

1/2 032 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INVESTIGATION OF THE KINETICS OF BETA PHASE DECOMPOSITION IN
TITANIUM BASE MOLYBDENUM ALLOYS -U-
AUTHOR--(02)-KASPAROVA, O.V., POLKIN, I.S.
COUNTRY OF INFO--USSR
SOURCE--TSVETNAIA METALLURGIIA, VOL. 13, NO. 2, 1970, P. 120-125
DATE PUBLISHED----- 70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--TITANIUM ALLOY, MOLYBDENUM ALLOY, PHASE ANALYSIS, X RAY
ANALYSIS, BETA PHASE, METAL PHASE SYSTEM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0195 STEP NO--UR/0136/70/013/002/0120/0125
CIRC ACCESSION NO--AP0123964
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123964

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE KINETICS OF BETA PHASE DECOMPOSITION OF TITANIUM ALLOYS WITH 15, 20, AND 25 PER CENT MOLYBDENUM BY METALLOGRAPHIC, DILATOMETRIC, X RAY PHASE ANALYSIS AND BY DETERMINING THE MECHANICAL PROPERTIES OF THE ALLOYS. IT IS SHOWN THAT BOTH BETA PHASE DECOMPOSITION AND STRAIN HARDENING ARE INHIBITED BY AN INCREASE IN MOLYBDENUM CONTENT, AND THAT AN INCREASE IN MOLYBDENUM CONTENT ALSO LEADS TO AN INCREASED NONUNIFORMITY OF BETA PHASE DECOMPOSITION ACROSS THE GRAINS. IN TITANIUM ALLOYS WITH 15 PER CENT MOLYBDENUM, BETA PHASE DECOMPOSITION IS STILL UNIFORM, WHILE FOR ALLOYS WITH 20 AND 25 PER CENT MOLYBDENUM, IT IS ACCOMPANIED BY THE FORMATION OF BOUNDARY ZONES FREE OF PHASE SEPARATION. FACILITY:
MOSKOVSKII INSTITUT STALI I SPLAVOV, MOSCOW, USSR. FACILITY:
VSESOUZNYI INSTITUT LEGKIKH SPLAVOV.

UNCLASSIFIED

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USSR

UDC 019.941(05)

COR'KOVA, V.I.. MELLION, S.P.. ZAYTSEVA, M.A., ARAKELOVA, L.V., KASPAROVA, V.G., GODUNOVA, L.I., and KASPAROVA, S.G.

"A System for Analyzing a Documental Information Flow Consisting of Scientific Journals"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1, Organizatsiya i Meto- dika Informatsionnoy Raboty, No. 4, 1971, pp 5-9

Abstract: Due partly to great irregularities in the reception of source documents by VINITI [Vsesoyuznyy Institut Nauchnoy i Tekhnicheskoy Informatsii; All-Union Institute of Scientific and Technical Information], there is a delay between the appearance of an original scientific work and VINITI's publication of an abstract of it in the appropriate Referativnyy Zhurnal (an average of 2.0-2.4 months for abstracting and editing and 1.1 month for processing are required). A study revealed that this delay could be reduced if specialized scientific journals were received directly by the editor of the appropriate abstract journal, without the usual preliminary sorting and processing. In order to carry out this study, a system for analyzing primary sources of

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UDC 019.941(05)

GOR'KOVA. V.I., MELLION, S.F., et al., Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1, Organizatsiya i Metodika Informatsionnoy Raboty, No. 4, 1971, pp 5-9

information -- periodic and continuing publications -- was developed and introduced. It enabled the researchers to rank the totality of source journals in descending order of frequency of inclusion of articles from them in the abstract journal for a specific field. From this ranking, a list of the most frequently used journals was obtained for the given abstract journal.

The system for analyzing primary sources, which utilized punchcard processing equipment, the Gamma-10 machine, and a Minsk-22 computer, proved to have great potentialities for the improvement of VINITI's system of information servicing and for the development of the theoretical foundations of systems and structural analysis of information flows.

Although this research was concerned with documental information flows consisting of scientific journals, analogous investigations could be carried out for patent literature and literature of other types.

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UDC 019.941(05)

GOR'KOVA, V.I., MELLION, S.P., ZAYTSEVA, M.A., ARAKELOVA, L.V., KASPAROVA, V.G., GODUNOVA, L.I., and KASPAROVA, S.G.

"A System for Analyzing a Documental Information Flow Consisting of Scientific Journals"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1, Organizatsiya i Metodika Informatsionnoy Raboty, No. 4, 1971, pp 5-9

Abstract: Due partly to great irregularities in the reception of source documents by VINITI [Vsesoyuznyy Institut Nauchnoy i Tekhnicheskoy Informatsii; All-Union Institute of Scientific and Technical Information], there is a delay between the appearance of an original scientific work and VINITI's publication of an abstract of it in the appropriate Referativnyy Zhurnal (an average of 2.0-2.4 months for abstracting and editing and 1.1 month for processing are required). A study revealed that this delay could be reduced if specialized scientific journals were received directly by the editor of the appropriate abstract journal, without the usual preliminary sorting and processing. In order to carry out this study, a system for analyzing primary sources of

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UDC 019.941(05)

GOR'KOVA, V.I., MELLION, S.P., et al., Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1, Organizatsiya i Metodika Informatsionnoy Raboty, No. 4, 1971, pp 5-9

information -- periodic and continuing publications -- was developed and introduced. It enabled the researchers to rank the totality of source journals in descending order of frequency of inclusion of articles from them in the abstract journal for a specific field. From this ranking, a list of the most frequently used journals was obtained for the given abstract journal.

The system for analyzing primary sources, which utilized punchcard processing equipment, the Gamma-10 machine, and a Minsk-22 computer, proved to have great potentialities for the improvement of VINITI's system of information servicing and for the development of the theoretical foundations of systems and structural analysis of information flows.

Although this research was concerned with documental information flows consisting of scientific journals, analogous investigations could be carried out for patent literature and literature of other types.

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1/2 026 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THE DURATION OF PASSIVE IMMUNITY IN PROPHYLAXIS OF TETANUS -U-
AUTHOR--(05)--MATVEYEV, K.I., KASHINTSEVA, N.S., PETROV, P.N., KASPAROVA,
YE.M., KHARMOVA, S.A.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5,
PP 32-36
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PASSIVE IMMUNITY, PROPHYLAXIS, TETANUS TOXOID, TETANUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0104

STEP NO--UR/0016/70/000/005/0032/0036

CIRC ACCESSION NO--AP0114500

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114500

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHANGES OF ANTITOXIN TITRE AFTER THE ADMINISTRATION OF 3,000 AU OF ANTITOXIN SERUM WERE STUDIED ON 98 PATIENTS OF THE TRAUMATOLOGICAL DEPARTMENT OF THE SKLIFOSOVSKY INSTITUTE. BLOOD ANTITOXIN TITRE WAS DETERMINED ON THE 2ND, 4TH, 6TH, 8TH, 10TH, 12TH, 15TH, 20TH AND 30TH DAYS. IN THE MAJORITY OF CASES THE ANTITOXIN TITRE REMAINED WITHIN THE RANGE OF 0.01 AU-ML UP TO THE 8TH-12TH DAY. LATER ITS TITRE DISPLAYED A RAPID FALL. TO INCREASE THE EFFICACY OF TETANUS PROPHYLAXIS IN NONIMMUNIZED WOUNDED PERSONS AN ACTIVE PASSIVE PROPHYAXIS WITH THE SERUM AND TOXOID IS NECESSARY. FACILITY: INSTITUT EPIDEMIOLOGII I MIKROBIOLOGII IM. SAMALEI AMN SSSR AND INSTITUT IM. SKLIFOSOVSKOGO, MOSCOW.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--DEVELOPMENT OF ACTIVE IMMUNITY IN PERSONS AFTER AN ACTIVE PASSIVE
PROPHYLAXIS OF TETANUS -U-
AUTHOR--(05)-MATVEYEV, K.I., BYCHENKO, B.D., PETROV, P.N., KASPAROVA,
YE.M., TRUNOVA, Z.N.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5,
PP 26-32
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ACTIVE IMMUNITY, PROPHYLAXIS, TETANUS, TETANUS TOXOID,
VACCINATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/0103 STEP NO--UR/0016/70/000/005/0026/0032
CIRC ACCESSION NO--AP0114499
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114499

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OF 39 INJURED PERSONS WHO WERE NOT SUBJECTED FORMERLY TO IMMUNIZATION AGAINST TETANUS 45PERCENT IN 3 MONTHS, AND 73PERCENT IN 12 MONTHS, AFTER AN URGENT ACTIVE PASSIVE PROPHYLAXIS (TOXOID PLUS SERUM), WERE PREPARED TO REVACCINATION WITH TOXOID AND REQUIRED NO ADMINISTRATION OF TETANUS ANTISERUM IN REPEATED TRAUMAS. AMONG HEALTHY PERSONS GIVEN A SINGLE INJECTION OF TETANUS TOXOID IN A DOSE OF 20 BU (50 PERSONS), 84PERCENT IN 3 MONTHS, AND 100PERCENT IN 8-12 MONTHS WERE PREPARED TO REVACCINATION WITH THE USUAL DOSE OF THE TOXOID (10 BU). THIS POINTED TO THE POSSIBILITY OF WIDE SINGLE IMMUNIZATION OF ADULT POPULATION WITH SUBSEQUENT REVACCINATION IN 8 TO 12 MONTHS. ANTITOXIC TETANUS ANTISERUM (3,000 IU) INJECTED TOGETHER WITH THE TOXOID (20 BU) PRODUCED SOME DEPRESSIVE EFFECT ON THE DEVELOPMENT OF ACTIVE IMMUNITY IN FORMERLY NON IMMUNIZED PERSONS. PERSONS IMMUNIZED AGAINST TETANUS IN WHOM THE ANTITOXIN TITRE WAS 0.001 IU-ML, EVEN AFTER SEVERE TRAUMAS PRODUCED THE ANTITOXIN RAPIDLY IN RESPONSE TO THE ADMINISTRATION OF THE TOXIN TOGETHER WITH THE SERUM.

FACILITY: INSTITUT EPIDEMIOLOGII I MIKROBIOLOGII IM. GAMALEI AND INSTITUT IM. SKLIFOSOVSKOGO, MOSCOW.

UNCLASSIFIED

USSR

UDC 546.623'882'5

FEIPIOROV, N. F., ANDREYEV, I. F., KASPARYAN, R. M., and SMORODINA, T. P.

"Phase Equilibria in the System $Al_2O_3-Nb_2O_5$ "

Moscow, Neorganicheskiye Materialy, Vol 7, No 4, Apr 71, pp 643-647

Abstract: The phase diagram of the $Al_2O_3-Nb_2O_5$ system was constructed. The system contains three individual compounds. $AlNbO_4$, $AlNb_{11}O_{29}$, and $AlNb_{49}O_{124}$. The first compound melts with decomposition at $1569^{\circ}C$, the two others -- without decomposition -- at 1450 and $1460^{\circ}C$, respectively. The peritectic has a composition equal to 65 mol.% Nb_2O_5 + 35 mol.% Al_2O_3 , while the eutectic corresponds to a composition of 73 mol.% Nb_2O_5 + 27 mol.% Al_2O_3 at $1425^{\circ}C$ and 95 mol.% Nb_2O_5 + 5 mol.% Al_2O_3 at $1435^{\circ}C$.

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- 4 -

USSR

UDC 669.189:669.046.554

KAMARDIN, V. A., RASKEVICH, N. N., and KASPER, N. V., Zaporozh'ye

"Desulfurization of Steel During Outside-Of-Furnace Refining Using Alumosilicate Slags"

Moscow, Akademiya Nauk SSSR. Izvestiya. Metally, No 6, Nov-Dec 72, pp 47-53

Abstract: A study is made of the effect of metallurgical factors (temperature, chemical composition of metal and slag) on the equilibrium and actual distribution of sulfur between metal and slag during outside-the-furnace refining of steel using the basic alumosilicate slags. With the use of basic alumosilicate slags, containing up to 20% SiO₂, with small additions of magnesium oxide and calcium fluoride (~5%), the same degree of desulfurization can be attained as that by using lime-alumina slags.

