovery and the temperature dependence of internal friction of copper whiskers deformed by twisting are studied. A rise in $Q^{-1}(T)$ in the 100-150° temperature range is observed. This coincides, as to temperature, with the first recovery stage, while at temperatures higher than 500° it also coincides with the second recovery stage. It is assumed that recovery occurs due to the motion of screw dislocations and surfaces, which then surmount obstacles in the form of their intersections with other screw dislocations located in other slip planes. A formula is derived for calculating the internal friction, allowing for the aftereffect rate, frequency of specimen vibration, and activation volume. The length of the dislocational segments making the basic contribution to Q^{-1} is estimated. Bibliography: 5 entries.

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USSR

UDC 539.67

AMMER, S. A., DARINSKIY, B. M., and KOSILOV, A. T.

"Dislocation Internal Friction of Deformed Thread-Like Crystals"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 65-67

Abstract: Recovery and the temperature dependence of internal friction of torsionally deformed thread-like copper crystals are studied. The growth of $Q^{-1}(T)$ at 100-150° C is observed, which coincides in temperature, with the first recovery stage, and at higher than 500° C temperature also coincides with the second stage of recovery.

It is assumed that the recovery occurs because of spiral dislocations and surface motion, which overcome obstacles in the form of their intersection with other spiral dislocations located in the other slip surfaces.

A formula is obtained for determining the internal friction with consideration of the secondary action speed, the vibration frequency of a sample, and the activation volume. The length of dislocation segments, contributing mainly to Q^{-1} , is evaluated. 1 figure, 5 references.

1/1

USSR

UDC 548.5:539.4

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

"Internal Friction and Strength of Germanium Whiskers"

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

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

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USSR

UDC 547.944/945

YAGUDAYEV, M. R., MATKHALIKOVA, S. F., AMLIKOV, V. M., YUNUSOV, S. YU., Order of the Red Banner of Labor Institute of the Chemistry of Plant Substances of the Uzbek SSR Academy of Sciences

"Study of the Stereochemistry of the Alkaloids of Codonopsin and Codonopsinin by the Method of Nuclear Magnetic Resonance Spectroscopy"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 4, 1972, pp 495-498

Abstract: A structure was proposed previously for the new alkaloids -- codonopsin (I) and codonopsinin (III) isolated from *Codonopsis clematidea* on the basis of chemical transformations and spectral data (S. F. Matkhalikova, et al., KhPS, 30, 1969; S. F. Matkhalikova, et al., KhPS, 210, 1971). A study has now been made of the nuclear magnetic resonance spectra of the bases and their acetyl derivatives in order to establish the spatial structure of these alkaloids. The N-methylpyrrolidine ring A has a semicruciformation with relative reciprocal arrangement and orientation of the protons and H₁ and H₃ - α groups pseudoequatorial, H₂ and Ph- β equatorial, and C-CH₃- β pseudoaxial, OR₁- α pseudoaxial, OR₂- β pseudoaxial and H₄- α pseudoaxial.

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2/2 021

UNCLASSIFIED

PROCESSING DATE 4/15/77

CIRC ACCESSION NO--AP0101727

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE PAPER PRESENTS INCIDENCE OF ERYSIPELOID MOSTLY AMONG WORKERS OF MEAT PLANTS OF 4 TOWNS OF THE LITHUANIAN SSR (VILNIUS, KAUNAS, KLAIPEDA, SHAULAY) IN 1940-1966. A TOTAL OF 1756 CASES OF ERYSIPELOID WERE REPORTED, OF THEM 96% IN MEAT PLANTS AND 790 IN ENVIRONMENTAL CONDITIONS. ALMOST ALL CASES OF THE DISEASE WERE ASSOCIATED WITH A PREVIOUS MICROTRAUMA DURING TREATMENT OF MEAT PRODUCTS. CONDITIONS OF INCIDENCE, DURATION OF INVALIDITY, COEFFICIENT OF INCIDENCE IN ENTERPRISES WERE STUDIED. MEASURES FOR CONTROL OF THE DISEASE IN MEAT PLANTS WERE DEVELOPED. THE CLINICAL PICTURE AND TREATMENT OF ERYSIPELOID ARE DESCRIBED.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--11/01/70
TITLE--INCIDENCE OF ERYSIPELOID IN THE LITHUANIAN SSR -U-

AUTHOR--AMITINA, E.B. *A*

COUNTRY OF INFO--USSR

SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 2, PP 36-61

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INDUSTRIAL HYGIENE, FOOD INDUSTRY, FOOD CONTAMINATION,
ERYSIPELAS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1045/1672

STEP NO--UR/0206/70/000/001/005/73-1

CIRC ACCESSION NO--AP0101727

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NU--AP0105042

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEASUREMENTS WERE CARRIED OUT OF SP. HEAT AND ELECT. RESISTANCE OF DY CLOSE TO THE NEEL POINT. CONSIDERABLE DEVIATIONS EXIST FROM THE EXPECTED PROPORTIONALITY BETWEEN THE MAGNETIC PART OF SP. HEAT AND THE DERIV. OF ELEC. RESISTANCE WITH TEMP. THE TEMPS. CORRESPONDING TO THE EXTREMES OF THE STUDIED PROPERTIES DO NOT COINCIDE. AN ATTEMPT WAS MADE TO DET. THE FORM OF THE FUNCTION WHICH DESCRIBED THE PECULIARITY OF SP. HEAT, WITHOUT THE CHOICE OF THE NEEL POINT. FACILITY: INST. NEORG. KHIM., NOVOSIBIRSK, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--TEMPERATURE FUNCTION OF THE SPECIFIC HEAT AND ELECTRIC RESISTANCE
OF DYSPROSIUM NEAR THE NEEL POINT -U-
AUTHOR-(04)-AMITIN, YE.B., KOVALEVSKAYA, YU.A., RAKHMENKULOV, F.S.,
PAUKOV, I.YE.
COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 774-80

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RESISTIVITY, SPECIFIC HEAT, DYSPROSIUM, TEMPERATURE
DEPENDENCE, NEEL TEMPERATURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1968

STEP NO--UR/0181/70/012/003/0774/0730

CIRC ACCESSION NO--AP0105042

UNCLASSIFIED

AR0044362

forced regime with a reduced cathode filament voltage with twice the anode permissible load, and with an increase of the cathode temperature. An analysis of the results obtained shows that with tubes with an oxide-coated cathode, the level of the cathode flicker-noise decreases with the growth of the emission current; in this connection, for a reduction of the tube noise it is necessary to maintain the cathode in a condition of high activity to reduce tube noise. N. S.

