"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

GUSSAK, L. A., Goreniye i Vzryv--Sbornik, Nauka, 1972, pp 365-369

flame foci from the primary zone of the combustion chamber and, partially, by afterburning reactions within the volume. An attempt is made at an experimental justification of a possible mechanism which leads to the appearance of foci with a slow volume reaction. 2 figures. 7 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--NITRATION OF PENTAERYTHRITOL BY USING THE NITRIC ACID, SULFURIC ACID, AND WATER SYSTEM -U-

AUTHOR-(04)-YEREMENKO, L.T., PARUSHKOVA, R.P., PORYADKOVA, M.A., STOTSKAYA, N.M.

COUNTRY OF INFO--USSR

S

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 134-40

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PENTAERYTHRITOL, NITRIC ACID, SULFURIC ACID, CHEMICAL KINETICS, NITRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1670 STEP NO--UR/0062/70/000/001/0134/0140

CIRC ACCESSION NO--AP0100274

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4"

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2/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0100274

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. KINETIC DATA ON NITRATION OF PENTAERYTHRITOL BY AQ. HNO SUB3-H SUB2 SO SUB4 (RESULTS SHOWN GRAPHICALLY VARIOUS CONCNS. OF REACTANTS) SHOWED THAT THE O-NITRATION OF THE ALC. OCCURS THROUGH REACTION, NOT OF THE NITRONIUM ION, BUT, EVIDENTLY, A MOL. OF FREE AND UNIONIZED HNO SUB3.

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ELECTRONICS
Antennas

USSR

STOTSKIY, A. A.

UDC: 621.371.2

"Fluctuation Characteristics of the Electric Strata of the Troposphere"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 11, Nov 72, pp 2277-2284

Abstract: The structure function of the electric strata of the troposphere is examined as a characteristic of the fluctuation properties of the tropospheric layer. An attempt is made to construct the time and space structure functions on the basis of an analysis of available experimental data. Preliminary studies show that the space structure function is an increasing function up to very large scales of the order of 100-1000 km. This means that the dimensions of any continuous ground-based apertures will always be less than the radius of correlation of phase errors due to nonhomogeneity of the troposphere. The basic energy of phase fluctuations is related to large spatial intervals and low frequencies. Therefore the effect of tropospheric nonhomogeneities can be considerably reduced in many instances by shortening the observation time. In the region of small scales the phase errors introduced by the troposphere are nearly proportional to antenna size. Consequently all effects related to tropospheric "trembling"

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USSR

STOTSKIY, A. A., Radictekhn. i Elektron., No 11, Nov 72, pp 2276-2284

of radio sources are weakly dependent on antenna size in the case of continuous antennas and interferometers with moderately long bases. The author thanks Yu. N. Pariyskiy (Main Astronomical Observatory, Academy of Sciences of the USSR) and J. W. Waters (Massachusetts Institute of Technology) for furnishing research data.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

UDC: 621.396.67.3.012.12

USSR

STOTSKIY, A. A. and UMARBAYEVA, N. D.

"Width of the Average Radiation Pattern of a Linear Antenna in a Turbulent Atmosphere"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No 9, 1970, pp 1787-1790

Abstract: The authors calculate the radiation pattern spread for a linear antenna resulting from the effect of atmospheric turbulence. Statistical spread conditioned by a shift of the pattern as a whole is not considered. Calculations are given for the smallest average radiation pattern spread for the earth's atmosphere along with the necessary antenna dimensions for achieving such a pattern. Thus the minimal value of the average radiation pattern spread for an earth-based radio-telescope is $(2\bar{\theta}0.5)$ min $\sim 1''$ where the dimension of the antenna should be S opt $\sim 2.10^2\lambda$. For optical telescopes these values are $(2\bar{\theta}0.5)$ min $\sim 2''$ and S opt ~ 5 cm. The following estimates were obtained for the value $(2\theta_{0.5})$ min $\sim a, \sim 3''$ in the radio frequency region and $\sim 6''$ in the optical region. The original article has seven figures, one formula, and four bibliographic entries.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--AUTOCOLLIMATION METHOD FOR ADJUSTING AND MONITORING AN ANTENNA WITH VARIABLE PROFILE -U-

AUTHOR-(03)-KHODZHAMUKHAMMEDOV, N., STOTSKIY, A.A., BORDVIK, V.N.