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- 19 -

Titanium

USSR

UDC 669.15'295-194

KAMARIN, V. A., YEFIMOV, I. V., KASPER, N. V., NIKITIN, B. H., and YAKOVLEV, N. F.

"Role of the Lower Oxides in Titanium Redox Reactions During Electrical Melting of Titanium-Containing Steels"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 72, pp 66-70

Abstract: An investigation was made in an attempt to determine the mechanism of titanium oxidation (reduction) in normal steel melting processes. Tests were made using steel OKh18N10T and a synthetic slag of the $CaF_2-Al_2O_3$ system which were melted in a TVV-5 crucible vacuum furnace. To the molten metal, having a constant alumina content (40%), titanium dioxide was added (up to 20%). With increased TiO_2 concentration, the amount of Ti_2O_3 in the slag also increased and small quantities of TiO were found. These titanium oxides depleted some of the titanium in the original metal and lowered the equilibrium concentration of Ti . In order to neutralize the negative action of weak oxides it is necessary to provide for a higher Ti_2O_3/TiO_2 ratio in the slag, which can be done by having a higher TiO_2 content in the initial slag. Four figures, 1 table, 6 bibliographic references.

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Ion Exchange

USSR

UDC 678.183.123

TULUPOV, P. Ye., BUTAYEV, A. M., GREBEN', V. P., and KASPEROVICH, A. I.,
Scientific Physical-Chemical Research Institute Imeni L. Ya. Karpov, Moscow

"Kinetics of Elimination of the Ion Exchange-Resin Functional Groups. IX.
Reversibility of the Reaction of Hydrolytic Cleavage of the Sulfonyl Group
of KU-2 Cation Exchange Resin"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 47, No 1, Jan 73, pp 150-153

Abstract: The behavior of the cation exchange resin KU-2 X 8 on heating in
a wide range of the concentrations of sulfuric acid solutions was studied.
It was shown that thermal hydrolysis of KU-2 sulfonyl groups is complicated
by sulfation. Kinetic equations were obtained which described the changes
in the exchange capacity of the cation exchange resin with two concurrent
reactions taking place: hydrolysis of sulfonyl groups and sulfation of
the cation exchange resin matrix.

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USSR

REC: 621.039.524.4

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KASPEROVICH, A. I., and BYCHKOV, N. V.

"Activation of Corrosion Products in the Primary Loop of a Nuclear Reactor with Water under Pressure"

Moscow, Atomnaya energiya, Vol 28, No 6, Jun 70, pp 490-491

Abstract: The authors conducted a theoretical study of the accumulation of corrosion products consisting of radioactive isotopes in the primary loop of a reactor with water under pressure. The following were assumed to be the primary sources of activity: activation of corrosion deposits on the active zone surfaces of the reactor and corrosion of the activated structural materials of the reactor. The contribution to this problem of activity formed by the activation of corrosion products in water during circulation through the active zone of the reactor was considered negligible, along with the activity contributed by the bypass purification system. On the basis of these suppositions a differential equation was derived for the activation of the products of corrosion in the primary loop of the reactor. A precise solution is given for (η, γ) reactions and for a loop made from one type of material. A series solution is given for a loop made from several kinds of material. The derived formulas were used for calculating the accumulation of activity (with respect to Cr^{51} , Fe^{59} , and Co^{60} isotopes) in a stainless steel loop.
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USSR

UDC: 681.142.621

ALEKSEYEV, V. A., BELOMESTNYKH, V. A., V'YUKHIN, V. N., KASPEROVICH, A. N.,
POPOV, Yu. A., SOLOVENKO, V. I., Novosibirsk

"A Multipoint High-Speed Digital System for Data Collection and Storage"

Novosibirsk, Avtometriya, No 4, Jul/Aug 71, pp 40-50

Abstract: The article describes a multipoint high-speed digital system for data collection and storage developed at the Atomic Energy Institute of the Siberian Department of the Academy of Sciences of the USSR for converting a large volume of analog information to digital form prior to computer input. The system contains a level-fixing module, a commutator with its own control unit, a data-stacking unit, a core store, a system control unit, and a CRT display. Block and circuit diagrams are presented, and the purpose and operation of each element of the system is described. Initial tests of the pilot model of the system have shown that it satisfies the design requirements. Printed-circuit construction is used, and the system is accommodated in two equipment bays -- one for the system proper, and the other for the core store. Seven figures, two tables, bibliography of two titles.

1/1

- 67 -

USSR

UDC 621.317.3

VEDERNIKOVA, G. A., KASPEROVICH, A. N., Novosibirsk

"Device for Sampling and Storing the Ordinates of a High-Frequency Signal"

Novosibirsk, Avtometriya, No 3, 1971, pp 47-51

Abstract: A sampling and storage device for the ordinates of a high-frequency signal is described which comprises a video amplifier, a storage element, a switch with a control unit and a buffered amplifier. Each element of the sampling and storage device is discussed separately, and the dynamic error of the device is analyzed. Circuit diagrams of the individual elements are presented and the advantages and deficiencies of the particular layouts are discussed. Both closed [P. E. Harris, et al., IEEE Transactions on Electronic Computers, VEC-13, No 3, 1964] and open [Z. A. Khakimogdu, et al., Elektronika, No 6, 1963] are considered. The described open circuit has comparatively small static errors and small aperture time with a field transistor switch designed for successive storage of several ordinates in one channel.

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USSR

UDC: 621.314

KASPEROVICH, A. N., MANTUSH, O. M., PROKOPENKO, V. I.

"Operation of Synchronized 'Voltage-Frequency' Converters"

Novosibirsk, Avtometriya, No 5, 1971, pp 79-85

Abstract: The operation of a synchronized voltage-frequency converter is analyzed, and experimental data concerning its operation is given. It contains a passive RC integrator amplifier which acts as a comparator amplifier, and its sensitivity is determined by the amplifier drift, one of the causes of which is heating in the circuit's input transistor stages. A block diagram of the converter is given and its operation explained. The basic causes of the appearance of nonlinear phenomena of the "dead zone" type are discussed. Since no reservations concerning the type of power supply for the circuit were made in the assumptions on which the analysis was based, the results of the latter are in general valid for synchronized circuits of this type. Results of experiments with the device, achieved in a testing period of 0.1 s, indicate that the synchronized circuit has excellent metrological characteristics.

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USSR

UDC 681.2.08+681.325.5

KASPEROVICH, A. N., SHALAGINOV, YU. V., Novosibirsk

"A Principle of Constructing a High-Speed Analog-to-Digital Conversion System with Adaptive Digitalization"

Novosibirsk, Avtometriya, No 2, 1972, pp 10-17

Abstract: An algorithm was described previously [T. V. Donetskaya, et al., Kibernetika v izmeritel'noy tekhnike. Materialy konferentsii TsNIITFI, Moscow, 1968] for constructing a high-speed data input device for data on a physical process [an analog-to-digital converter] with adaptive digitalization. The algorithm provided for reading each subsequent digit at the time of satisfaction of the condition

$$\delta_d \approx (\Delta F'(t)\Delta t)/B,$$

where δ_d is the allowable error of linear interpolation of the process in the Δt interval; $\Delta F'(t)$ is the increment of the first derivative of the investigated process in the Δt interval; Δt is the duration of the adaptive digitalization interval. It is possible to construct an algorithm similar to that described as applied to the processes having a sign-variable second derivative and also an instrument executing this algorithm in digital form. The principle

1/2

71 -

USSR

KASPEROVICH, A. N., et al., Avtometriya, No 2, 1972, pp 10-17

of constructing such a digital device based on using a tracking analog-to-digital converter with linear extrapolation is described, and study is made of the basic requirements on it and possible technical characteristics. The block diagram of the device is presented, and its operation is described. Theoretical investigation and preliminary simulation shows that for the modern state of the art in Soviet electronics it is possible to expect the following system characteristics: speed in the tracking mode $(5-10) \cdot 10^6$ conversions per second; number of binary bits 8-9; conversion error $\pm 0.5\% \pm 1$ quantum. Adaptive digitalization can be realized for the given error of 1, 2, 4%; the compression efficiency with respect to the preliminary estimate corresponds to the previously obtained efficiency. The described principle of constructing the system insures conversion of analog signals to digital form and exclusion of part of the redundant information. A comparatively insignificant volume of equipment is achieved by the fact that the calculations required for the analog-to-digital conversion and adaptive digitalization are executed by the same units.

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Computers: Digital

USSR

UDC: 681.327

ZINKEVICH, V. P., KASPIROVICH, V. I., SOLOV'YEV, A. L.

"Multivalued Matrix Memories Based on Toroidal Cores"

Moscow, Magnit. elementy avtomatiki i vychisl. tekhn. XIV Vses. soveshch., 1972. Ref. dokl. (Magnetic Elements in Automation and Computer Technology. Fourteenth All-Union Conference, 1972. Abstracts of Papers), 1972, pp 366-368 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 73, abstract No 1B383 by B. K.)

Translation: The authors consider the feasibility of constructing multivalued matrix memories based on toroidal ferrite cores with data recording by the method of coincidence of half-currents. An analysis of the selection system shows that a type 2D sampling system must be used in the given memory unit. The accumulator of the memory is based on ferrite cores 1, SVT measuring 2.5 x 1.8 x 1 mm.

In data recording, one half-current remains constant in amplitude and the second varies in accordance with the data being recorded. It is pointed out that recording ten-level information requires that cores be sorted with a precision of $\pm 1\%$. Pulse or sine-wave current is used for

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ZINKEVICH, V. P. et al., Magnit. elementy avtomatiki i vychisl. tekhn. XIV
Vses. soveshch., 1972. Ref. dokl., 1972, pp 366-368

nondestructive data readout. The principles of construction of the proposed memory were verified on a model with a capacity reaching up to 600 cores. Two illustrations.

2/2

Biochemistry

USSR

UDC 542.91:541.515:547.824

ROZANTSEV, E. G., SUSKINA, V. I., IVANOV, Yu. A., and KASPRUK, B. I.,
Institute of Chemical Physics, Academy of Sciences USSR

"New Spin Labels and Sounding Markers for Biological Studies"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 73,
pp 1327-1329

Abstract: A series of new stable mono- and biradicals of the iminoxyl type
has been synthesized. The products -- di-2,2,6,6,-tetramethyl-1-oxyl-4-
piperidyl esters of various acids -- can be used as spin labels and sounding
markers for biological studies.

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USSR

UDC 612.45+612.766.1

KASISIL', G. N., MATLINA, E. SH., VASIL'YEV, V. N., and KIKOLOV, A. I.,
Laboratory for Problems of Control of Functions in Humans and Animals imeni
N. I. Grashchenkov, Academy of Sciences USSR, and Laboratory of Mental Work,
All-Union Scientific Research Institute of Railroad Hygiene, Ministry of
Public Transport

"The Influence of Intense Mental Work During the Day and Night Hours on the
Excretion of Catecholamines in the Urine"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 8,
Aug 73, pp 1,151-1,157

Abstract: The excretion of catecholamines in the urine was studied for 68
railway employees who alternated day and night shifts. In the daytime,
operators and on-duty men exhibited only a decrease in the reserve capacities
of the sympatho-adrenalin system, while dispatchers, said to do more intense
work, also showed an increase in noradrenalin excretion. During the night
shift the dispatchers showed a larger increase in adrenalin excretion than
other railway workers, though less than a control group not accustomed to
night work, and a larger increase in noradrenalin excretion than either group.
Dispatchers also increased their excretion of the dihydroxyphenylalanine
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KASSIL', G. N., et al., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 8, Aug 73, pp 1,151-1,157

precursor. The operators and on-duty men showed a larger increase in nor-adrenalin excretion during the night work than the controls. Excretion levels returned to the initial on the second day of rest. These results are said to show that even after many years of adaptation to a certain type of neuro-emotional work the excretion of catecholamines still depends on the intensity of the work, and that adaptation to night work is more difficult than to day work.