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2/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
 CIRC ACCESSION NO--AP0115702
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEHYDRATION ACCOMPANIED WITH A
 SIMULTANECUS DECOMPN. TOOK PLACE ON HEATING MG(BF SUB4) SUB2.4H SUB2 O
 AND SR(BF SUB4) SUB2.4H SUB2 O LOST H SUB2 O OF CRYSTN. AT 165DEGREES
 AND 147DEGREES, RESP., WITH A PARTIAL DECOMPN. A COMPLETE DECOMPN. OF
 THE RESULTING FLUOROBORATES OCCURRED AT GREATER THAN 260DEGREES AND
 GREATER THAN 300DEGREES, RESP. DTA SHOWED THAT TEMP. OF THE START OF
 DECOMPN. OF M(BF SUB4) SUB2.NH SUB2 O INCREASED WITH M IN THE ORDER: MG
 IS SMALLER THAN ZN IS SMALLER THAN CO IS SMALLER THAN CA IS SMALLER THAN
 SR.
 FACILITY: PERM. POLITEKH. INST., PERM, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CHEMICAL TRANSFORMATIONS OF MAGNESIUM, CALCIUM, STRONTIUM, ZINC,
AND CADMIUM TETRAFLUOROBORATES DURING HEATING -U-
AUTHOR-(02)-OSTROVSKAYA, T.V., AMIROVA, S.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 657-60

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--DEHYDRATION, THERMAL DECOMPOSITION, BORATE, CHEMICAL REACTION
RATE, MAGNESIUM, ZINC COMPOUND, CADMIUM COMPOUND, CALCIUM COMPOUND,
STRONTIUM COMPOUND, FLUORINE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1883

STEP NO--UR/0078/70/015/003/0657/0660

CIRC ACCESSION NO--AP0115702

UNCLASSIFIED

Acc. Nr.

AP0055925

Abstracting Service:
CHEMICAL ABST.

Ref. Code

UR0078

115226g Thermal decomposition of nitrosyl chloride studied by an ir spectroscopic method. Refer. R. G. Amosov, B. Ya. Yacov, B. Yu. (USSR), Zh. Neorg. Khim. 1970, 15, 10, 1700 (Russ.). Decomposition of NOCl at 400-600°C was investigated in the presence of N or Cl₂. Temp. dependence of the rate constant of the reactions, NOCl → N₂ + Cl₂ and NOCl → N₂O + Cl₂ was studied. Cl₂ + NO → Cl + NO₂, N₂ and N₂O, respectively. The rate constant of the reaction NOCl + Cl₂ → NO₂ + Cl₂ was determined by measuring the thermal conductivity of the mixture at 400-600°C.

REEL/FRAME
19841254

Acc. Nr. **AP0053887** Abstracting Service:
 -- CHEMICAL ABST. 6-70

Ref. Code:

4P0028

117300a Reaction of vanadium bromide with hydrogen, oxygen, and water vapor. Amirova, S. A.; Rupcheva, V. A.; Romanova, T. V. (USSR). *Zh. Neorg. Khim.* 1970, 15(2), 330-4 (Russ). Dehydration of $\text{VBr}_3 \cdot 6\text{H}_2\text{O}$ is accompanied by the hydrolysis of VBr_3 with the intermediate reaction products being VOBr_2 and VOBr_3 . In H atm. VBr_3 was reduced to VBr_2 . The latter was stable up to 1000° . VBr_3 and VBr_2 were oxidized with O at 345° to V_2O_5 . VBr_3 reacted with steam at 180° and VBr_2 at 420° to form V_2O_5 . HMJR

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REEL/FRAME
19830964

18

USSR

UDC 530.161

AMIROV, R. KH., SMOLYANSKIY, S. A., and SHEKHTER, L. SH.

"Inclusion of the Principle of Causality in the Dynamic Description of Non-equilibrium Systems"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 6, 1973, pp 48-51

Abstract: The correction to the Hamiltonian of the system corresponding to the source in the Liouville equation disturbing the invariance of this equation with respect to the time reflection was found by the nonequilibrium statistical operator method. The analysis of this correction permits the conclusion that the forces leading to irreversible behavior of the systems have an essentially nonpotential nature. The inclusion of the causality principle in the Hamiltonian of the system also permits a new representation to be presented for the nonequilibrium statistical operator.

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USSR

UDC 666.76:669.056.9

ABZGIL'DIN, F. YU., AMIROV, R. A., and BIGLOV, A. KH., Ufa Aviation Institute
imeni Sergo Ordzhonikidze, and KHOROSHAVIN, L. B., Eastern Institute of
Refractories

"Refractory Coatings on Phosphate Bonds"

Abstract: Based on results of investigating the adhesive and cohesive strengths and thermal stability of materials on phosphate bonds, optimum compositions of coatings for the alloys 1Kh18N9T, EI-703, Ep-99, VT-9, GT-4, and EI-961, bronze KhO8, molybdenum and graphite were determined. The investigation included refractory coatings based on titanium, zirconium, hafnium, and silicon; hafnium, boron, and silicon nitrides; mullite, magnesian spinel, and calcium, barium, and strontium zirconates; molybdenum disulfide and disilicide and calcium titanate. Results are presented of determinations of working temperatures, ultimate shear strength, thermal stability of coatings, and electric conductivity and temperature conductivity of some compositions. The coatings are recommended as structural materials at 1000-1800°C. The electron-insulating materials on a corundum base can be used for preparing Nichrome tensometers with the mentioned alloys. The coatings materials can also be used as ceramic adhesives for joining alloys, particularly graphite and ceramics, of different compositions. Two figures, three tables, fourteen bibliographic references.