5

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKHNIKA I ELEKTRONIKA (RADIO AND ELECTRONICS), 1970, NO 2, PP 257-262

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--ANTENNA CALIBRATION, COLLIMATION/(U)PULKOVO RADIOTELESCOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1863 STEP NO--UR/0109/70/000/002/0257/0262

CIRC ACCESSION NO--AP0130690

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

2/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0130690

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSIDERED IS A NEW METHOD FOR ALIGNING AN ANTENNA OF VARIABLE PROFILE WITH A GROUND BASED SOURCE. THE EXPERIMENTAL VERIFICATION OF THE METHOD WAS MADE ON THE LARGE PULKOVO RADIOTELESCOPE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR UDC 621.371:551.510.52

STOTSKIY, A. A., KAYDANOVSKIY, M. N., and MAGAMADOVA, T. A.

"Structural Functions of Phase Fluctuations in Radio Waves Propagated in Atmospheric Layers Near the Ground"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 2 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 2--collection of works) "Nauka," 1972 pp 56-60 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A356)

Translation: Results are given of an experimental determination of the difference in electrical range distances and the computation of the time structure functions of the fluctuation in this quantity. It is established that in propagating waves along paths near the ground, the index for the degree of the structural function is 0.6-0.9, which is quite different from the "5/3" law typical of the free atmosphere. Three illustrations, bibliography of five. A. L.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR UDC: 51:801

STOTSKIY, E. D.

"Concerning Some Rigorous Hierarchical Languages"

Nauch.-tekhn. inform. Sb. Vses. in-t nauch. i tekhn. inform. (Scientific and Technical Information. Collection of the All--Union Institute of Scientific and Technical Information), 1972, ser. 2, No 4, pp 40-45, 48 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V671 [author's abstract])

Translation: Conclusions in a generative grammar are considered such that the number of entries of auxiliary letters in each intermediate word of the conclusion does not exceed a given natural number n. The parameter n determines the hierarchy of classes of languages for grammars of a given type. Hierarchies of classes of languages are studied which correspond to matrix and conditional grammars.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

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UDC: 51:801

STOTSKIY, E. D.

"Generalized Grammars and Their Properties"

V sb. Issled. po mat. lingvist., mat. logike i inform. yazykam (Research on Mathematical Linguistics, Mathematical Logic and Information Languages--collection of works), Moscow, "Nauka", 1972, pp 7-26 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V631)

Translation: Relations are found between classes of generalized grammars (RZh-Mat, 1971, 7V800 and 12V1054). The index function $M_\Gamma(n)$ of grammar Γ is defined as the smallest number m such that each word of the generated language of length n has a derivation which utilizes not more than m auxiliary symbols in each intermediate word. For context-free grammars the index function has an order of growth no higher than $\log_2 n$, and this estimate is reached. For grammars of type (2,3) the index function may have order of growth n. Languages of type (2,3) exist which cannot be generated by (2,3)-grammars of finite index. If for grammar Γ of type (2,3) there is a known constant C such that $M_\Gamma(n) < C$, then the problem of nonemptiness and finiteness of a generated language for grammar Γ is solvable. A. Maslov.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR UDC: 51:801

STOTSKIY, E. D.

"On Grammars With Rules of Special Form"

NTI. Ser. 2, No 6, 1971. Avtomatizatsiya perevoda tekstov (Scientific and Technical Information. Series 2, No 6, 1971. Automation of Text Translation) (from Rzh-Kibernetika, No 1, Jan 72, Abstract No 1V1140)

Translation: The paper deals with formal generating grammars with constraints applied to the form of their rules. The generating capacity of the levocontextual grammars introduced by L. G. Samoylenko and their properties are studied. The concept of a reversible grammar, which generalizes the concept of a contextless grammar is introduced. Author's abstract.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

Acc. Nr: AP0037845 S Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 108-114

SINGLE AND MILTIPLE IONIZATION OF LEAD ATOMS BY ELECTRONS

Pavlov, S. I.; Stotskiy, G. I.