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- 49 -

USSR

UDC 612.017

KASSIL', G. N., Laboratory of Problems of Control of Functions in the Body of Man and Animals, Academy of Sciences USSR Imeni N. I. Grashchenkov, Moscow

"Forecast of Autonomic Reactions Under Stress Conditions and During Extreme Influences on the Organism"

Leningrad, Fiziologicheskii Zhurnal SSSR, Vol. 58, No 6, 1972, pp 836-844

Abstract: Based on extensive consideration of data available on the reaction to injections of small doses of insulin in normal individuals and those with various disorders, a method is proposed by which the state (tonus) and reactivity (readiness for action) of the autonomic system is evaluated from changes occurring in urinary excretion of a number of substances after injection of 0.1-0.15 units of insulin per kg body weight. Parallel experiments performed in simulated altitude of 5,000 m (moderate hypoxia) confirmed the validity of the method. According to the results, the 95 experimental subjects were divided into three groups. In group 1, resistance to hypoxia was good, and excretion of adrenaline, noradrenaline, and 17-hydroxycorticosteroids after hypoxia and after insulin was significantly increased. In group 2, resistance to hypoxia was reduced, and control excretion of catecholamines and corticosteroids was below normal. After the tests, excretion of adrenaline,

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KASSIL', G. N., Fiziologicheskij Zhurnal SSSR, Vol 58, No 6, 1972,
pp 836-844

noradrenaline, and corticoids increased slightly, while that of dopamine and dopa increased considerably. Several hrs later, a marked increase occurred in the excretion of catecholamines and corticoids, representing a delayed response of the sympathoadrenal system and its absence during the crucial moments. In group 3, the reactions were intermediate, and they improved after repeated tests. It is concluded that an increase in the excretion of catecholamines, especially noradrenaline, and 17-hydroxycorticosteroids during the first 3 hrs after injection of insulin allows one to forecast good autonomic reactions in any type of stress.

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- 62 -

Corrosion

USSR

UDC: 620.199

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TSIMAN, A. I., DEGTYAREVA, V. K., NEYMAN, N. S., KASSINSKAYA, T. L., KUZUB, V. S., and MUFASHKINA, A. A., Severodonetsk Branch, State Institute of the Nitrogen Industry; Zhdanov Plant of Heavy Machinery

"Determining the Tendency of Kh18Ni10T Chromium Nickel Steel to Intergranular Corrosion by the Method of Potentiostatic Etching"

Moscow, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 475-478

Abstract: Commercial melts of Kh18Ni10T and OKh18Ni10T steels were used for elaborating the process of potentiostatic etching in order to determine the tendency of steel to intergranular corrosion (TIC). A total of 88 experimental melts have shown agreement of results of potentiostatic etching (PE) with the "AM" method specified in GOST 6032-58. The new method also makes it possible to observe the nature of dissolution on a longitudinal polished end. A curve in the original article shows anodic polarization of OKh18Ni10T steel at potential application rate of 1 v/hr in 20% H₂SO₄, 50% H₂SO₄, 1 n H₂SO₄ + 0.003 n KCNS, 1 n H₂SO₄ + 0.05 KCNS. Another figure showing the anodic polarization

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TSIMAN, A. I., et al, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 475-478

curve obtained on OKh18N10T steel in 50% H_2SO_4 at a potential application rate of 1 v/hr reflects the TIC of the steel. At a potential of 0.28 v a longitudinal ground end of steel with TIC, after 30 minutes of etching, showed a clear lattice of etched grain boundaries. For steels with a strongly pronounced TIC the intergranular etching pattern appears within 10--15 minutes.

2/2

1/2 028

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--SELECTING THE PREHEATING TEMPERATURE FOR SURFACING DIES -U-

AUTHOR--KARPENKO, V.M., KASSOV, D.S.

COUNTRY OF INFO--USSR

SOURCE--SVAR. PROIZVOD. 1970, (1), 24-6

DATE PUBLISHED-----70

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

TOPIC TAGS--METAL HEATING, WELD FACING, DIE STEEL, MARTENSITIC TRANSFORMATION, WELD JOINT CRACKING, TRANSITION TEMPERATURE, TEMPERATURE DEPENDENCE, STEEL WELDING, DIE/(U)8KH3G5V2F STEEL, (U)7KH3G5M STEEL, (U)7KHG2NEM STEEL, (U)KH2V2FM STEEL, (U)KH12 STEEL, (U)R18 STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1989/1375

STEP NO--UR/0135/70/000/001/0024/0026

CIRC ACCESSION NO--AP0107349

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UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107849

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE WAS STUDIED OF PREHEATING TEMP. ON THE COMPLETE EQUIV. OF C AND THE TEMP. OF BEGINNING MARTENSITE TRANSFORMATION IN SURFACING DIES OF STEELS 8KH2GVS2F, 7KH3GSM, 7KHG2NFM, 7KH2GSVM, 6KH6GVS2F, KH2V2FM, KH12, AND R18. THE COMPLETE EQUIV. (C SUBE) OF C CAN BE DETD. BY THE FOLLOWING EQUATION: (SHOWN ON MICROFICHE), WHERE C IS C CONC. IN THE SURFACED METAL (WELDED ON METAL), R IS THE CONTENT OF ALLOYING ELEMENT IN PERCENT, N IS THE NO. OF ALLOYING ELEMENTS, AND K IS THE COEFF. DETG. THE CHEM. AFFINITY OF THE ELEMENT TO C. THE SURFACING WAS DONE IN 12-15 LAYERS ON PLATES (60 TIMES 60 TIMES 300 MM) FROM STEEL 45 WITH SUBSEQUENT COOLING IN SAND (DIRECT WELDING CURRENT 130-70 A AT 24-6V). MIN. PREHEATING TEMPS. WERE DETD. BY THE ABSENCE OF CRACKS IN THE NEAR WELD ZONE. WITH THE RISE OF THE COMPLETE C SUBE FROM 1.0 TO 3.0 THE MIN. PREHEATING TEMP. ROSE FROM 370 TO 500DEGREES; HOWEVER, FURTHER INCREASE OF C SUBE DID NOT AFFECT THE MIN. TEMP. ANY FURTHER. WITH THE INCREASE OF THE MIN. PREHEATING TEMP. FROM 250 TO 500DEGREES, THE TEMP. OF BEGINNING MARTENSITE TRANSFORMATION DECREASED FROM 300 TO 700DEGREES.

ZZZZZZZZZZZZ

UNCLASSIFIED

USSR

UDC 669.715'721:620.193.4:621.785

KASSYURA, V. P., and ZARETSKIY, YE. M.

"Effect of Welding and Heat Treatment on Electrochemical Characteristics of AMg6M Alloy"

Dokl. XXX Nauchno-tekhn. konferentsii Mosk. in-t khim. mashinostr. (Papers Presented at Thirtieth Scientific and Technical Conference of Moscow Institute of Chemical Machinery), Vol 2, vyp. 1, Moscow, 1970, pp 255-258 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I716 by V. Gerasimov)

Translation: The authors studied the electrochemical behavior of the AMg6M alloy after hardening (450°, 4 hr, air cooling), hardening and aging (175°, 100 hr) in neutral, acid, alkaline solutions of 1 n. NaNO₃ and in the same environments with the addition of Cl. Aging impairs the breakdown potential due to segregation of the beta phase, the oxide film on which possesses reduced protective properties. In an acid medium the beta phase is an anode, which leads to deterioration of the steady potential and an increase in the anodic process rate for all potentials. Heat treatment has much less of an effect in an alkaline medium. The electrochemical characteristics of a weld and the zone near the weld are studied.

1/1

USSR

UDC: 621.315.592 .

KASTAL'SKIY, A. A., A. F. Ioffe Physico-Technical Institute,
~~Leningrad~~

"The Possibility of Designing Semiconductor Lasers With Landau
Levels"

Leningrad, Fizika i tekhnika poluprovodnikov, No 8, 1972, pp 1576-
1581

Abstract: The possibility of designing a laser tunable to the Landau levels and based on carrier heating in passage through the contact between two semiconductors is considered. The proposed model envisages a semiconductor with an abrupt change in concentration of fine donors, and consequently in the concentration of free carriers, created either by neutron irradiation or by a change in doping during the growth process. Experimental data for InSb is used in the computations, but it is noted that for more accurate calculations, the dielectric permeability in various regions of the system must be known with the paramagnetic splitting of the Landau levels taken into account. It is concluded that the model considered in this article is also valid for semiconductors other than InSb, but that experimental values of the thermalization time
1/2

USSR

UDC: 621.315.592

KASTAL'SKIY, A. A., Fizika i tekhnika poluprovodnikov, No 8, 1972,
pp 1576-1581

for such substances must first be known. The author thanks S. M.
Ryvkin, A. A. Grinberg, and R. F. Kazarinov for their comments on
the results of the work.

2/2

- 30 -

USSR

VALOV, P.M., DANISHEVSKIY, A.M., KASTAL'SKIY, A.A., RYVKIN, B.S., RYVKIN, S.M., YAROSHETSKIY, I.D., Physicotechnical Institute imeni A.F. Ioffe, Academy of Sciences, USSR; Institute of Semiconductors, Academy of Sciences, USSR

"Photon Drag of Electrons During Intraband Light Absorption by Free Current Carriers in Semiconductors"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, No 12, 1970, pp 1919-1925

Abstract: Photon drag of electrons during indirect intraband absorption of light in semiconductors has been detected experimentally. This effect is due to an asymmetry of the distribution function originating as a result of the momentum of the incident photon flux. The effect was recorded during the absorption of radiation from a CO₂ laser in electronic germanium. The experimental results are in satisfactory agreement with the theory developed in a cited source. 2 figures, 9 bibliographic entries.

1/1

USSR

UDC 621.382.2

~~KASTAL'SKIY, A. A., LEONOV, YE. I., SHUR, M. S., Physicotechnical Institute
imeni A. F. Ioffe, Academy of Sciences of the USSR, Leningrad~~

"Gunn Effect Devices with a Variable Energy Gap"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 8, Aug 70, pp 1609-1611

Abstract: The authors discuss the possibility of developing devices based on the Gunn effect with an energy gap which varies lengthwise of the specimen. Such devices would be more suitable and convenient for use in integrated circuits than would analogous devices which utilize a variable cross sectional area or variable gradient of equilibrium carrier concentration. The energy gap can be varied either by changing the chemical composition lengthwise from the cathode to the anode according to a predetermined law, or by creating variable pressure along the specimen by gluing it to a substrate with a greater coefficient of thermal expansion while heat is applied and then cooling the assembly. The use of Gunn effect devices with variable energy gap would enable a considerable increase in the efficiency of Gunn generators. In the flip-flop mode, Gunn effect diodes with a variable energy gap could be used to produce pulses whose duration is determined by the bias voltage, and such devices could also be used to measure the duration of input pulses.