1/1

USSR

UDC: 613.645-07:612.822.3.014.421.7

AMIROV, N. Kh., ZUBAIROVA, G. O., MENDELEVICH, D. M., and KALPINA, G. A., Kazan Medical Institute

"EEG Changes in Persons Working Under Low-Intensity Red Light and in Complete Darkness"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 1, 1971, pp 13-16

Abstract: Bioelectric activity of the brain was studied in several groups of females working in a photographic and motion picture film factory under low-intensity red light or in complete darkness. The EEG's of those working under red light were in most cases characterized by an irregular alpha rhythm localized chiefly in the occipital and parietal regions. The amplitude ranged from 10 to 30 μ v and the frequency was between 8.5 to 12 osc/sec. All the subjects exhibited a distinct beta rhythm of different oscillation frequencies and amplitudes. The EEG's of the women who worked in darkness were characterized in half the cases by a pronounced and regular alpha rhythm (with an average amplitude of 15 to 20 μ v) in the central and temporal regions. In cases where the alpha rhythm was indistinct or absent, the beta rhythm was dominant. The results of functional tests with opening and closing of the eyes confirmed the decrease in level of cortical activity.

USSR

UDC 576.851.48.095.5:576.858.9]:576.851.48.098

AMIROV, E. Ya. and ZAUKIN, V. L., Second Moscow Medical Institute imeni Pirogov

"Induction of λ Phage and Transduction in Bacterial Forms With Altered Synthesis of the Cell Wall"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971, pp 80-83

Abstract: Study of the lon^- and $\text{lon}^- \text{B}$ mutants of E. coli 3RL (λ) and E. coli 3RL-2 (λ) revealed that they are highly sensitive to ultraviolet radiation. Acriflavin increased the mortality rate of the irradiated 3RL-2 mutant, but not to the same extent as that of the original HfrC strain. Both the mutant and the original strain were able to reactivate irradiated phage T7. The kinetics of induction of phage λ in the lon^- mutants differed from the kinetics of induction in the E. coli K-12 (λ) and HfrC (λ) strains. The latter strains had a higher initial degree of induction and a smaller optimum dose. The higher spontaneous yield of the phage, compared with the other strains, was probably related to the $\text{lon}^- \text{B}$ mutation. Lysates of phage λ obtained from the lon^- mutants were able to effect the transduction of the gal^+ marker to gal^- recipients with the usual frequency.

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USSR

UDC 539.3'

AMIRO, I. YA., POLYANKOV, P. S., PALAMARCHUK, V. G., (Kiev), Institute of Mechanics, Ukrainian SSR

"The Stability of Cylindrical Shells of Imperfect Shape"

Kiev, Prikladnaya Mekhanika, Vol 7, No 8, 1971, pp 9-15

Abstract: The problem of the stability of ribbed cylindrical shells, the initial deflections of which are given in the form of the double trigonometric series, is solved on the basis of an energy method in a geometrically non-linear formulation with account taken of the discrete position of the supporting ribs. The obtained solution is used for determining the theoretical values of the critical loads of tested ribbed and smooth shells, which are subjected to appropriate measurement before loading. A comparison is made of the theoretical and experimental values of the critical loads, and it was disclosed that the difference for all tested shells does not exceed 17%, which constitutes satisfactory agreement. One figure, two table, three references.

1/1

2/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0131186
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. B-5 FRAGMENT OF PEPSIN,
REPRESENTING THE CENTRAL PART OF ITS MOL. AND ATTACHED TO THE N-TERMINAL
B-2 FRAGMENT OF THE ENZYME, WAS COMPOSED OF 40-3 AMINO ACIDS. ITS
STRUCTURE WAS AS FOLLOWS: ASP-GLY-GLU-THR-ILE-(THR, GLY, SER,
ALA)-.....-LEU-THR-GLY-PRO-THR-SER-ALA-....(SER, AL, ILE)-MET.
FACILITY: INST. KHIM. PRIR. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--B, D FRAGMENT FORMED DURING THE SPLITTING OF PEPSIN BY CYANOGEN
BROMIDE -U-
AUTHOR-(04)-SUPOVA, I.A., AMIRKHANYAN, M.M., MATVEYEVA, R.A., STEPANOV,
V.M.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PRIR. SOEDIN. 1970, 6(1), 144
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PEPSIN, FRACTIONATION, CYANOGEN COMPOUND, BROMIDE, AMINO ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3094/0563 STEP NO--UR/0393/76/006/001/0144/0144
CIRC ACCESSION NO--AP0131186
UNCLASSIFIED

USSR

UDC 621.357:621.79.027

MYZDRIKOV, A. M., AMIRKHANOVA, N. A., ZHURAVSKIY, A. K.

"Selection of Electrolytes for Electrochemical Machining"

V sb. Novoye v elektrofiz. i elektrokhim. obrabotke materialov (What's New in Electrophysical and Electrochemical Treatment of Materials -- collection of works), Leningrad, Mashinostroyeniye Press, 1972, pp 21-23 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L300)

Translation: The potentiostatic method of studying the anode behavior of El-961 alloy in solutions of different composition is used to select the optimal composition of the electrolyte for electrochemical dimensional machining. This is an aqueous solution of 15% NaCl and 5% NaNO₃.

USSR

AMIRKHANOVA, N.A., ZHURAVSKIY, A.K. and USKOVA, N.G., Ufa

"Anodic Dissolution of Nickel-Base Heat-Resisting Alloys in Salt Solutions as Applied to EKhr0 (Electrochemical Dimensional Finishing of Metals)"

Kishinev, Electronnaya Obrabotka Materialov, Applied Physics Institute, Academy of Sciences, Moldavian SSR, No 6, 1972, pp 19-23

Abstract: The electrochemical metal finishing is achieved by anodic dissolution of metal in the electrolyte. 12 electrolytes of different chemical composition were tested with four nickel-base heat-resisting alloys. The specimens were cylindrical, 5 mm diameter, rotating at 800 rpm. Graphs show the dissolution speed as a function of applied voltage. Tests showed that electrolytes having a NaCl base are the most productive. With electrolytes having a NaNO₃ base the anodic dissolution is preceded by oxidation, which causes a non-uniform anodic dissolution and resulting rough surface finish.

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USSR

UDC 621.382.002

AMIRKHANOVA, I.B., GVEROTSITELI, I.G., GOLDAKASHVILI, A.I., GOLUBOV, V.B.,
DANSAMIDZE, E.M., ZASLAVSKIY, S.A., KARPENKO, T.T.