Methods for measurement of the true cross sections for ion production by electron impact are analyzed. For measurement of the true cross sections one must know the exact value of the proprtionality coefficients between the ion current in the source and the ion current recorded by the detector or else apply the so-called difference method. The difference method is employed for measuring the cross sections for production of Pb^{+} to Pb^{5+} ions by electron impact. The cross sections were normalized according to the known value of the total cross section. The single ionization cross section measured for lead at energies above 260 eV agrees with that calculated in the Born approximation. A structure can be discerned in the initial part of the single ionization curve. The results confirm the power threshold law for single and double ionization of lead atoms by electrons.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--FINAL VERSION OF DRAFT STATE STANDARD FOR UNITS OF PHYSICAL VALUES -U-

AUTHOR--STOISKIY, L.R.

COUNTRY OF INFO--USSR

SOURCE--STANDARTY I KACHESTVO, 1970, NR 5, PP 42-44

DATE PUBLISHED-------70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--ACCURACY STANDARD, MEASUREMENT, MEASURE THEORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/0113 STEP NO--UR/0422/70/000/005/0042/0044

CIRC ACCESSION NO--AP0122379

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

2/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122379

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE PRESENTS THE CHARACTERISTIC FEATURES OF THE FINAL VERSION OF THE STANDARD UNITS OF PHYSICAL VALUES IN COMPARISON WITH THE CURRENTLY VALID STANDARDS FOR UNITS OF MEASURE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

(4)

JPRS 59393

29 June 1973

APPLICATION OF DYNAMIC NUCLEAR POLARIZATION TO INCREASE THE SENSITIVITY AND SPEED OF NUCLEAR PRECESSION MAGNETOMETERS

[Article by G. V. Skrotskiy, A. P. Stepanov, V. M. Skrotskiy, and A. I. Filatov: Leningrad, Geofizicheskaya Apparatura, Russian, No 42, 1970, pp 10-37]

Despite the successful development of quantum optical magnetometers for different purposes, nuclear magnetometers continue to firmly hold their own for measurements on the earth, in outer space, and in the sea and are also used extensively for the solution of many geological problems (Rotshteyn and Tsirel', 1963).

Nuclear precession magnetometers (NPM) have a number of essential advantages, not only in comparison with induction and ferroprobe magnetometers, but also with respect to optical magnetometers. Nuclear precession magnetometers ensure high accuracy in absolute and relative measurements, do not require special temperature stabilization of the signal, do not have drift in the metering level of the signal, and their readings are practically independent of the orientation of the device's pickup in space relative to the direction of the field being measured. In addition, NPM are reliable and operationally stable, are small and light, and are convenient to use (Waters and Phillips, 1956; Ryzhkov and Skrotskiy, 1961; Pomerantsev, Ryzhkov, and Skrotskiy, 1967).

The standard operating conditions of NPM are ensured by prior magnetization or polarization of the actuating material of the pickup. Polarization is usually realized by passing a direct current through the coil of the pickup. This current creates a rather strong constant magnetic field, which is called the polarizing field, in the volume of the actuating material. Under the influence of this field, the actuating material is magnetized after a certain time. After nonadiabatic switching off of the polarizing field, free precession of the nuclear magnetic moments of the actuating material that are oriented by this field develops about the direction of the measured magnetic field. The precessing moments induce an EMF in the coil

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SKROTSKIY, V.M.

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that created the magnetizing field or in another, separate coil. The frequency of this EMF is associated in a simple manner with the magnitude of the measured external field.

The advantage of the use of this method of polarization in NPM, which was first proposed by Packard and Varian in 1953, is explained not so much by the exceptional simplicity of its realization as by the high reliability of the operation of the scheme as a whole. The scheme of the device includes a pickup containing the actuating material, an amplifier of the free precession signals, a measuring-recording device, a source of polarizing voltage, and a commutating device that ensures periodic switching of the pickup from the polarizing voltage source to the input of the precession signal amplifier.