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1/2 027

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--CONCERNING THE DIFFERENTIAL DIAGNOSIS OF PROGRESSIVE
LEUKOENCEPHALITIS AND GLIOMA OF THE BRAIN -U-
AUTHOR--(05)-LEONOVICH, A.L., SKLYUT, I.A., KARDASH, I.I., KASTRITSKAYA,
Z.M., KRASILNIKOVA, N.YA.
COUNTRY OF INFO--USSR

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SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
VOL 70, NR 5, PP 673-679
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TUMOR, BRAIN, LESION, DIAGNOSTIC MEDICINE,
ELECTROENCEPHALOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0232

STEP NO--UR/0246/70/070/005/0673/0679

CIRC ACCESSION NO--AP0117484

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117484

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS CONVENED A CLINICO LABORATORIAL ANALYSIS OF 44 CASE HISTORIES OF PATIENTS WITH PROGRESSIVE LEUKOENCEPHALITIS AND NEUROECTODERMAL BRAIN TUMORS. SPECIAL ATTENTION IS BEING GIVEN TO PSEUDOTUMOROUS SYMPTOMS IN DIFFERENT FORMS OF PROGRESSIVE LEUKOENCEPHALITIS (SCHILDERS, SCHOLZ, VAN BOGARTS DISEASE). FOR DIFFERENTIAL PURPOSES THE AUTHORS UTILIZED CTONEUROLOGICAL AND X RAY CONTRAST METHODS, AS WELL AS EEG DATA. THE PEG OF PATIENTS WITH PROGRESSIVE LEUKOENCEPHALITIS DISPLAYED AN OPEN INTRAHYDROCEPHALIA WITHOUT A DISPLACEMENT OF THE VENTRICULAR SYSTEM. THE EEG CHANGES WERE IN THE FORM OF A DIFFUSE DISORGANIZATION OF THE RHYTHMS WITH A LOW AMPLITUDE ACTIVITY OR HIGH VOLTAGE PAROXYSMS OF ACUTE AND SLOW WAVES. THE CTONEUROLOGICAL CLINICAL PICTURE IN PROGRESSIVE LEUKOENCEPHALITIS IN COMPARISON TO TUMORS WAS CHARACTERIZED BY MULTIPLE FOCI, SUB AND SUPRATENTORIAL SYMPTOMATOLOGY. THIS INDICATES NOT ONLY TO A LESION OF THE HEMISPHERES, BUT OF THE STEM STRUCTURES AS WELL. FACILITY: KAFEDRA NERVNYKH BOLEZNEY BELORUSSKOGO INSTITUTA SOVERSHENSTVOVANIYA VRACHEY AND N-I INSTITUT NERVOLOGII, NEYROKHIRURGII I FIZIOTERAPII, MINSK.

UNCLASSIFIED

USSR

UDC 615.779.932+541.697

PETERSON, I. O., KASTRON, Ya. A., VEYNBERG, G. A., and KIMENIS, A. A., Order of Labor Red Banner Institute of Organic Synthesis, Academy of Sciences Latvian SSR

"Acute Toxicity of Some Semisynthetic Nitrofuran and Furan Penicillins"

Riga, Izvestiya Akademii Nauk Latvviyskoy SSR, No 7(276), 1970, pp 111-114

Abstract: To determine their toxicity, 23 penicillins were administered intraperitoneally to white mice. With the exception of 2-furyl-penicillin and beta-(2-furyl) ethylene-penicillin, all of the compounds were 2-12 times more toxic than benzylpenicillin. Certain of the nitrofuran and furan compounds have a toxicity level comparable to that of furazolin, solafur, or furagin (furazidine). The other penicillins are less toxic than the nitrofuran derivatives. The presence of a nitro group appears to have only a slight effect on the toxicity of these compounds, however.

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1/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--MINERALIZATIONS AND SALT ION COMPOSITIONS OF STRATAL WATERS OF THE
LOWER FORMATION OF THE PRODUCTIVE SERIES ,PK, KS, NKP, OF THE PETROLEUM
AUTHOR--(04)--MAMEDOV, N.I., ALIKHANDV, G.G., DADASHEV, M.N., KASUMOV, K.A.

COUNTRY OF INFO--USSR

SOURCE--AZERB. NEF. KHOZ. 1970, (2), 10-12

DATE PUBLISHED--70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOCHEMISTRY, GROUND WATER, GEOGRAPHIC LOCATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3003/0141

STEP NO--UR/0487/70/000/002/0010/0012

CIRC ACCESSION NO--AP0129397

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129397

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME 38 CHEM. ANALYSES OF STRATAL
WATERS FROM THE TITLE SERIES IN THE CASPIAN SEA AREA ARE PRESENTED, AND
THE GEOCHEMISTRY OF THESE WATERS IS DISCUSSED.

UNCLASSIFIED

Glass and Ceramics

USSR

K LDC 539.12.04.666.11

BYURGANOVSKAYA, G. V., VASIL'KOVA, A. A., and KASUMOVA, L. N.

"Radio-Optical Properties of High Silica Glass"

Moscow, Neorganicheskiye Materialy, Vol 6, No 1, Jan 70, pp 63-69

Abstract: In studies of the radiation stability of industrial glass it has been noted that the effect of cerium in glass with a relatively high silica content (80 wt % SiO₂) is less effective than in other silicate glasses. In order to investigate this phenomenon, a series of types of glass with systematically varying molecular composition of Na₂O·SiO₂ (x = 3, 4, 5, 10, 20) with additions of cerium and iron were fused. It is noted that the "protective" effect of cerium in high-silica glass is low, but increases with an increase in the content of alkali metal oxides in the glass.

The most radiation-stable glass had the composition Na₂O·4SiO₂ with 1 wt % CeO₂. With an increase in silica content in sodium-silicate glass, the proportion of four-valent cerium decreases. In glass with the composition Na₂O·20 SiO₂, the absorption band of the Ce⁴⁺ iron was not detected.

The introduction of small additions of B₂O₃ or Li₂O into high-silica glass (up to 1 wt %) increased the induced absorption by increasing the structural sensitivity of the glass to radiation at the expense of formation of additional defects.

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USSR

BYURGANOVSKAYA, G. V., et al, Neorganicheskiye Materialy, Vol 6, No 1, Jan 70, pp 63-69

The negative difference absorption, connected with the destruction of the centers responsible for the adsorption band in the ultraviolet range of the spectrum of unirradiated glass, passes over to the region of positive values for doses which are larger the more intense these bands. A decrease in the regression coefficient of irradiated glass with an increase in silica content arises from the formation of deeper electron traps in the high-silica glass. This is confirmed by thermoluminescence spectra. Complete data from the experiment are tabulated and illustrated graphically.

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USSR

UDC 621.792.92.669.018.25:620.178.16

LEVITSKIY, S. N., Candidate of Technical Sciences, KASUMZADE, N. G., Doctor of Technical Sciences, Professor

"Wear Resistance of Surfacing Alloys in Hydroabrasive Wear"

Vestnik Mashinostroyeniya, No 2, Feb. 1973, pp 32-34.

Abstract: Results are presented from studies of wear resistance of a group of widely used surfacing materials and new alloys in the C-B-Fe and C-W-Fe alloy systems. Wear-resistant surfacing materials are found which effectively increase the durability of oil field equipment parts. The most effective alloys are U13R12S2G3 (1.3% C, 2.2% Si, 3.2% Mn, 12.5% B) and U20V35 (1.9% C, 0.8% Si, 0.6% Mn, 32% W).

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- 34 -

USSR

MOSKALENKO, Yu. Ye., IVANOVA, T. I., VAYNSHTEYN, G. B., ZELIKSON, B. B.,
KISLYAKOV, Yu. Ya., and KAS'YAN, I. I.

"Resistance of the Cerebrovascular System to Transverse Accelerations"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya No 1, 1973,
pp 37-46

Abstract: Histological examination of brain sections from dogs subjected to transverse accelerations of 15 g or more for 30 to 40 seconds revealed pronounced morphological changes in the blood vessels, including rupture of the walls with extensive hemorrhages into the brain tissue and ventricles. Intracranial cerebrospinal fluid pressure increased to 15 to 20 g and then stabilized while blood pressure continued to grow in proportion to the intensity of acceleration. Study of a mathematical model of the process showed that after acceleration of up to 15 g, transmural pressure in the cerebral vessels does not change significantly. However, acceleration of over 15 g increases transmural pressure beyond the tensile strength of the vascular walls and may cause them to rupture. Thus, the resistance of the cerebrovascular system to transverse accelerations is dependent on the relationship between the strength of the structural components of the vascular wall and the increase in transmural pressure.

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PUBLICATIONS

USSR

MOSKALENKO, Yu. Ye., VAYNSHTEYN, G. B., and KAS'YAN, I. I.

Vnutricherepnoye Krovoobrashcheniye v Usloviyakh Peregruzok i Nevesomosti: (Intracranial Blood Circulation Under Conditions of Accelerations and Weightlessness), Moscow, "Meditsina," 1971, 280 pp

TABLE OF CONTENTS

	<u>Page</u>
Preface	3
Introduction	5
Chapter 1. System of Intracranial Blood Circulation and the Gravitation Factor	9
Period of early research into the cerebral blood circulation under the effect of centrifugal forces	9
Indirect proof of the effect of conditions of modified gravitation on the intracranial blood circulation system	13
Direct experimental data concerning the state of cranial blood circulation under conditions of a modified gravitational field	21

1/7

USSR

MOSKALENKO, Yu. Ye., et al., Vnutricherepnoye' Krovoobrashcheniye v Usloviyakh Peregruzok i Nevesomosti: (Intracranial Blood Circulation Under Conditions of Accelerations and Weightlessness), Moscow, "Meditsina," 1971, 280 pp

	<u>Page</u>
Chapter II. Certain Features in Intracranial Hemodynamics	28
Mechanisms in compensation of changes of blood filling of the brain's vascular system	28
Concerning the connection of hemodynamics and fluid dynamics in the craniospinal cavity	34
Pulse-type fluctuations in the intracranial blood circulation system	40
Respiratory waves of blood saturation of the brain and intracranial pressure	45
Biophysical structure of the intracranial blood circulation system	47
Brief information concerning control of intracranial blood circulation	54

2/1

USSR

MOSKALENKO, Yu. Ye., et al., Vnutricherepnoye Krovoobrashcheniye v Usloviyakh Peregruzok i Nevesomosti: (Intracranial Blood Circulation Under Conditions of Accelerations and Weightlessness), Moscow, "Meditsina," 1971, 280 pp

	<u>Page</u>
Chapter III. Procedural Approaches to a Study of Intracranial Blood Circulation Under Conditions of Modified Gravitation	63
Techniques for evaluating the state of intracranial blood circulation	64
Features in recording of intracranial pressure under conditions of an experiment with animals	69
Concerning an electroplethysmographic evaluation of dynamics involved in the brain's blood saturation	72
Recording equipment and research technique	80
Procedure for recording an intracranial electroplethysmogram	81
Technique for recording intracranial and intravascular pressure	89
Technique for preparation and conducting an experiment	94

3/7

USSR

MOSKALENKO, Yu. Ye., et al., Vnutricherepnoye Krovoobrashcheniye v Usloviyakh Peregruzok i Nevesomosti: (Intracranial Blood Circulation Under Conditions of Accelerations and Weightlessness), Moscow, "Meditsina," 1971, 280 pp

	<u>Page</u>
Processing of experimental data	98
Chapter IV. Intracranial Hemodynamics Under the Effect of Longitudinal Accelerations	102
Effect of longitudinal accelerations on the cardiovascular system	103
Dynamics of indexes of intracranial pulsation and respiratory waves involved in blood saturation of the brain and intracranial pressure during the effect of longitudinal accelerations	108
Effect of longitudinal accelerations on variation in levels of blood filling of the skull cavity and of intracranial pressure	113
Concerning possible physiological mechanisms of active reactions of cerebral vessels during the effect of longitudinal accelerations	126

4/7

- 72 -

USSR

MOSKALENKO, Yu. Ye., et al., Vnutricherepnoye Krovoobrashcheniye v Usloviyakh Peregruzok i Nevesomosti: (Intracranial Blood Circulation Under Conditions of Accelerations and Weightlessness), Moscow, "Meditsina," 1971, 280 pp

	<u>Page</u>
Chapter V. Effect of Transverse Accelerations on Intracranial Hemodynamics	135
General description of changes in the blood circulation system under the effect of transverse accelerations	135
Dynamics of intracranial pulsation during the effect of transverse accelerations	142
Dynamics of respiratory waves in the intracranial blood circulation system under the effect of transverse accelerations	154
Variation in levels of filling the skull cavity with blood and in intracranial pressure under the effect of transverse accelerations	160
Structural modifications in the vascular system of the brain under the effect of transverse accelerations	172