"Doping Of Silicon By Ion Bombardment"

V sb. Radiats. fiz. nemet kristallov (Radiation Physics Of Nonmetallic Crystals--Collection Of Works), Vol 3, Part 2, Kiev, "Nauk.dumka." 1971, pp 111-122 (from REZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 103436)

Translation: Doping of n-silicon with a resistivity of 0.035--150 ohm.cm was conducted by polyenergetic beams of boron ions with a current density of 10 ma.cm⁻², and maximum energy of 300 plus or minus 0.150 kev with doses of 1 . 10¹⁵ -- 1 . 10¹⁷ cm⁻². The uniformity of doping was attained by scanning and amounted to 10 percent. Annealing of the doped specimens was conducted in a vacuum at a temperature of 500--700° C during the course of 30 min. the method of studying the specimens and the results obtained are described. 7 ill. 8 ref. I.M.

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- 160 -

USSR

UDC: [537.226+537.311.33]: [537+535]

BABAYEV, A. A. and AMIRKHANOVA, D. Kh.

"Mobility of Light and Heavy Holes in Gallium Antimonide"

Sb. nauch. soobshch. Dagestan. un-t. Fizika (Scientific Reports, Daghestan University, Physics--collection of works) No. 1(5), pp 18-27 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E1067)

Translation: Results are given of measurements of the Nernst-Ettingshausen (NE) effects in GaSb monocrystals with various hole concentrations, in the temperature region of 4.2-100° K at magnetic field intensities of up to 28 kOe. The transverse NE effect is negative and goes through a maximum in the low-temperature region. The longitudinal NE effect is positive in the specimens investigated and is a function of the square of H in field intensities of up to 15 kOe. The mobility of the heavy and light holes is computed from the measurement results.

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USSR

UDC: [537.226+537.311.33] : [537+535]

AMIRKHANOVA, D. Kh.

"Electrical Characteristics of Gallium Antimonide in Helium Temperature Regions"

Sb. nauch. soobshch. Dagestan. un-t. Fizika (Scientific Reports, Daghestan University, Physics) No. 1(5); 1970, pp 10-17 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E1057)

Translation: Electrical conductivity, reluctance, and Hall effect of GaSb, p-type, were measured in the temperature region of 1.7-50° K. On the basis of the results obtained, the concentration and mobility of the charge carriers were computed, and the depth of the acceptor level was estimated. G. I. Makovetskiy

2/2 015

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107294

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HEAT CAPACITY OF CO US82 AT CONST. VOL C SUBV WAS EXPTL. DETD. IN AN ADIABATIC CALORIMETER AT 7-120DEGREES AND AT THE SP. VOL V 1.203-2.002. ON THE ISOCHORES ABOVE THE CRIT. POINT A MIN. IN C SUBV WAS OBSERVED, WHICH SHIFTED TO HIGHER TEMPS. WITH INCREASE IN V. A SHARP MAX. IN C SUBV OCCURRED AT THE CRIT. POINT.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--02 OCT 70
TITLE--EXPERIMENTAL DETERMINATION OF THE SPECIFIC HEAT OF SUBV LIQUID
CARBON DIOXIDE -U-
AUTHOR-(03)-AMIRKHANOV, K.H.I., POLIKHRONIDI, N.G., BATYROVA, R.G.
COUNTRY OF INFO--USSR
SOURCE--TEPLOENERGETIKA 1970, 17(3), 70-2
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SPECIFIC HEAT, MEASUREMENT, CARBON DIOXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0752 STEP NO--UR/0046/70/017/003/0070/0072
CIRC ACCESSION NO--AP0107294
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124658

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ONE OF THE DIFFICULTIES IN THE DESCRIPTION OF REACTIONS WITH THREEFREE PARTICLES AT THE BEGINNING OR THE END OF THE PROCESS IN THE FRAMEWORK OF MULTI,CHANNEL FORMALISM IS A CORRECT FORMULATION OF THE BOUNDARY CONDITIONS. A METHOD OF AVOIDING THIS TROUBLE IS SUGGESTED. FACILITY: OB'YEDINEN'YY INSTITUT.
FACILITY: YADERNYKH ISSLEDOVAN Y.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DESCRIPTION OF TRIPLE COLLISIONS IN THE THEORY OF STRONG INTER
CHANNEL COUPLING -U-
AUTHOR-(03)-AMIRKHANOV, I.V., SMEDARCHINA, Z.K., KHRISTOVA, YE.K.

COUNTRY OF INFO--USSR

SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 3, PP
392-404
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NUCLEAR MODEL, NUCLEAR REACTION, THREE BODY PROBLEM, BOUNDARY
VALUE PROBLEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0999

STEP NO--UR/0646/70/003/003/0392/0404

CIRC ACCESSION NO--AP0124658

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--70NOV70
CIRC ACCESSION NO--AF0130415
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE ADRENERGIC STRUCTURES OF THE
POSTERIOR HYPOTHALAMIC NUCLEUS OF ANIMALS SEEMED TO PERCEIVE THE ACTION
OF HYROID HORMONES, AND THROUGH THESE BRAIN STRUCTURES THYROXINE CAN ACT
DIRECTLY ON THE ADAPTATION ACTIVITY. THYROXINE ADMINISTERED AT 10
MUG-KG DIRECTLY INTO THE NUCLEUS SHORTENED THE LATENT PERIOD FOR
CONDITIONED REFLEX ACTIVITY AND INCREASED BOTH CONDITIONED AND
NONCONDITIONED SALIVATION, BUT REDUCED SALIVATION AFTER TERMINATION OF
NONCONDITIONED STIMULI. THYROXINE ADMINISTERED AGAINST A BACKGROUND OF
AMINAZINE (0.05-0.1 MG-KG) SIGNIFICANTLY INHIBITED CONDITIONED REFLEX
ACTIVITY. FACILITY: INST. NORM. PATOL. FIZIOL., MOSCOW, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF THYROID HORMONES INJECTED INTO THE POSTERIOR HYPOTHALAMIC
NUCLEUS ON CONDITIONED REFLEX ACTIVITY -U-
AUTHOR--(02)--ADIRAGOVA, M.G., BERLINA, M.A.