However, in addition to the enumerated virtues, NPM with polarization of the actuating material by a strong constant magnetic field have a number of deficiencies. The major deficiency, which is due to the method used to create polarization of the actuating material, consists in the unavoidable cyclic character of the operation of the magnetometer. As a result, a pause, during which the field is not measured, develops during time intervals that are of the order of or greater than the spin-lattice relaxation time. In the actuating materials that are currently being used, the time expended in polarization several times exceeds the measurement time and amounts to one to several seconds.

A certain time, which is greater, the more accurately the frequency must be measured, is needed for the measurement of the precession frequency. The method of free precession therefore makes it possible to measure the magnetic field strength, averaged for the measurement time, and for this reason does not make it possible to detect changes in the magnetic field that occur during the measurement. An increase in the rate of operation of the magnetometers inevitably results in a loss in the accuracy of the measurements. These peculiarities of NPM are not always acceptable for practical purposes (Rotshteyn and Tsirel', 1963; Amosov, Rotshteyn, and Tsirel', 1967).

The low magnitude of the nuclear precession signal should also be included among the inadequacies of nuclear precession magnetometers. In order to ensure the necessary signal-noise ratio and to obtain high sensitivity (and, consequently, accuracy in the measurements), it is necessary to use an extremely large volume of actuating material and a strong polarizing field. However, even these measures are not always effective. When the volume of the pickup is increased, the nonuniformity of the measured field begins to have a stronger effect, and this leads to rapid attenuation of the precession signal and to an increase in the error in the measurements. However, the polarizing field strength can be increased only up to definite values. Substantial technical difficulties associated with the necessity for ensuring the nonadiabatic switching off of this field and also with the thermal operation of the pickup develop at strong (above 500 Oe) fields. In

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

1/2 009 UNCLASSIFIED

TITLE--REPLACEMENT OF BLAST FURNACE SLAG WITH OPOKA -U- PROCESSING DATE--30OCT70

AUTHOR-(03)-STOVBA, R.V., ANANYEV, V.N., TRVASTSINA, A.I.

COUNTRY OF INFO--USSR

SOURCE--TSEMENT 1970, (2), 19-20

DATE PUBLISHED--------70

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

TOPIC TAGS--BLAST FURNACE, SLAG, CEMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1983 STEP NO--UR/0101/70/000/002/0019/0020

CIRC ACCESSION NO--AP0118942

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

2/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118942

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF REPLACING PART OF SLAGS ADDED TO PORTLAND CEMENT AND SLAG PORTLAND CEMENT WAS STUDIED AS WELL AS OF OBTAINING PUZZOLANI PORTLAND CEMENT ON THE BASIS OF OPOKA. COMBINED GRINDING OF CLINKER, GYPSUM, SLAG, AND OPOKA WAS CARRIED OUT TO A RESIDUE OF 8.5PERCENT ON SIEVE NO. 008. GYPSUM WAS ADDED IN THE AMT. OF 4PERCENT BASED ON CEMENT WT. REPLACEMENT OF SLAG BY UP TO 15PERCENT OPOKA IMPROVES THE STRENGTH OF PORTLAND CEMENT AND RAISES ITS QUALITY TO TYPE 600. IF THE GRINDING IS IMPROVED TO A RESIDUE OF ONLY 5PERCENT ON SIEVE NO. 008 THE ACTIVITY OF THE CEMENT IS IMPROVED TO 788 KG-CM PRIME2. REPLACEMENT OF SLAG BY OPOKA IN SLAG PORTLAND CEMENT IMPROVES ITS STRENGTH. GRINDING TO A RESIDUE OF 5PERCENT ON SIEVE NO. 008 IMPROVES THE ACTIVITY TO 722KG-CM PRIME2 AFTER 28 DAYS. WITH THE ADDN. OF 20-30PERCENT OPOKA PUZZOLANI PORTLAND CEMENT OF HIGH QUALITY CAN BE OBTAINED IF THE RESIDUE ON SIEVE NO 008 IS 5 PERCENT. MIXTS. WITH OPOKA ARE MORE EASILY GROUND THAN THOSE WITH BLAST FURNACE SLAGS.