5/7

USSR

MOSKALENKO, Yu. Ye., et al., Vnutricherepnoye Krovoobrashcheniye v Usloviyakh Peregruzok i Nevesomosti: (Intracranial Blood Circulation Under Conditions of Accelerations and Weightlessness), Moscow, "Meditsina," 1971, 280 pp

	<u>Page</u>
On the compensatory possibilities of the intracranial blood circulation system under conditions of transverse accelerations	184
Chapter VI. Certain Aspects of the Effect of Conditions of Weightlessness on Intracranial Blood Circulation	196
Reactions of the cardiovascular system in a state of weightlessness and during simulation of it	197
Certain symptoms in impairment of cerebral blood flow under weightlessness conditions and during simulation of its actions	214
Experimental data on the state of intracranial blood circulation under weightlessness conditions and during its simulation	222

6/7

USSR

MOSKALNEKO, Yu. Ye., et al., Vnutricherepnoye Krovoobrashcheniye v Usloviyakh Peregruzok i Nevesomosti: (Intracranial Blood Circulation Under Conditions of Accelerations and Weightlessness), Moscow, "Meditsina," 1971, 280 pp

Page

Chapter VII. Concerning Problems of Protecting the Human Organism Under Conditions of Accelerations and Weightlessness With Allowance for Features of the Functioning of the Intracranial Blood Circulatory System	228
Mechanical means of shielding an organism from the effect of G-forces and weightlessness	230
On the effectiveness of certain pharmacological agents utilized for protection against the effect of G-forces and weightlessness	238
Certain remarks on the effectiveness of special types of training for increasing resistance to the action of G-forces and weightlessness on the organism	241
Bibliography	249
7/7	

USSR

UDC 547.398.547.599.547.71

MALINOVSKIY, M. S., KAS'YAN, I. I., OVSYANIK, V. D., Dnepropetrovsk State University imeni 300-letiya vossoyedineniya Ukrainy s Rossiyei

"Oxidation of Bicyclo $\overline{2,2,17}$ -5-heptene-exo-2-carboxamides"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 10, Oct 71, pp 2139-2143

Abstract: Some bicyclo $\overline{2,2,17}$ -5-heptene-exo-2-carboxamides were synthesized from bicyclo $\overline{2,2,17}$ -5-heptene-exo-2-carboxylic acid via the acid chloride. Oxidation of the resultant bicyclo $\overline{2,2,17}$ -5-heptene-exo-2-carboxamides with perphthalic acid at the moment of formation from phthalic anhydride and concentrated hydrogen peroxide in the presence of urea gives the corresponding epoxides.

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- 32 -

1/2 015

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--THE CONNECTION BETWEEN THE FORCE OF IMPACT AND THE CHARACTER OF
CHANGES IN CUTTING FORCES DURING PLANING -U-

AUTHOR--KASYAN, M.V., ARUTYUNYAN, G.A., BAGDASARYAN, G.B.

COUNTRY OF INFO--USSR

K

SOURCE--YEREVAN, IZVESTIYA AKADEMII NAUK ARMYANSKOY SSSR, SERIYA
TEKHNICHESKIKH NAUK, VOL 23, NO 1, 1970, PP 3-10

DATE PUBLISHED-----70

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

TOPIC TAGS--CUTTING TOOL, BIBLIOGRAPHY, METAL CUTTING, METAL MACHINING,
PLANING MACHINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE---1987/1671

STEP NO--UR/0173/70/023/001/0003/0010

CIRC ACCESSION NO--AP0104893

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104893

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE PHYSICAL NATURE OF THE CHANGE IN COMPONENTS OF CUTTING FORCE DURING PLANING IN CONNECTION WITH THE FORCE OF IMPACT. RATED AND EXPERIMENTAL VALUES OF THE IMPACT FORCE UPON INCISION OF THE CUTTING TOOL ONTO MACHINED METAL ARE OBTAINED. IT WAS ESTABLISHED THAT, BEGINNING FROM DEFINITE VALUES OF THE SPEED OF CUTTING, BECAUSE OF THE IMPACT OF CUTTING TOOL UPON MACHINED METAL, NOTICEABLE TRACES OF WEAR RESEMBLING WEAR CHAMFERING ARE FORMED ON THE BACK SURFACE OF THE CUTTING TOOL. AS A RESULT, FORCES ACTING ON THE BACK SURFACE OF THE CUTTING TOOL INCREASE AND THEREBY AUGMENT COMPONENTS OF THE CUTTING FORCE. TWO TABLES.

UNCLASSIFIED

KASYAN, V.A.

SPR 5 45/23.08
6-73

6

XIII-7. CONDITIONS OF GROWTH OF MONOCRYSTALLINE FILMS OF INDIUM ANTICARBOIDE ON DIELECTRIC SUBSTRATES

Article by V. A. Kas'yan, P. I. Pesechuk, Kishinev; Novosibirsk, III Sibirskii Nauchno-Issledovatel'skii Tsentr Poluprovodnikovoi i Dielektricheskoi Elektroniki, Kishinev, 12-17 June 1977, p 1661.

According to the published data, the method of thermal recrystallization permits us to obtain films only of a dendritic structure. This method consists in creating a protective layer on the surface of a polycrystalline film, melting it with subsequent recrystallization from the melt.

We have performed a detailed study of the factors affecting the structure and property of the recrystallized films. It is demonstrated that such factors are as follows: 1) the substrate temperature for which the initial polycrystalline film was obtained; 2) the temperature and oxidation time of the film surface for creation of the protective layer; 3) the displacement rate of the liquid phase front; 4) crystallization rates. Metallographic, x-ray structural and electron diffraction studies were made of the films. It was found that depending on the recrystallization conditions it is possible to obtain the films of three types: a) films with dendritic structure; b) monocrystalline films having microprojections and packing defects on the surface; c) monocrystalline films with a smooth surface.

Monocrystalline InSb films were obtained on substrates of mica, quartz and sapphire. The film thickness was from 1 to 6 microns, and the film area reached 39 x 50 mm². Their electrical parameters were close to the parameters of massive crystals. Thus, the n-type films with $n = 2 \cdot 10^{16}$ cm⁻³ had a Hall mobility of $63,000$ cm²/Vsec at room temperature. The p-type films (alloyed with permanganum) with $p = 2 \cdot 10^{16}$ cm⁻³ had a Hall mobility of the acceptors of $4,300$ cm²/V sec at 77° K.

USSR

UDC 531.787.913.087.92

KAS'YAN, V.A., KOZLOV, A.I., NIKOL'SKIY, YU.A.

"Strain Sensitivity In p- and n-Type GaSb Films"

Tr. po fiz. poluprovodnikov. Kishinev. un-t (Works On Semiconductor Physics. Kishinev University), 1971, Issue 3, pp 83-94 (from RZh:Elektronika i yeye primeneniye, No 7, July 1972, Abstract No 7B377)

Translation: Polycrystalline films of p- and n-type gallium antimonide on mica and quartz substrates are prepared by discrete evaporation. Layers of n-type GaSb were prepared with tellurium doping. Monocrystalline films of p- and n-type gallium antimonide were grown by epitaxial deposition on substrates of monocrystals of GaAs and GaSb. The deformation, temperature, and time characteristics are studied of strain resistors [tenzorezistor] prepared on the basis of polycrystalline and monocrystalline films of n- and p-type GaSb. The dependence of the absolute change of the resistance on the magnitude of the deformation with expansion and compression deformations bears a linear character up to the maximum distortions. A decrease of the sensitivity factor with an increase of temperature is observed for all the films. The principal parameters of the sensitivity resistors are determined. Strain resistors from polycrystalline n-type GaSb films are the most promising for the preparation of strain gauges [tenzodatchik]. High

1/2

USSR

KAS'YAN, V.A., et al. Tr. po fiz. poluprovodnikov. Kishinev. un-t, 1971, Issue 3, pp 88-94

values of strain sensitivity [tenzochuvstvitel'nost'] in polycrystalline films may be caused by the effect of intercrystalline barriers on the magnitude of the strain sensitivity. 6 ill. 1 tab. 3 ref. Summary.

2/2

- 89 -

USSR

UDC 621.382:538.632

KAS'YAN, V.A., PASECHNIK, F.I.

"Highly-Sensitive Hall EMF Generators From Monocrystalline InSb Films"

Tr. po fiz. poluprovodnikov. Kishinev. un-t (Works On Semiconductor Physics. Kishinev University), 1971, Issue 3, pp 95-102 (from RZh:Elektronika i yeye primeneniye, No 7, July 1972, Abstract No 7B366)

Translation: The paper studies the electrical and galvanomagnetic properties of n-type InSb monocrystalline films suitable for creation of Hall emf transducers. Highly-sensitive Hall emf transducers were prepared and their characteristics studied. It is shown that the Hall emf transducers prepared from monocrystalline films of indium antimonide possess a voltage sensitivity of 500 ± 700 mkV/oersted and the temperature coefficient of voltage sensitivity is 0.05 percent/degree in the temperature range $-50 \pm 50^\circ$ C. In a pulse regime of power supply the transducer sensitivity increases to $(10 \div 15) \cdot 10^2$ mkV/oersted.
6 ill. 1 tab. 3 ref. Summary.

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USSR

UDC: 539.4

Blashchuk, V. Ye., Voynitskiy, A. G., Grabin, V. F., Gurevich, S. M., Kas'yan, V. V., Novikov, N. V.

"Deformation Resistance of AT-2 and AT-3 Titanium Alloys and Their Welded Joints at High and Low Temperatures"

Kiev, Problemy Prochnosti, No 7, 1972, pp 96-99.

Abstract: The deformation resistance of AT-3 and AT-2 alloys and seam metal is studied in the 400-700°K temperature interval. The strength of the metal of seams in these alloys in the interval up to 500°K does not fall below 90% of the strength of the alloys. The temperatures dependences of strength and yield point of the metals of the seams and alloys are similar. At 700°K, the strength of the seam metal drops to 80% of the strength of AT-3 alloy. The ductility of the seam metals at normal and high temperatures is similar to the ductility of the base alloys, but falls below the ductility of the base metal at low temperatures. As temperature drops, the decrease in the value of coefficient σ_{σ} is greater in the alloys than in the seam metal, but throughout the entire temperature range studied.

USSR

UDC 536.421.1.669.15.58-196

FRUMIN, I. I., KAS'YAN, V. V., GOLOVASHCHUK, A. I., GRABIN, V. P., and
RYABTSEV, I. A., Electric Welding Institute imeni Ye. O. Paton of the Academy
of Sciences USSR

"Determination of the Heating Temperature In Rolling High-Carbon Chrome-
Titanium Steels"

Moscow, Stal', No 6, Jun 73, pp 546-548

Abstract: The temperatures of beginning fusion of eight high-carbon chromium steels with and without titanium were investigated with the help of a high-temperature microscope. The heating temperature in rolling or forging of ingots of high-carbon alloyed steels weighing up to 50 kg must be 10-20°C below the temperature of beginning fusion. For ingots of higher weight, considering possible development of liquation phenomena, the heating temperature must be somewhat lower. Titanium, hindering the development of a readily fusible ledeburite eutectic, in high carbon chromium steels raises their fusion temperature and extends the temperature range of deformation. The eutectic consists mainly of chromium carbides. The presence of carbon in the investigated steels lowers the fusion temperature and raises the quantity of ledeburite eutectic. Four figures, two tables three bibliographic references. 1/1

- 13 -

USSR

UDC 539.4

NERODENKO, L. M., GRABIN, V. F., and KAS'YAN, V. V., Kiev

"Metallographic Investigation of Microyielding of Copper and Nickel in the Temperature Interval of 450-650°C"

Moscow, Fizika i Khimiya Obrabotki Metalloy, No 1, Jan-Feb 71, pp 66-70

Abstract: Microyielding parameters of pure copper and nickel were investigated at elevated temperatures by metallographic methods. Values of the microscopic elastic limit were determined. The energy of the activation process identifying the formation of slip curves in the microyielding phase was found to be 62.8 ± 5 kcal/mol for nickel and $26.3 \pm$ kcal/mol for copper.