COUNTRY OF INFO--USSR

A

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 720-2

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--THYROID HORMONE, BRAIN, CONDITIONED REFLEX, SALIVARY GLAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3973/1486

STEP NO--UR/0020/70/191/003/0720/0722

CIRC ACCESSION NO--ATC130415

UNCLASSIFIED

272 021 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AT0130414
ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. EXPERIMENTAL INVESTIGATION SHOWING
THAT THE DORSOMEDIAL NUCLEUS OF THE THALAMUS IS THE PRINCIPAL SWITCHING
POINT OF STIMULI, ASSOCIATED WITH THE INTRODUCTION OF THYRXIN INTO THE
POSTERIOR HYPOTHALAMIC NUCLEUS, TO THE CORTEX. IT IS FOUND THAT
DEACTIVATION OF THE ADRENERGIC STRUCTURES OF THE DORSOMEDIAL NUCLEUS OF
THE THALAMUS LEADS TO SUPPRESSION OF CONDITIONED REFLEX ACTIVITY.
FACILITY: AKADEMIYA MEDITSINSKIKH NAUK SSSR, INSTITUT NORMAL'NOI I
PATOLOGICHESKOI FIZIOLOGII, MOSCOW, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--MECHANISM OF TRANSMISSION OF HORMONAL STIMULI FROM THE POSTERIOR
HYPOTHALAMUS TO THE CEREBRAL CORTEX -U-
AUTHOR-(CZ)-AMIRAGOVA, S.G., BERLINA, M.A.

COUNTRY OF INFO--USSR

SOURCE--GERMANY, VOL. 191, APR. 11, 1970, P. 1186-1188

DATE PUBLISHED--11APR70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--THYROID HORMONE, BRAIN, CONDITIONED REFLEX, INHIBITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PRIMRY KEY/FRAME--3003/1485

STEP NO--0070020/70/191/007/1186/1188

CIRC ACCESSION NO--AT0130414

UNCLASSIFIED

USSR

YUSUPOV, K. Yu., Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 50-54

their wider scope of activity and contacts, in recent years it has affected mostly children up to 14 years of age. Prophylactic inoculation is less extensive in this age group, and personal hygiene is poorer, there is greater contact with polluted water, and natural and artificial immunity levels are lower. Carriers are now believed to be primary sources of infection, and because they are difficult to detect in the mildest of cases, timely diagnosis with early laboratory tests, isolation and decontamination are of utmost importance. Extensive application of bacteriophage therapy, as well as inoculations with V-antigen are recommended for children under two years of age.

2/2

USSR

YUSUPOV, K. Yu., Senior Scientific Associate and ~~AMINZADE, Z. M.~~, Uzbek Scientific Research Institute of Epidemiology, Microbiology and Infectious Diseases

"Epidemiological Characteristics of Typhoid-Paratyphoid in Uzbekistan"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 50-54

Abstract: Although the incidence of typhoid fever and paratyphoid, among other infectious diseases, has fallen sharply because of improved living conditions in the USSR after World War II, it is still high in the republics of Central Asia. A characteristic of typhoid-paratyphoid is its uneven territorial distribution: up to 45% of all cases for the USSR occur in Central Asia and Armenia, which have only 14% of the entire population of the country. Studies show that typhoid and paratyphoid are transmitted mainly through polluted water in open reservoirs used for household purposes. In recent years the incidence of these diseases has been increasing in rural localities as compared to urban centers, which may be attributed partially to better health education, sanitation, and medical service in urban areas. The seasonal increase in typhoid paratyphoid, due perhaps to more active spread of the infection during the summer and fall months, is very pronounced in Uzbekistan, where it has not yet been successfully controlled. Whereas in the past typhoid paratyphoid affected mainly people in their prime, because of

1/2

2/2 029

UNCLASSIFIED

PROCESSING DATE: 04/01/01

CIRC ACCESSION NO--AP0140747

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITIES OF EXPERIMENTAL METHODS FOR STUDYING THE DYNAMIC PROPERTIES OF SPACE VEHICLES ARE EXAMINED; SPECIAL CONSTRUCTIVELY SIMILAR MODELS ARE ANALYZED. EMPHASIS IS ON AN ANALYSIS OF SIMILARITY CRITERIA AND ON THE PECULIARITIES INVOLVED IN DESIGNING, FABRICATING AND TESTING CONSTRUCTIVELY SIMILAR MODELS. AS AN ILLUSTRATION OF THE EFFECTIVENESS OF SUCH EXPERIMENTAL METHODS THE AUTHORS GIVE SOME RESULTS OF FREQUENCY TESTS OF A METHODOLOGICAL MODEL AND A MODEL OF THE VOSTOK CARRIER ROCKET AT A SCALE OF 1:10. A PICTURE OF THE MODEL ACCOMPANIES THE TEXT. THE MODEL WAS ABOUT 4 M LONG AND THE DIAMETER AT THE BASE WAS ABOUT 1 M. ALL COMPONENTS OF THE MODEL DETERMINING ITS ELASTIC SYSTEM WERE FABRICATED FROM THE SAME MATERIALS AS THE VOSTOK SHIP. THE ARTICLE WAS WRITTEN ON THE BASIS OF MATERIALS COLLECTED DURING INVESTIGATIONS MADE BY THE AUTHORS DURING 1958-1961. THE PAPER GIVES THE RESULTS OF CALCULATIONS ON AN ELECTRONIC COMPUTER AND TESTS OF THE REAL SHIP.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--USE OF CONSTRUCTIVELY SIMILAR MODELS FOR INVESTIGATING THE DYNAMIC
PROPERTIES OF SPACECRAFT -U-
AUTHOR-(03)-MIKISHEV, G.N., STEPANENKO, B.G., AMINOV, V.R.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KOSMICHESKIYE ISSLEDOVANIYA, VOL VIII, NO 3, 1970, PP
329-340
DATE PUBLISHED-----70

SUBJECT AREAS--SPACE TECHNOLOGY, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--STRUCTURE DYNAMIC STABILITY, MODEL, SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605017/E01 STEP NO--UR/0293/70/008/003/0329/0340