FACILITY: OL'SHAN. TSEMENT. ZAVOD, OLSHANKA, USSR.

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USSR

UDC 621.396.6-181.5

BYLOV, K. V., GLAZKOV, YU. B., OGANEZOV, R. KH., STOVBA, V. I., SOKOLOV, V. P., STRAKHOV, V. S.

"Utilization of 2T603 Crystals to Create Medium Power Film Hybrid Circuits"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronic Engineering. Scientific and Technical Collection. Semiconductor Devices), 1970, vyp. 6 (56), pp 118-120 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10V189)

Translation: The structural design of a caseless version of a medium power semiconductor triode based on the series semiconductor triode type 2T603 of npn structure is described. Results are presented from measuring the thermal resistance when mounting the semiconductor triode on the backing of the microcircuit by two methods — soldering (with indirect pulse heating) and microwelding. It is demonstrated that the most effective means of mounting the semiconductor triode on the backing is solder. The magnitude of the thermal resistance drops significantly on increasing the thermal conductivity of the backing material. There are 2 illustrations and 1 table.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

Acc. Nr: AP0051975 Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 3, pp 113-116

SOME MORPHOLOGICAL CRITERIA OF AFFERENT SPINAL CORD INNERVATION OF THE INTERNAL ORGANS

G. V. Stovichek, V. M. Nikulin, R. I. Zelenkov

Yaroslav Medical Institute

Visceral branches of sympathetic nodes leading to the internal organs were investigated to determine the presence in them of intervertebral sensory ganglia neuron dendrites. Afferent spinal conductors have always been demonstrable in the nerves of the esophagus, lungs, heart, small intestine, liver and kidneys of men and dogs, but there is a great difference in the number of these fibers in the nerves of various organs. Thus, the absolute number of sensory conductors is the highest in the esophageal nerves and diminishes in the following order: esophagus→lungs→heart→liver→small intestine→kidneys. Viscerosensory functions of certain organs, especially of the small intestine, kidneys and liver are provided with a relatively small number of neuron elements coming from intervertebral nodes. It is obvious that many internal organs possess local neuro-reflectory mechanisms and have no need in a greater scope of afferent spinal cord innervation for the implementation of specific functions.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

1/2 015 UNCLASSIFIED PROCESSING DATE- [illegible]

TITLE--ON THE THREE PARTICLE RELATIVISTIC PROBLEM AND THE GLAUBER TYPE REPRESENTATION -U-

AUTHOR-(02)-KVINIKHIDZE, A.N., STOYANOV, D.

COUNTRY OF INFO--USSR

SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 3, PP 332-341

DATE PUBLISHED--------70

SUBJECT AREAS--MATHEMATICAL SCIENCES, PHYSICS

TOPIC TAGS--THREE BODY PROBLEM, GREEN FUNCTION, PAIR THEORY, RELATIVISTIC QUANTUM MECHANICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1252 STEP NO--UR/0646/70/003/003/0332/0341

CIRC ACCESSION NO--AP0124903

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

2/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124903

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THREE DIMENSIONAL FORMALISM OF THREE PARTICLE RELATIVISTIC PROBLEM ON THE BASIS OF TWO TIME GREEN FUNCTION IS DEVELOPED. IN AN APPROXIMATION WHICH IS SIMILAR TO PAIR INTERACTION OF THE KERNELS OF RESULTING EQUATIONS ARE EXPRESSED ONLY IN TERMS OF QUASIPOTENTIAL QUANTITIES. GLAUBER TYPE FORMULA FOR RELATIVISTIC SCATTERING ON THE BOUND STATE IS DERIVED. FACILITY: TBILISSKIY GOSUDARSTVENNYY UNIVERSITET. FACILITY: OB'YEDINENNYY INSTITUT YADERNYKH ISSLEDOVANIY.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

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USSR

UDC: 621.384.664

GORIN, Yu. P., DENISOV, S. P., MITIN, A. A., STOYANOV, D. A., SYTNIK, V. V.,
Institute of High-Energy Physics, Serpukhov