1/1

- 84 -

USSR

UDC: 621.396.6.002.72(088.8)

SAVCHENKO, I. D., ZOZULYA, V. P., KAS'YANENKO, A. T.

"A Device for Straightening and Shaping the Axial Leads of Radio Elements"

USSR Author's Certificate No 265200, filed 5 Feb 69, published 23 Jun 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V336 P)

Translation: A device is proposed which contains a jig, a locator and a reciprocating slider. As a distinguishing feature of the patent, the slider is equipped with symmetrically located catchers made in the form of crescent-shaped fingers which rest on the lateral surfaces of the jig, and with rollers which have square grooves along the perimeter, and also with a spring-loaded locator which holds the bases of the leads against the bosses of the jig.

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- 27 -

USSR

UDC 539.3.01

LOGVINOV, V. B., KAS'YANENKO, S. I.

"On the Effect of the Orientation of the Axes of Elastic Symmetry on the Stressed State of an Anisotropic Wedge"

Tr. Novocherkas. politekhn. in-ta (Works of Novocherkassk Polytechnical Institute), 1972, Vol. 3, pp 105-117 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V37)

Translation: The effect of the angle of orientation of the axes of elastic symmetry on the stressed state of a wedge was investigated using the example of an anisotropic wedge ($\alpha = 45^\circ$) loaded along the lower edge by a distributed transverse load which varies according to a quadratic parabolic law. The computational results, stress diagrams and graphs of the change in the corrections to the stresses as a function of the angle of orientation of the elastic properties are in full agreement with results of a study previously made for an anisotropic wedge ($\alpha = 26^\circ 33'$). It is shown that the stress state for anisotropic materials depends to a very considerable degree on the orientation of elastic properties. For certain directions of the axes of elastic symmetry the calculation can be conducted on the basis of the elementary theory of the resistance of materials, since the calculated stresses determined on the

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USSR

LOGVINOV, V. B., KAS'YANENKO, S. I., Tr. Novocherkas. politekhn. in-ta, 1972, Vol. 3, pp 105-117

basis of the exact formulas of elasticity theory practically coincide in these cases with the results of the solution of the resistance of materials. As the angle α rises at the vertex of the wedge, the magnitudes of the greatest corrections increase since this region differs much more from a beam region. 6 ref. Authors' abstract.

2/2

- 102 -

USSR

UDC 669.18.046.554

SIDOROV, N. V., GERASIMOV, Yu. V., KHAYRUTDINOV, R. M., ~~FILATOV, S. K.~~
KHASIN, G. A., BARMOTIN, I. P., KAS'YANOV, A. G., CHEREMNYKH, B. A., and
ISHMURZIN, M. G., Zlatoust Metallurgical Plant, Scientific Research
Metallurgical Institute, Chelyabinsk

"Out-of-Furnace Refining of Low-Carbon Corrosion-Resistant Steels"

Moscow, Metallurg, No 12, Dec 70, pp 22-23

Abstract: The smelting technology of low-carbon corrosion-resistant steels in electric arc furnaces with argon scavenging in the foundry ladle has been developed and introduced into production at the Zlatoust Metallurgical Plant. The main principles of the out-of-furnace degassing effectiveness depends on the chemical composition of the steel, the slag, and the scavenging parameters were investigated.

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- 51 -

USSR

K
UDC 669.14.018.8:658.562

~~KAS'YANOV, A. G., GUREVICH, YU. G., MARKELOV, A. I., SIDOROV, N. V., GERASIMOV, YU. V., KHASIN, G. A., CHISHYAKOV, S. L., POLYAKOV, YU. V., LEBEDEVA, V. N., Chelyabinsk Polytechnical Institute and Zlatoust Metallurgical Plant~~

"Quality of Stainless, Low-Carbon Steel"

Moscow, Metallurg., No 5, May 70, pp 17-19

Abstract: A stainless, low-carbon steel developed at the Zlatoust Metallurgical Plant is described. The carbon content of this steel is less than 0.030%, and the steel is made in open arc furnaces using metal electrodes or by scavenging the liquid steel with argon. Comparisons were made between this steel and a similar metal made in vacuum induction furnaces. A table gives the impurities in the various types of steel produced by the two methods -- the use of metal electrodes and argon scavenging. An analysis of the results of a quantitative estimate of impurities showed that owing to the high degree of deformation, the contamination along the transverse axis of the steel sheet is less than that along the longitudinal axis. The mechanical
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USSR

KAS'YANOV, A. G., et al., Metallurg., No 5, May 70, pp 17-19

characteristics of the steel satisfied all technical requirements. A comparison of the mechanical characteristics of this steel made by the three processes discussed -- metallic electrodes, argon scavenging, and vacuum induction -- is also presented.

2/2

- 73 -

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--QUALITY OF STAINLESS, LOW CARBON STEEL -U-

AUTHOR--(05)-KASYANOV, A.G., GUREVICH, YU.G., MARKELOV, A.I., SIDOROV,
N.V., GERASIMOV, YU.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, METALLURG., NO 5, MAY 70, PP 17-19

DATE PUBLISHED----MAY70

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

TOPIC TAGS--LOW CARBON STEEL, STAINLESS STEEL, METALLURGIC PLANT,
MECHANICAL PROPERTY, ARGON SCAVENGING, VACUUM MELTING, HIGH QUALITY
STEEL, ARC FURNACE, FERROUS LIQUID METAL, INDUCTION FURNACE, STEEL
IMPURITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/0409

STEP NO--UR/0130/70/000/005/0017/0019

CIRC ACCESSION NO--AP0135881

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135881

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STAINLESS, LOW CARBON STEEL DEVELOPED AT THE ZLATOUST METALLURGICAL PLANT IS DESCRIBED. THE CARBON CONTENT OF THIS STEEL IS LESS THAN 0.030PERCENT, AND THE STEEL IS MADE IN OPEN ARC FURNACES USING METAL ELECTRODES OR BY SCAVENGING THE LIQUID STEEL WITH ARGON. COMPARISONS WERE MADE BETWEEN THIS STEEL AND A SIMILAR METAL MADE IN VACUUM INDUCTION FURNACES. A TABLE GIVES THE IMPURITIES IN THE VARIOUS TYPES OF STEEL PRODUCED BY THE TWO METHODS, THE USE OF METAL ELECTRODES AND ARGON SCAVENGING. AN ANALYSIS OF THE RESULTS OF A QUANTITATIVE ESTIMATE OF IMPURITIES SHOWED THAT OWING TO THE HIGH DEGREE OF DEFORMATION, THE CONTAMINATION ALONG THE TRANSVERSE AXIS OF THE STEEL SHEET IS LESS THAN THAT ALONG THE LONGITUDINAL AXIS. THE MECHANICAL CHARACTERISTICS OF THE STEEL SATISFIED ALL TECHNICAL REQUIREMENTS. A COMPARISON OF THE MECHANICAL CHARACTERISTICS OF THIS STEEL MADE BY THE THREE PROCESSES DISCUSSED, METALLIC ELECTRODES, ARGON SCAVENGING, AND VACUUM INDUCTION, IS ALSO PRESENTED. FACILITY: CHELYABINSK POLYTECHNICAL INSTITUTE. FACILITY: ZLATOUS METALLURGICAL PLANT.

UNCLASSIFIED

USSR

UDC 621.357.7:669.65'76

KAS'YANDV. A. V.

"Electrodeposition of Tin-bismuth Alloy in Sulfuric Acid Electrolyte with Surface Active Agents"

Tekhnol. i Organiz. Proizv.-va. Nauch.-proizv. sb. [Technology and Organization of Production, Scientific-Production Collection], No 5, 1971, pp 60-64, (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 L326 from the Resume).

Translation: Results are presented from a study of the electrochemical coprecipitation of Bi with Sn in a sulfuric acid electrolyte with an anode of Sn-Bi alloy in the presence of a surfactant, performed by a radio isotope method using Bi-210 as a label.

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KAS'YANOVA, K. G.

Industrial Hygiene

SOME TRACE MINERAL ELEMENTS IN THE BLOOD OF PATIENTS SUFFERING FROM ENDEMIC FLUOROSIS

SO:SPRS 54539 UDC: 616.314.11-036.21-02:344.141
23 NOV 71 071616.112.1-074

(Article by V.I. Nikolayev, V.I. Sidorkin, K.G. Kas'yanova, Central Scientific Research and Construction Design Institute of Hygienists of Phosphorites and Safety Technology in Berezniki; Moscow, Venizhskaya Meditsinskaya Shkola SSSR, Kazan, No 10, 1971, pp 77-80)

In the literature it has been mentioned that there is a similarity between the main pathogenetic mechanisms of occupational and endemic fluorosis (R.D. Cabovich; A.A. Zhavoronkov; Hauschild). However, occupational fluorosis is characterized by a more strict specificity because of the exposure of workers to other industrial factors (various types of dust and gas, noise, vibration, temperature fluctuations, etc.). From this point of view, endemic fluorosis has obvious advantages for investigations.

Endemic fluorosis, as we know, is encountered among the inhabitants of several regions of the Ashkeron peninsula, where the natural water has a considerable fluoride content (A.A. Akhmedov). Thus, according to the data of the Rayon Sanitary and Epidemiology Station, the natural sources in the village of Goumay contain 2 mg/liter of fluoride, the level ranges from 3.8 to 23.6 mg/liter in Fat'od, and 2.6 to 3.4 mg/liter in Zyrya. Although for the last few years the inhabitants of these villages drink primarily bottled water brought in from elsewhere, the system of sanitary inspection is inadequate to rule out consumption of natural fluorinated water for drinking and household purposes.

Among the disorders related to fluorosis, disturbances in metabolism of some trace elements have not been investigated very much. It has been reported that fluorine has a demineralizing effect on calcium, magnesium, manganese, and iron metabolism (A.V. Korol'nikov; Rich and Kautlich; Bulliford et al.), that there is an antagonism in the organism between fluorine and aluminum (Parfitt et al.), as well as synergism between fluorine and molybdenum (Stookey and Munster). The high sensitivity of trace mineral metabolism to the toxic effect of fluoride compounds increases the clinicodiagnostic importance of research in this direction.

The present report deals with the results of assaying cobalt, nickel, zinc, and barium in the blood of patients suffering from endemic fluorosis. We found no literature on this subject.