CIRC ACCESSION NO--AP0140747
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AP0104222
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMONG 26 STUDIED VO PRIME2POSITIVE
MONO AND DICARBOXYLIC ACID COMPLEXES, ONLY THE MAGNETIC SUSCEPTIBILITY
(CHI M) OF VO PRIME2POSITIVE FORMATE HYDRATES AND VO PRIME2POSITIVE
MALONATE HAD CURIE WEISS TEMP. DEPENDENCES WITH POS. WEISS CONSTS. THE
REMAINING VO PRIME2POSITIVE COMPLEXES OF ALKYL OR ARYLCARBOXYLATES HAD
TEMP. INDEPENDENT CHI M. AT ROOM TEMP., THEY HAD LOW MU SUBEFF, WHICH
DECREASED GRADUALLY WITH TEMP. THIS PHENOMENON IS EXPLAINED BY AN
ISOTOPE INTERACTION IN THE LINEAR CHAIN OF PARAMAGNETIC V (IV) IONS WITH
A LARGE (N IS LARGER THAN OR EQUAL TO 10) EVEN NO. OF NUCLEI. THE
EXCHANGE INTEGRALS OF THESE COMPDs. ARE 170-290 CM PRIME NEGATIVE1.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ANOMALIES OF MAGNETIC PROPERTIES OF VANADYL (VO PRIME2POSITIVE)
MONO AND DICARBOXYLATES -U-
AUTHOR-(04)-KALINNIKOV, V.T., ZELENTSOV, V.V., KUZMICHEVA, O.N., AMINOV,
T.G.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(3) 661-5
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--MAGNETIC SUSCEPTIBILITY, TEMPERATURE DEPENDENCE, CARBOXYLIC
ACID, VANADIUM COMPLEX, PARAMAGNETIC ION, EXCHANGE REACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0776 STEP NO--UR/0078/70/015/003/0661/0665
CIRC ACCESSION NO--AP0104222
UNCLASSIFIED

USSR

UDC 547.574.241

LANKINA, T. A., PANFILOVA, Z. F., AMINOV, S. N., AND AKHEMEDOV, K. S.,
Institute of Chemistry, Academy of Sciences ~~Uzbek~~ SSSR

"Synthesis and Surface-Activity Characteristics of Glycol Esters of Alkyl-
phosphonic Acids"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal , Vol 17, No 3, 1973, pp 55-57

Abstract: By the interaction of dichlorides of alkylphosphonic acids with
glycol in the presence of triethylamine in ether solutions at a temperature

$\leq 5^{\circ}$, esters $RP(O) \begin{matrix} \diagup OCH_2CH_2 \\ \diagdown OCH_2CH_2 \end{matrix} O$ were synthesized, where $R = C_{n-2n+1}H_{2n+1}$ and

$n = 6 - 14$. Cyclization of the diglycol esters which formed initially took
place during their distillation in vacuo. The esters with $n = 8 - 14$ showed
a high effectiveness as surface-active agents reducing the surface tension.

USSR

UDC 531.36;531.31;531.391.5

AMINOV, M. SH.

"Stability of Nonsteady-State Ocean"

Tr. Kazan. aviats. in-ta (Works of the Kazan' Aviation Institute), 1972, vyp. 149, pp 3-14 (from RZh--Mekhanika, No 6, Jun 73, Abstract No 6A107)

Translation: The Chetayev method of obtaining the sufficient conditions of stability of the solution of a system of ordinary differential equations by means of the limiting system is generalized to the case where the limiting system has purely imaginary or zero roots of the characteristic equation. A study was made of several problems in which the problem of the stability of the motion of a body of variable mass is solved by the proposed method.

1/1

2/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0124908
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GENERAL EXPRESSION IS GIVEN FOR
THE PROBABILITY OF A DIRECT (1 PHONON) RELAXATION TRANSITION FOR AN
ARBITRARY SYMMETRY OF THE ENVIRONMENT OF A PARAMAGNETIC ION WITH AN
EFFECTIVE SPIN OF S EQUALS ONE HALF. THE EXPRESSION, WHICH WAS GIVEN
FOR TETRAGONAL SYMMETRY, IS COMPARED WITH EXPTL. DATA. BETTER AGREEMENT
IS FOUND IF SOME OF THE APPROXNS., WHICH ARE USUALLY USED IN THE
CALCNS., ARE AVOIDED. FACILITY: KAZAN. GOS. UNIV. IM.
UL'YANOVA-LENINA, KAZAN, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--CALCULATION OF SPIN LATTICE RELAXATION TIME -U-
AUTHOR-(02)-AMINOV, L.K., ZAITOV, M.M.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 36-9
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--SPIN LATTICE RELAXATION, PARAMAGNETIC ION, MATHEMATIC
EXPRESSION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1257 STEP NO--UR/0139/70/013/002/0036/0039
CIRC ACCESSION NO--AP0124908
UNCLASSIFIED

USSR

UDC 621.371.332.4

AMINOV, A. N.

"Dispersion Cross Section of Super-Thick Meteor Trails of Effective Lengths Less Than the First Fresnel Zone"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972 pp 478-482 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A348)

Translation: A method is given for calculating the volume density of the ionized gas in a meteor trail satisfying the condition $L \leq F$, where L is the effective length and F is the length of the fundamental Fresnel zone. Bibliography of nine. A. L.

1/1

USSR

UDC 911.3:616.927(575.1)

NEVSKIY, M. V., YESUPOV, K. Yu., AMINADZE, Z. M., KAPLUNOVA, M. S., and PULATOV, Ya. G.

"Morbidity Dynamics of Typhoid and Paratyphoid Fever in the Uzbek SSR"

Nauchn. tr. uchenykh i prakt. vrachev Uzbekistana (Scientific Works of Research and Practicing Physicians in Uzbekistan) 1970, sb. 6, pp 16-20 (from RZh-Meditsinskaya Geografiya, No 4, Abstract No 4.36.203)

Translation: During the years 1958-1965, the Uzbek SSR registered a decrease in the number of cases of all typhoid and paratyphoid by a factor of 2.4; typhoid by a factor of three, while the number of paratyphoid fever cases remained unchanged. In cities the number of typhoid-paratyphoid cases decreased three-fold; in rural areas -- two-fold. In 1958 45.77% of the patients in rural areas had typhoid-paratyphoid and in 1965 -- 54.6%. In the total paratyphoid picture for the past three years, the prevailing form was paratyphoid B, responsible for a 79% morbidity.