"A Target for Precise Measurements of the Cross Sections of the Interaction of Particles With Protons and Deuterons"

Moscow, Pribory i Tekhnika Eksperimenta, No 2, Mar/Apr 72, pp 29-31

Abstract: The paper describes the design and gives the characteristics of a target used for measuring the complete cross sections of interaction of pions, kaons, and protons with protons and deuterons on the accelerator at the Institute of High-Energy Physics in Serpukhov. A diagram of the target is shown in the figure. The target is made entirely of stainless steel, with the exception of the shields and windows. The operating procedure for determining interaction cross sections is described. Measurement errors are analyzed. One figure, bibliography of four titles.

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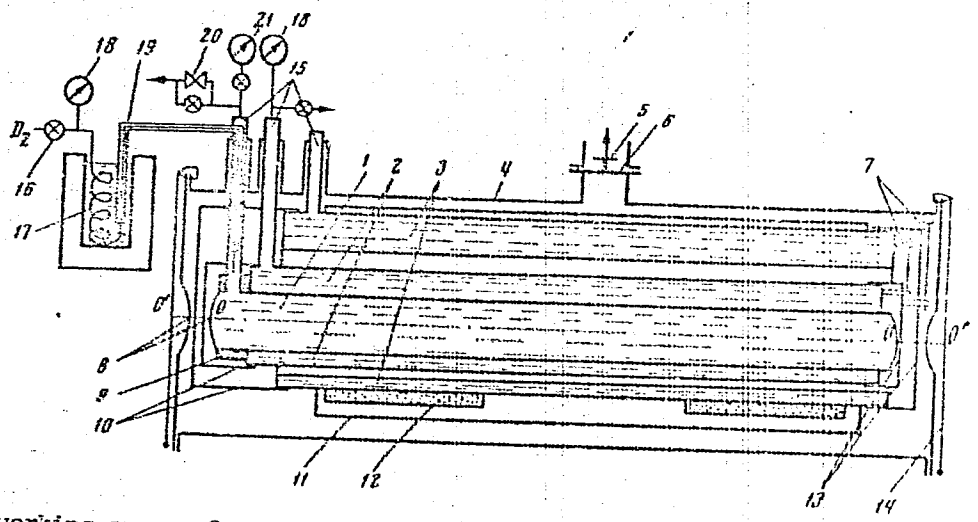
"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

GORIN, Yu. P. et al., Pribory i Tekhnika Eksperimenta, No 2, 1972, pp 29-31



1--working space, 2--guard space, 3--nitrogen volume, 4--vacuum jacket, 5--knife, 6--diaphragm, 7--cables, 8--mylar windows, 9--zeolite, 10--copper shields, 11, 13--aluminized mylar shields, 12--activated charcoal, 14--plumb line, 15--filler tubes, 16--valve, 17--coil, 18--manometric vacuum meter, 19--siphon, 20--safety valve, 21--reference instrument.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EMV-100L ELECTRON MICROSCOPE -U-

AUTHOR-(04)-STOYANOV, P.A., MOSEYEV, V.V., ROZORENOVA, K.M., RENSKIY, I.S.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 211-16

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON MICROSCOPE, PERMALLOY, OPTIC LENS, MOLYBDENUM OXIDE, INORGANIC CRYSTAL/(U)EMV100L ELECTRON MICROSCOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1863 STEP NO--UR/0120/70/001/000/0211/0216

CIRC ACCESSION NO--AP0118827

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

2/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0118827

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW ELECTRON MICROSCOPE WITH HIGH RESOLN. IS DESCRIBED. ALL ITS LENSES ARE MADE FROM DIFFERENT TYPES OF PERMALLOY. THE COLUMN OF THE MICROSCOPE HAS HIGH MECH. STABILITY. THE THEORETICAL RESOLN. OF 2 ANGSTROM WAS REALIZED IN PRACTICE. THE ELECTRON OPTICAL MAGNIFICATION IN PHOTOGRAPHING IR PARTICLES ON A C SUBLAYER WAS 440,000 TIMES. PHOTOGRAPHS OF THE AU LATTICE, (200) PLANE, AND FRESNEL DIFFRACTION BANDS ON THE EDGE OF MOO SUB3 CRYSTALS ARE GIVEN.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

STOYANOV, P. A., MOSEYEV, V. V., ROZORENOVA, K. M., RENSKIY, I. S.