L/3 010 UNCLASSIFIED PROCESSING DATE--20NOV70
 TITLE--PYRIDAZINES. I. SYNTHESIS AND NUCLEOPHILIC SUBSTITUTION OF 3-
 CHLOROMETHYLPYRIDAZINE -U-
 AUTHOR--(04)-NOVITSKIY, K.YU., SADOVAYA, N.K., KASYANOVA, YE.F., SEMINA,
 L.K.
 CCOUNTRY OF INFO--USSR
 SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (3), 412-14
 DATE PUBLISHED-----70

K

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, HETEROCYCLIC NITROGEN COMPOUND, EXCHANGE
 REACTION, THIONYL CHLORIDE, AMINE, ORGANIC AZINE COMPOUND

CCNTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--3001/0228

STEP NO--UR/0409/70/000/003/0412/0414

CIRC ACCESSION NO--AP0126011

UNCLASSIFIED

2/3 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--A0126011

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO A SOLN. OF 15 ML SOCL SUB2 IN 20 ML ANHYD. CHCL SUB3 WAS ADDED A SOLN. OF 12 G I (R EQUALS DH) IN 60 ML ANHYD. CHCL SUB3 AND THE WHOLE STIRRED 2 HR TO YIELD 81PERCENT I.HCL (R EQUALS CL) (II.HCL), M. 121-1.5DEGREES (ETOAC). THIS (3.3 G) IN 30 ML MEQH WAS ADDED DROPWISE TO MEQNA (FROM 1.84 G NA) IN 30 ML ANHYD. MEQH, AND THE WHOLE STIRRED 30 MIN AT ROOM TEMP. AND REFLUXED 4-5 HR TO YIELD 76PERCENT I (R EQUALS OME), B SUB11 114-15DEGREES, D PRIME20 1.0978 N PRIME20 SUBD 1.5077; PICRATE M. 87-8DEGREES (AQ. ETOH). SIMILARLY WAS OBTAINED 55PERCENT I (R EQUALS OET), B SUB7 108-9DEGREES, D PRIME20 1.0543, N PRIME20 SUBD 1.4990; PICRATE M. 103-4DEGREES (AQ. ETOH). TO AN EMULSION OF 0.69 G NA IN 2 ML PHME WAS ADDED DROPWISE AT 45-50DEGREES 3.3 G PHSII, STIRRING CONTINUED 4 HR, II (FROM 3.3G II.HCL) IN PHME ADDED, AND THE WHOLE HEATED 2 HR ON A BOILING WATER BATH TO YIELD 96PERCENT I (R EQUALS SPH), M. 54-5.5DEGREES (PETROLEUM ETHER); PICRATE M. 112-13DEGREES (ETOH). A MIXT. OF 2.5 G II.HCL AND 1.2 G (H SUB2 N)SUB2 CS IN 300 ML ANHYD. ME SUB2 CU WAS REFLUXED 10 HR TO YIELD 92PERCENT I (R EQUALS SC(:NH)NH SUB2.2HCL), M. 187-8DEGREES (DECOMP.N.) (HEXANE MEQH). THIS (2.5 G) HEATED 1 HR ON A BOILING WATER BATH WITH SATD. K SUB2 CO SUB3 SOLN. GAVE 94PERCENT I (R EQUALS SH).

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3/3 010

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PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126011

ABSTRACT/EXTRACT--II.HCL AND THE APPROPRIATE AMINE REFLUXED 3 HR IN ETHER,
C SUB6 H SUB6 OR IN THE AMINE GAVE THE FOLLOWING I (R, B.P., MM,
M.P.-M.P. DIPIKATE, AND PERCENT YIELD GIVEN): NE SUBT2,
124-5DEGREES-6, MINUS, 145.5-6DEGREES (ETOH), 87; MORPHOLINO,
130-1DEGREES-1, 56-7DEGREES, 169-70DEGREES (ETOH), 85; 1 PYRROLIDINYL,
115DEGREES-1.5, 51-2DEGREES, 148-9DEGREES (ETOH), 96. TO A SOLN. OF
3.25 G NACN IN 5 ML H SUB2 O ON A WATER BATH WAS ADDED 3.3 G II.HCL IN
20 ML ETCH, AND THE WHOLE REFLUXED 1 HR TO YIELD 46PERCENT I (R EQUALS
CN), M. 90-1DEGREES (C SUB6 H SUB6); HCL SALT M. 132-3DEGREES (ETOAC).
THIS (1 G) IN 15 ML 10PERCENT HCL HEATED 5 HR AT 60DEGREES GAVE
100PERCENT I (R EQUALS H), M. 191-2DEGREES (ME SUB2 CO).
FACILITY: MOSK. GOS. UNIV: IM. LOMCNOSQVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

KAS'YANYUK. S. A.

"The Restoration of Signal Functions on the Basis of Fixed Elements at a Finite Number of Points"

Probl. Peredachi Inform. [Problems of Information Transmission], 1973, 9, No 2, pp 24-30 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V474)

Translation: The problem of restoration of a signal function with a finite spectrum on the basis of fixed values and values of derivatives at a finite number of points is solved for a number of a priori limitations on the spectrum.

Author's view

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1/2 045 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CERTAIN PROPERTIES OF THE STIMULATED EMISSION OF A PULSED
ULTRAVIOLET N2 LASER WITH A TRANSVERSE DISCHARGE -U-
AUTHOR--KASYMOZHANOV, M.A. *K*
COUNTRY OF INFO--USSR
SOURCE--MOSKOVSKII UNIVERSITET. VESTNIK. SERIIA III-FIZIKA, ASTRONOMIIA,
VOL. 11, JAN.--FEB. 1970, P. 83-86
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--LASER EMISSION COHERENCE, PULSE LASER, UV LASER, LASER BEAM,
LASER PUMPING/(UIN2 UV LASER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/1629 STEP NO--UR/0188/70/011/000/0083/0086
CIRC ACCESSION NO--AP0054475
UNCLASSIFIED

2/2 045

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0054475

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL INVESTIGATION OF THE TRANSVERSE STRUCTURE, TIME DEPENDENCE, AND SPATIAL COHERENCE OF THE EMISSION OF A PULSED UV MOLECULAR NITROGEN LASER OPERATING AT A WAVELENGTH OF 3371 A. IT IS SHOWN THAT THE TRANSVERSE STRUCTURE OF THE LASER BEAM DEPENDS ON THE ADJUSTMENT OF THE MIRRORS, AND THAT THE LASER EMISSION IS COHERENT OVER THE ENTIRE APERTURE. THE EXPEDIENCY OF PUMPING SUCH LASERS WITH ANOTHER LASER IS DEMONSTRATED.

FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 577.1:612.C.14.18

K
KASYMOV, A. and ZAKIROVA, L. S., Tashkent State University imeni V. I. Lenin

"Fractionation of Radiotoxins and Study of Their Biological Properties"

Tashkent, Uzbekskiy Biologicheskii Zhurnal, No 3, 1970, pp 6-8

Abstract: Purified fractions of radiotoxins were isolated from irradiated potato tubers and rat liver and their biological properties were studied. Irradiation with Co^{60} gamma-rays was conducted at the Institute of Nuclear Physics, Academy of Sciences Uzbek SSR (dose rate 15 r/sec). The total dose for potato tubers was 50,000 r, and 1,000 r for rats. Radiotoxins from irradiated organisms were extracted 24 hr after irradiation and fractionated on a Sephadex 10- \bar{a} column. Absorption spectrum was measured at 265 millimicrons. The effect of radiotoxins on the growth and development of corn roots was studied. It was found that the most purified fractions act on corn roots much like gamma-rays, but to a much weaker degree.

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USSR

UDC: 621.315.592.001.5:537.533.8

KASYMOV, A. Kh. and NORMURADOV, M.

"Secondary Electron Emission of a Silicon Monocrystal Doped by Ion Bombardment as a Function of the Temperature"

Moscow, Radiotekhnika i elektronika, No 8, 1972, pp 1769-1770

Abstract: This brief communication is the follow-up to a previous paper written by the authors named above in the same journal (5, 17, p 1109) in which the method of measurement and the preparation of the target used in the present communication were given. In the present paper, the target to be bombarded by various ions is monocrystalline silicon with a resistivity of 1.50 ohm.cm, n-type, and a second crystal, p-type, with a resistivity of 2000 ohm.cm. The purpose of the experiment is to investigate the electron secondary emission from the target. Curves were obtained for the coefficient of secondary electron emission as functions of the energy of the primary electrons, in the energy range of 100-1800 ev for doped specimens heated to various temperatures. Curves are also plotted for the effect of target heating on the secondary electron emission coefficient as a function of the primary

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KASYMOV, A. Kh., et al, Radiotekhnika i elektronika, No 8, 1972, pp 1769-1770

electron energy, and for the maximum secondary emission coefficient as a function of the heating time at various specimen temperatures. It is noted that with an increase in specimen temperature up to 400° C at the time of the doping, there is a decrease in the relative change of the coefficient as compared to the change at room temperature.

2/2

- 94 -

USSR

UDC 537.533.8

ARIFOV, YU. A., KASYMOV, A. KH., VAKHIDOV, U.V.

"Investigation Of The Secondary Electron Emission Of Tungsten Single Crystals"

[Nauchn. tr.] Tashkent politekhn. in-t ([Scientific Works] Tashkent Polytechnical Institute), 1970, No 65, pp 329-334 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A17)

Translation: The secondary electron emission of the [111] and [110] facets of single crystals of tungsten in the area of primary electron energies $E_p = 100 \div 2000$ e.v. was investigated in a vacuum of $\sim 10^{-7}$ mm mercury by the method of double modulation with automatic recording of the results. The dependence of the secondary emission coefficient (σ) on the energy of the primary electrons for single crystal W obtained agrees satisfactorily with data from the literature, which confirms the precision of the method of measurement used. The results for single crystal targets were: for $W[111]$ $\sigma_{max} = 1.21$, with $E_{pm} = 900$ e.v.; for $W[110]$ $\sigma_{max} = 1.11$, with $E_{pm} = 1000$ e.v.; (for polycrystalline W $\sigma_{max} = 1.44$, with $E_{pm} = 700$ e.v.). N.S.

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- 105 -

USSR

UDC 537.531.8

ARIFOV, U.A., KASYMOV, A. KH., SUNAZAROV, D.

"Secondary Electron Emission Of Sodium And Potassium Films"

[Nauchn. tr.] Tashkent. politekhn. in-ta ([Scientific Works] Tashkent Polytechnical University), 1970, No 65, pp 321-328 (from RZh--Elektronika i yeye primenaniye, No. 12, December 1970, Abstract No 12a16)

Translation: An investigation is conducted by the oscillographic method of the total energetic spectrum of secondary electrons and its separate segments as a function of the thickness of Na and K films on Mo. In proportion to the deposition of the films, a change was observed of the intensity of the maximums of the corresponding emission of slow Auger electrons, the peaks of the characteristic losses, and the elastically reflected electrons. The results are explained by the change of operation of the system's work function in the process of deposition of the film. 3 ill. & ref. N.S.

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USSR

UDC 537.533.8

ARIFOV, U. A., VAKHIDOV, U. A. and KASYMOV, A. KH.

"Secondary Electron Emission of Tungsten and Molybdenum Single Crystals"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No. 3, Mar 71, pp 560-561

Abstract: Secondary electron emission of metals was studied in tungsten and molybdenum single crystals, since all previous studies except for one were made with polycrystalline samples and it was of interest to study this phenomenon in single crystals samples to examine the effect of secondary emission properties from the aspect of structure. The secondary electron emission of tungsten and molybdenum single crystals in the primary electron range $E_p = 100-1500$ ev was studied for the faces (111) and (110) of a tungsten single crystal and the faces (100) and (110) of a molybdenum single crystal using the double modulation method. Curves are given showing the total coefficient of secondary electron emission σ , the truly secondary electrons δ , and the elastically and inelastically reflected electrons η as a function of the energy of the primary electrons E_p for these faces

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USSR

in both single crystals. It was found that there are differences in the fine structure in the curves $\sigma = f(E_p)$, $\delta = f(E_p)$, and $\eta = f(E_p)$ for different faces of tungsten and molybdenum and that these differences depend on the packing density of the target studied. For denser faces the maxima are observed at greater energies than for less densely packed faces. The values of σ , δ , and η corresponding to $E_{p \max}$ have smaller values for the densely packed faces.

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- 34 -

USSR

UDC: 51

KASYMOV, S.

"On a Problem of Optimum Planning of Transportation of Non-metalliferous Construction Materials in Central Asia"

Nauch. zap. Tashkent. in-t nar. kh-va (Scientific Notes. Tashkent Institute of the National Economy), 1971, vyp. 60, pp 43-48 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V590)

[No abstract]

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USSR

UDC 51

DADABAYEVA, R. A., IBRAGIMKHODZHAYEV, S., ~~et al.~~ KASYMOV, S.