USSR

UDC 621.372.852.3(088.8)

ALBATS, M. Ye., AMIANTOVA, L. N., GORYACHEV, Yu. P., SUCHILKIN, V. F.

"Discrete Wave Guide Attenuator"

USSR Author's Certificate No 24880, Filed 15 Aug 67, Published 15 Jan 70
(from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8B212 P)

Translation: The proposed discrete wave guide attenuator consists of a segment of a rectangular wave guide and a series of controlled p-i-n-diodes included in parallel in it with displacement relative to the longitudinal axis. These diodes operate in the closed or open states. In order to decrease the number of diodes, the p-i-n-diodes are installed in the slots of the resonance diaphragms with displacements from the axis of the wave guide segments such that the attenuation introduced by the individual diodes in the open state varies according to the law: $2^{n-1} \cdot Q$, where n is the order number of the diode, and Q is the step variation of attenuation of the attenuator. There is one illustration.

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USSR

UDC 615.371/372.015.4:[612.124:612.118.22]

PLETSITYY, D. F., and AMIANTOVA, L. D., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow

"Immunogenesis and Nonspecific Factors of Natural Resistance. Report IV. Shifts in Properdin Content in Animal Serum During Immunization With Various Vaccines

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunologii, No 9, Sep 70, pp 17-21

Abstract: Shifts in properdin content in the serum of rabbits immunized with AKDC-vaccine and its individual components and smallpox, rabies, and measles vaccines were studied. Properdin was determined by the Pillemer zymase method as modified by Mashkov-Mikhaylova. In some cases accumulation of antibodies was also determined. Eight series of experiments were conducted. A considerable decrease in properdin content, lasting up to three weeks after the administration of the immunizing agents, was noted. The mechanism of the reduction of the properdin level in blood serum is apparently associated with the antigenic properties of the vaccines and, in particular, with the production of specific antibodies.

USSR

AMIANTOV, I. N., et al, Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t 1970. Seks. radiotekhn. Podseks. sistemy svyazi i upr., 1969, pp 3-11 (from RZh-Radiotekhnika, No 2, Feb 70, Abstract No 2G48)

the Rayleigh process an algorithm is obtained for the operation of an optimal receiver with allowance for the dependence of the average value of the amplitude on the target range. The optimal receiver block diagram is described in detail. Two illustrations. Two references. A.M.

2/2

USSR

UDC 621.396.96:621.396.62

AMIANTOV, I. N., ZABOLOTSKIKH, V. G.

"Optimal Algorithss for Constructing Pulsed Coordinate Meter in the Two-Dimensional Rendezvous Problem"

Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970. Sekts. radiotekhn. Podseks. sistemy svyazi i upr. (Reports of the Scientific-Engineering Conference on Advances in Scientific-Research Studies in 1968-1969, Moscow Energetics Institute, 1970. Section on Radio Engineering. Subsection on Communications and Control Systems), Moscow, 1969, pp 3-11 (from RZh-Radiotekhnika, No 2, Feb 70, Abstract No 2G48)

Translation: The synthesis of a radar receiver intended for measuring the coordinates of a moving target is examined. The signal amplitude is represented by samples of a Markovian Rayleigh process. With the aid of the results obtained from filtration of

USSR

UDC 621.391.84

AMIANOV, I.N., ZABLOTERIKH, V.G.

"Some Features Of Filtration Of The Rayleigh Parameters Of Pulse Signals In The Presence Of Interference"

Izv.VUZ: Radioelektronika, Vol XV, No 4, Apr 1972, pp 426-435

Abstract: In a Gaussian approximation of an a posteriori distribution but on the basis of a precise expression for the probability density of transition, new algorithms are obtained of the filtration of a Markov Rayleigh parameter of a signal in discrete time. The results are specified for the case when the Rayleigh parameter is the amplitude of the signal. Two algorithms are realized in the form of block diagrams. A system of automatic gain control is synthesized which makes it possible to achieve optimum receivers for measurement of the non-energy parameters of fading of the pulse signals at stages with a limited dynamic range. 5 fig. 5 ref. Received by editors, 6 July 1971.

USSR

UDC: 621.396.62

AMIANOV, I. N., ZAPOLOTYKH, V. G.

"Optimum Receivers for Measuring Delay Time of Pulse Signals in the Presence of Fading"

Kiev, IVUZ Radioelektronika, Vol 15, No 5, May 72, pp 645-654

Abstract: An optimum receiver is synthesized for measuring the fluctuating time position of an incoherent pulse signal which fades in amplitude. The effect which weight processing of the signal has on measurement precision is considered. Digital modeling is used to find quasioptimum circuits which are fairly simple in realization, and a computational procedure is given. The results of the analysis can be extended to receivers for detecting signals with other types of pulse modulation.

USSR

AMLIANTOV, IL'YA NIKOLAYEVICH, Izbrannyye voprosy statisticheskoy teorii svyazi, Moscow, Izd. "Sovetskoye radio," 1971. 416 pp. 32 tab. 170 fig. 69 ref. 1 r 75 k.

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USSR

AMLIANTOV, IL'YA NIKOLAYEVICH, Izbrannyye voprosy statisticheskoy teorii svyazi, Moscow, Izd. "Sovetskoye radio." 1971. 416 pp. 32 tab. 110 fig. 69 ref. 1 r 75 k.

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USSR

AMIANOV, IL'YA NIKOLAYEVICH, Izbrannyye voprosy statisticheskoy teorii svyazi, Moscow, Izd. "Sovetskoye radio," 1971. 416 pp. 32 tab. 170 fig. 69 ref. 1 r 75. k.

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USSR

AMIANOV, IL'YA NIKOLAYEVICH, Izbrannyye voprosy statisticheskoy teorii svyazi, Moscow, Izd. "Sovetskoye radio," 1971. 416 pp. 32 tab. 10 fig. 69 ref. 1 r 75 k.