"EMV-100L Electron Microscope of Limiting Resolution"

Moscow, Izvestiya Akademii Nauk, Seriya Fizicheskaya, Vol 34, No 7, 1970, pp 1388-1395

Abstract: This article is devoted to the electron microscope model EMV-100L and its construction, specifications, and capabilities. It has an accelerating voltage of 100 kV and a resolving power equal to the theoretical limit. Its column consists of the electron gun, two condensor lenses, the objective, and an intermediate and projection lens. There is also a second intermediate lens in the form of a modification of the objective tube; it is used to obtain electronograms. The column is very stable mechanically. All lenses are made of precision permalloy of various brands and, as a result, the field dispersion in the space between the lenses is substantially reduced and its effect on the miscroscope's adjustment practically eliminated. The article is liberally illustrated with cross-sectional diagrams of the instrument, photographs of its external appearance, and 1/1 some of the photomicrographs made with it.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--CONCERNING SOME STATISTICAL CHARACTERISTICS OF THE PATHOKINESIS OF SCHIZOPHRENIA, PROCEEDING WITH ATTACKS AND ACCOMPANIED BY MANIC STATES

AUTHOR-(02)-STOYANOV, S., LIBERMAN, YA.I.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970, VOL 70, NR 3, PP 418-424

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SCHIZOPHRENIA, PSYCHOSIS, STATISTICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0820 STEP NO--UR/0246/70/070/003/0418/0424

CIRC ACCESSION NO--AP0052256

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

2/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0052256

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS BY CLINICO STATISTICAL METHODS, STUDIED 126 SCHIZOPHRENIC PATIENTS SELECTED AMONG 1429 PATIENTS, WHO HAD PSYCHOTIC ATTACKS, WITH MANIC DISORDERS. IT WAS ESTABLISHED THAT IN THIS GROUP, EXCEPT MANIC STATES OTHER TYPES OF ATTACKS WERE ALSO SEEN: DEPRESSIVE ATTACKS, (29PERCENT), ONEIROID, (11PERCENT), ACUTE DELUSIONAL, (5PERCENT), DOUBLE AFFECTIVE, (3PERCENT). IN THE DEBUTS OF THE DISEASE AFFECTIVE ATTACKS PREVAILED (93,8PERCENT). AS THE DISEASE DEVELOPED THE SPECIFIC WEIGHT OF CATATONIC, HEBEPHRENIC AND HALLUCINATORY, DELUSIONAL DISORDERS INCREASED, WHILE AS THE DEPTH OF AFFECTIVE DISTURBANCES BECAME LESS. THE ONEIROID SYNDROME OCCURS TWICE AS FREQUENTLY IN INDIVIDUALS UP TO 20 YEARS, THAN IN THOSE WITH AN ONSET IN LATER AGE. IN FEMALES THERE WAS A RELATIVELY MORE AMOUNT OF ATTACKS THAN IN MALES (MAINLY DUE TO MORE FREQUENT DEPRESSIVE, PARANOID ATTACKS). THE MALES DISPLAYED A MORE AMOUNT OF REMISSIONS WITH MILDLY EXPRESSED PERSONALITY CHANGES. IN FEMALES THE REMISSIONS WERE CHARACTERIZED BY AFFECTIVE FLUCTUATIONS AND PSUEDONEUROTIC STATES.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

Acc. Nr: AP0047178

Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhiatrii, 1970, Vol 70, Nr 2, pp 256-261