"Determining the Linear 'Kinematic' Production Function Considering the Effect of External Loading"

Nauch. zap. Tashkent. in-t nar. kh-va (Scientific Notes of Tashkent Institute of the National Economy), 1971, vyp. 60, pp 49-53 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V509)

No abstract

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1/3 009 UNCLASSIFIED PROCESSING DATE--02DEC70
TITLE--PRODUCT OF THE CONDENSATION OF LUPININIC ACID WITH PIPERIDINE -U-
AUTHOR--(04)-ASLANDV, KH.A., KASYMOV, T.K., SADYKOV, A.S., ISHBAYEV, A.I.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (4), 492-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ORGANIC ACID, ALKALOID, HETEROCYCLIC NITROGEN COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/0947 STEP NO--UR/0409/70/000/004/0492/0494
CIRC ACCESSION NO--AP0134668
UNCLASSIFIED

2/3 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134668

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO A SOLN. OF 11 G LUPINIC ACID IN 120 ML PIPERIDINE WAS ADDED PORTIONWISE 46 G P SUB2 O SUB5 AND THE MIXT. REFLUXED 3 HR TO YIELD 75.5PERCENT D I (X EQUALS O, R EQUALS PIPERIDINO) (D II), B SUB5 228-30DEGREES, (ALPHA) SUBD 54.2DEGREES (ETOH); PERCHLORATE M. 199-200DEGREES (H SUB2 O); HCL SALT M. 114-15DEGREES (ME SUB2 CO). II WAS HYDROLYZED BY 16 HR REFLUX IN 20PERCENT H SUB2 SO SUB4. II (3 G) IN 50 ML ET SUB2 O WAS ADDED TO A WARM SOLN. OF 1 G LIALH SUB4 IN 150 ML ET SUB2 O AND THE MIXT. HEATED 3 HR TO YIELD D I (X EQUALS H SUB2, R EQUALS PIPERIDINO) (D III), B SUB10 158-60DEGREES, (ALPHA) SUBD 196.5DEGREES (ETOH); PICRATE M. 205-60DEGREES (ETOH). III WAS ALSO OBTAINED BY HEATING 3.9 G BROMOEPILUPINANE (D IV) AND 20 ML PIPERIDINE IN A SEALED TUBE AT 15-60DEGREES FOR 6 HR. A SOLN. OF 10 G D I (X EQUALS O, R EQUALS OH) IN 200 ML WAS SATD. WITH HCL FOR 8 HR, THEN KEPT 24 HR AND REFLUXED 4 HR TO YIELD 55PERCENT D I (X EQUALS O, R EQUALS OET) (D V), B SUB4 139-40DEGREES, (ALPHA) SUBD 48DEGREES (ETOH). A SOLN. OF 4.7 G V IN 70 ML ET SUB2 O WAS ADDED TO A WARM SOLN. OF 2 G LIALH SUB4 IN 300 ML ET SUB2 O AND THE MIXT. REFLUXED 4 HR TO YIELD 98.4PERCENT D I (X EQUALS H SUB2, R EQUALS OH (D VI), M. 79-80DEGREES, (ALPHA) SUBD 36.8DEGREES (ETOH). TO A SOLN. OF 3.5 G D VI IN 60 ML C SUB6 H SUB6 WAS ADDED PORTIONWISE 15 G PBR SUB5 AND THE MIXT. REFLUXED 2 HR TO YIELD 98.5PERCENT D IV, B SUB2 126-30DEGREES (ALPHA) SUBD 61DEGREES (ETOH). LUPININE (11 G) WAS BROMINATED UNDER SIMILAR CONDITIONS TO YIELD 99PERCENT L IV, B SUB2 126-30DEGREES, (ALPHA) SUBD MINUS 27.2DEGREES (ETOH); PICRATE M. 134-5DEGREES (H SUB2 O).

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3/3 009

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PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134668

ABSTRACT/EXTRACT--L III WAS OBTAINED SIMILARLY TO D III IN 97PERCENT

YIELD, 8 SUB10 153-60DEGREES, (ALPHA) SUBD MINUS 37DEGREES (ETOH);

PICRATE 113-14DEGREES (ETOH).

FACILITY: TASHKENT, GOS. UNIV.

IM. LENINA, TASHKENT, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INTERLAYER FORMATIONS IN IONOSPHERE -U-
AUTHOR--KASYMOVA, A.G. *K*
COUNTRY OF INFO--USSR
SOURCE--KIEV, NAUKOVA DUMKA, 1970, 129 PP
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES
TOPIC TAGS--IONOSPHERE, IONOSONDE, E LAYER, F LAYER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0679 STEP NO--UR/0000/70/000/000/0001/0129
CIRC ACCESSION NO--AM0114856
UNCLASSIFIED

2/2 021

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PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AM0114856

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTRODUCTION 5. CHAPTER I
METHODS FOR INTERPRETATION OF INTERLAYER FORMATIONS OF IONOSPHERE 7.
II LAYER E2 24. III ADDITIONAL SUBMAXIMA OF IONIZATION OF THE
IONOSPHERIC F REGION AND VERTICALLY MOVING DISTURBANCES 93.
BIBLIOGRAPHY 123. THE AUTHOR GENERALIZES AND CLASSIFIES THE AVAILABLE
DATA ON INTERLAYER FORMATIONS OF IONOSPHERE OBTAINED ON GROUND
IONOSONDES. DISCUSSED IS THE PLANETARY DISTRIBUTION OF ELECTRON
CONCENTRATION AND FREQUENCY OF APPEARANCE OF THE E2 LAYER, APPROXIMATE
DIMENSIONS OF INTERMEDIATE LAYERS, CONNECTION BETWEEN PARAMETERS OF
INTERMEDIATE LAYERS AND GEOPHYSICAL AND HELIOPHYSICAL PHENOMENA. THE
AUTHOR ANALYZES THE APPLICATION OF THE EQUATION OF A SIMPLE LAYER TO
INTERMEDIATE LAYERS AND EVALUATES THE EFFECTIVE RECOMBINATION
COEFFICIENT, RATES OF ELECTRON FORMATION AND THE IONIZATION INDEX. THE
BOOK WAS WRITTEN FOR GEOPHYSICISTS AND ASTRONOMERS.

UNCLASSIFIED

USSR

UDC 615.371:576.851.42]-015.4:612.015.1

KASYMOVA, Kh. A. and CHERNIKOVA, Z. S., Scientific Research Institute of Regional Pathology, Ministry of Health, Kazakh SSR

"State of Natural Immunity in Persons Inoculated Several Times With Live Brucellosis Vaccine BA-19. III. The Effect of Vaccine Strains on the Lysozyme Content Under Experimental Conditions and in Vaccinated Persons"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 91-95

Abstract: Inoculation of guinea pigs with BA-19 vaccine or Brucella strains 16 or 998/102 lowered the lysozyme titer on day 7. It rose slightly by day 30 but continued to decrease thereafter, reaching the lowest point by day 60. In humans, BA-19 vaccine likewise decreased the lysozyme titer in the blood, the maximum decrease occurring 2 months after inoculation. However, the lysozyme titer in saliva after decreasing for 15 days increased sharply thereafter and by day 30 reached or exceeded the original level. The greatest decrease in lysozyme titer coincided with the maximum accumulation of specific agglutinins in both guinea pigs and humans.

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USSR

UDC 619.616.988.23-084:636.9

KASYUK, I. I., State Scientific Control Institute for Veterinary Preparations

"Trials of Dry Virus Vaccine Against Aujeszky's Disease in Fur-Bearing Animals"

Moscow, Veterinariya, No 10, Oct 70, pp 47-48

Abstract: Foxes and minks were inoculated intramuscularly twice at 14-day intervals with vaccine prepared from a modified strain of Aujeszky's disease virus BUK TK-300 (dose, 2×10^4 TCD₅₀). The strain was developed by the Czech researcher A. Zhuffa, who obtained it by repeatedly passaging the "Bucharest" strain on chorioallantoic membrane in chick embryos. Twenty days or 3-1/2 to 4 months later, the animals were fed virus-containing material from the parenchymatous organs of rabbits that had died of experimentally induced Aujeszky's disease. All of the vaccinated animals survived, while all of the controls died.

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1/2 040 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--HYDROXYETHYL CYANOETHYL CELLULOSE -U-

AUTHOR-(05)-KATALEVSKAYA, I.V., YERMILOVA, I.I., SMIRNOVA, G.N., KHIN,
N.N., PROKOFYEVA, M.V.
COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (2), 23-5 *K*

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--HYDROXYL RADICAL, CELLULOSE RESIN, CYANIDE, CHEMICAL
SYNTHESIS, POLYMER, TRANSITION TEMPERATURE, PLASTIC FILM, TENSILE
STRENGTH, DIELECTRIC PROPERTY, ADHESION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0673

STEP NO--UR/0191/70/000/002/0023/0025

CIRC ACCESSION NO--AP0119581

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119581

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYNTHESIS AND PHYSICOCHEM. PROPERTIES OF THE TITLE POLYMER (I) (USED AS A BINDER FOR ELECTROLUMINOPHORS) WERE STUDIED. THE MOST EFFECTIVE METHOD OF PREPG. I INVOLVED CYANOETHYLATION OF TECH. HYDROXYETHYL CELLULOSE (II) (3.5 MOLES OF CH SUB2:CHCN-ELEMENTARY UNIT OF II) AT 30DEGREES FOR 3 HR. I HAD A GLASS TRANSITION TEMP. OF SIMILAR TO 40DEGREES AND A VISCOELASTIC TRANSITION TEMP. OF 100DEGREES. COLORLESS AND TRANSPARENT FILMS WERE PREPD. FROM SOLNS. OF I. THE FILMS EXHIBITED HIGH TENSILE STRENGTH, RELATIVE ELONGATION AT BREAK, AND GOOD DIELEC. PROPERTIES, AND WERE READILY BONDED TO GLASS, METALS, AND OTHER MATERIALS.

UNCLASSIFIED

USSR

UDC 621.372.8.092.22

KATALEVSKIY, V. M., ZHDANOV, N. N., SHADRIN, A. I.

"Study of the Dispersion Properties of some Delay Systems"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 14, pp 84-90 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B124)

Translation: The method of equivalent circuits was used to investigate the dispersion relation of complex delay systems. There are 5 illustrations and a 1-entry bibliography.

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- 140 -

USSR

UDC 621.372.8.092.22

SHEIN, A. G., KATALEVSKIY, V. M.

"Calculating the Characteristics of Opposing Rod Delay Systems by the Electrodynamic Method"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 14, pp 77-82 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B123)

Translation: The dispersion equation of a delay system is obtained; the dispersion characteristic is constructed. There are 5 illustrations and a 5-entry bibliography.

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- 141 -

Acc. Nr: AP0043677

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 2, pp. 544-550

K

PHOTON DRAG OF FREE CARRIERS IN DIRECT INTERBAND
TRANSITIONS IN SEMICONDUCTORS

Danishevskiy, A. M.; Katal'skiy, A. A.;
Yaroshetskiy, I. D.; Ryvkin, S. M.

Drag of free carriers by light in direct optical transitions is predicted and experimentally observed. The experiment was carried out in hole germanium by means of a CO₂ Q-switched laser with a peak power of about 2 kW. With variation of the temperature from room to nitrogen temperature inversion of the drag current sign is found to occur. The regularities observed are in good agreement with the theory developed in ref [4].

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REEL / FRAME
19770081

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USSR

UDC 612.816

~~KATALYMCH, L. D.~~, Chair of Zoology, State Pedagogical Institute imeni
I. N. Ul'yanov, Ul'yanovsk

"Parabiogenic Nature of Wave Excitation"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, No 1,
1970, pp 26-31

Abstract: Experimental data confirming N. Ye. Vvedenskiy's view that wave excitation is parabiogenic in nature are presented. Bipolar electrodes were used to derive action potentials from the dog gastrocnemius in response to paired stimulation (strong and weak) of the sciatic nerve. The amplitude of the responses were independent of both the level of polarization of muscle fiber membranes and the degree of synchronization of the responses of some of the fibers. After fairly long intervals between two stimulations, the responses to each were the same and they equalled the value of maximum excitation. When the interval was decreased, the amplitude of the response to the strong stimulus increased, and the amplitude of the response to the weak stimulus decreased proportionally (prodromal stage). After additional shortening of the interval, the amplitude of the responses to both

1/2