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USSR

AMIANOV, IL'YA NIKOLAYEVICH, Izbrannyye voprosy statisticheskoy teorii svyazi, Moscow, Izd. "Sovetskoye radio," 1971. 416 pp. 32 tab. 170 fig. 69 ref. 1 r 75 k.

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AMIANOV, IL'YA NIKOLAYEVICH, Izbrannyye voprosy statisticheskoy teorii svyazi, Moscow, Izd. "Sovetskoye radio," 1971. 416 pp. 32 tab. 6 fig. 69 ref. 1 r 75 k.

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UDC 621.37:621.391.519.27

AMIANOV, IL'YA NIKOLAYEVICH

"Selected Problems Of The Statistical Theory Of Communications"

Izbrannyye voprosy statisticheskoy teorii svyazi (cf. English above), Moscow, Izd. "Sovetskoye radio," 1971. 416 pp. 32 tab. 170 fig. 69 ref. 1 r 75 k.

Abstract: The book contains the principal results of the application of the statistical theory of the transmission of messages to radar and communication systems. Methods are discussed which separate out useful information in radar and communication systems, the circuits are discussed of the corresponding devices, and the errors of their operation are analyzed. The book is intended for radio engineers, students, graduate students, and scientific workers specializing in radar and communication systems.

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Preface

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AMIANOV, I. N., GRUZDEV, V. V., Optimal'nyye diskretnyye sistemy fil'-
tratsii neskol'kikh parametrov, 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.

USSR

UDC: 621.372.061

AMIANOV, I. N., CRUZDEV, V. V., Editorial staff of the Journal "Radio-
tekhnika 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 (cf.
English above), Moscow, 1970, 22 pp, ill. Bibliography of one title (No
2189-70 Dep.) (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A164 Dep.)

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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USSR

UDC 619:616.988.43-097.3

AMFITEATROV, E. Z. (deceased), GIZATULLINA, N. K., and VASYUNIN, V. M.,
Kazan' Veterinary Institute, Kazan', and Kursk Biologicals Factory, Kursk

"Inactivation of the Virus of Foot-and-Mouth Disease With Methylglyoxal"

Moscow, Veterinariya, No 5, May 73, pp 64-65

Abstract: In experiments on foot-and-mouth disease virus of types A and O, methylglyoxal had an inactivating effect on the virus without lowering significantly its antigen activity, as shown by tests on the immunization of rats, rabbits, and mice. The rate of inactivation of the virus increased with increasing concentrations of methylglyoxal (0.01-0.1% applied at 37°), on increasing the temperature of inactivation from 23 to 37°, and with an increasing pH (6.5-8.5). An experimental vaccine for tests was prepared by treating foot-and-mouth disease virus of subtype A₂₂, strain 550, infectious titer 10^{6.5} LD₅₀/ml, with 0.05% methylglyoxal for 8 hrs at pH 7.6 and 37°C and then combining 70% of the inactivated virus suspension with 25% of a 6% suspension of Al(OH)₃, 5% glycerin, and 0.03% saponin.

USSR

AMETISTOV, Ye. V., et al., Tr. Mosk. energ. in-ta, 1972, vyp 104, pp 15-19

In order to assure reliability of contact silver coating about 100-200 Å thick is deposited by vacuum dust-blasting on the ends of microelectrodes and on the surface of the experimental area. It is pointed out that the use of such small-diameter electrodes requires individual calibration of thermocouples (1 illustration, 4 references).

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USSR

UDC: 536.532

AMETISTOV, YE. V. KLIMENKO, A. V. and PAVLOV, YU. M.

"Method of Embedding Thermocouples Into the Surface of Experimental Metal Areas for Nonstationary Temperature Measurement"

Tr. Mosk. energ. in-ta (Transactions of Moscow Power Institute)
1972, vyp 104, pp 15-19 (from Referativnyy Zhurnal-Metrologiya i
Izmeritel'naya Tekhnika, No 8, 1972, Abstract No 8, 32, 868 by V.S.K.)

Translation: When investigating the local temperature variations of metal heating surface under a growing bubble of steam, it should be taken into account that the time of steam bubble growth is measured in milliseconds and its diameter does not exceed several millimeters. The basic problem in conducting such measurements is the need to create special, sufficiently reliable temperature pickups. Two newly developed methods are described of embedding 5-10 copper-constantan thermocouples with reliable silicon-organic insulation into the surface of experimental areas of about 40 mm diameter, practically any thickness and 3-4 mm length.

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1957. I used the first director, graduate of technical sciences Leonid Vasil'yevich Petrov, to tell how another new form of polypropylene had been created.

"Last year the leaders of a Soviet special design bureau asked us to develop a noncombustible polypropylene for the electrical-engineering industry. There are no real electric materials in the industry. As is well known, ordinary polypropylene is a combustible substance, and it was up to us to add a new quality while retaining its good properties of its valuable properties. We worked on this problem for a long time. Finally, after a thousand trials and failures, a non-combustible material was obtained."

Leonid Vasil'yevich took a thin sheet of the new polypropylene, which at first glance was not distinguishable from the others in any way, and held it to a burning candle. In a fraction of a second the edge of the sheet glowed slightly but it did not burst into flame and did not burn.

"Today there is already talk about the industrial use of noncombustible polypropylene," D. V. Litvinov continued. "The introduction of a warning device made of self-extinguishing polymeric material at Kozlov enterprises of Nizhny Novgorod Spetsstroy [Ministry of Installation and Special Construction Work] led to 4 million rubles in savings."

"The new polymer undoubtedly has a great future. Right now our plant laboratory is working on such pressing problems as processes for synthesizing polypropylene, research of the finished polymer's physical and mechanical characteristics, and control of the properties of materials already obtained. Much attention is being paid to their longevity."

"Complete equipment is required for such research. Our factory laboratory is equipped with it. For example, it takes our scientific workers only a few minutes to determine a polymer's structure or to find its weight-average and number-average molecular weight. This takes a much longer time at ordinary laboratories."

"Excellent instrument work depends on people. Highly qualified workers labor in the laboratory. Valentin Fedorovna Petrova has come from the laboratory to leader of the scientific collective. Candidates of chemical sciences V. V. Medvedev and N. N. Gorodetskaya came to us from a scientific research institute, and F. I. Yakobson and M. L. Fridman became scientists at the plant."

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CSO: 1821-S