PARAPHRENIC STATES IN REMITTENT SCHIZOPHRENIA OF ADOLESCENCY

V. M. Lupandin and St. Stoyanov

Among the 200 patients with recurrent forms of schizophrenia and an onset at 8—16 years, there were 50 cases where the disease was manifested by attacks with paraphrenic conditions. Distinct paraphrenic states were to be seen not earlier than at 13 years. They differend from similar states of the adults by the fact that the fantastical delusions in the adolescent had a more rudimentary character, while as the sensorial and catatonic disorders were displayed much more massively. In an intermittent course of the disease the paraphrenic conditions were one of the phases in the development of the oneiroid state, and the fantastical delusions developed in a close relationship with the special state of consciousness. The Attacks were of a transitory character. In an intermittent—progressive course of the disease with a slow development of the process the attacks were durative, with massively expressed affective, catatonic disorders, and fantastical delusions accompanying affective disorders. In cases of expressed progressiveness the attacks were of a frequent and protracted character, while as the fantastical delusions were related to phenomena of psychic automatisms.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

Acc. Nr: AP0038102

S

Ref. Code: UR 0326

PRIMARY SOURCE: Fiziologiya Rasteniy, 1970, Vol 17, Nr 1, pp 28-30

DEPENDENCE OF DARK RESPIRATION ON AIR HUMIDITY AND TEMPERATURE AND ON THE ENTROPY PRODUCED IN THE LEAF SYSTEM

Florov, R.Y.; Stoyanov, Zh. V.

Higher Forest-Engineering Institute, Sofia and Forestry Institute, Sofia, Bulgaria

The respiration rate in oak (Quercus pedunculata Ehrh.) leaves in dry or humid air and the entropy produced as determined on basis of heat and moisture transfer between the leaf and surrouding air were investigated. In dry air the respiration rate and entropy produced are is higher than in humid air. The heat of dissipation calculated on basis of the entropy produced is in dry air almost equal to the respiration energy. There is a discrepancy between these quantities in moist air; this is probably due to changes in the pathways of respiration.

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REEL/FRAME 19731151

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

GRISHINA, T. A., STOYANOVA, I. G.

"Effect of Object Thickness on Electron Microscope Image Quality"

Moscow, Izvestiya Akademii Nauk, Seriya Fizicheskaya, Vol 34, No 7, 1970, pp 1408-1415

Abstract: In an electron lens system with aberration the electons emerging from the object are not concentrated at a single point but are distributed over a circle whose center is connected with the image point. The distribution law for the intensity in this circle is a function of the radius and is determined by the electron-optical parameters of the image-forming system as well as the angular and energy distribution of the electrons forming the image. The authors find an expression for the intensity distribution in terms of the angular distribution of electron brightness emerging from the image of the point of the object and the average energy distribution of the electrons forming the image of the point. They also obtain an empirical formula for the resolution of the electron microscope image which takes into account the electron-optical parameters of the image-forming system and the dispersion characteristics of the electrons in the object.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

UDC: 632.95

STOYANOVICH, F. M., and IVANOVA, I. A., Institute of Organic Chemistry imeni ~~N. D.~~ Zelinskiy, Moscow, Academy of Sciences USSR

"Method of Producing Formamidomercaptals"

USSR Author's Certificate No 234399, filed 27/11/67, published 15/05/69, (Translated from Referativnyy Zhurnal Khimiya, No 3, Vol 2, 10 Feb 70, Abstract No 3 N721 P)

Translation: Defoliants of the general formula R_3NCHSY (I) (R = alkyl, R_2N may be a heterocyclic amine radical, for example piperidyl; Y = alkyl, aralkyl) are produced by the interaction of mercaptans with amidoacetals at 120°. 0.02 Mol $Me_2NCH(OMe)_2$ is heated in an absolute medium with 0.04 mol $C_6H_{13}SH$ at 100-120° until the MeOH which is formed ceases to be liberated, the remainder is distilled, producing I (R = Me, Y = C_6H_{13}), yield 81%, b.p. 130-1°/0.01, $n^{20}D$ 1.4905. Similarly, I are produced (shown are R_2N, Y, yield in %, b.p. in °C/mm, $n^{20}D$): Me_2N, C_7H_{15}, 82, 150/0.01, 1.4885; Me_2N, $PhCH_2$, 83 - (m.p. 23-5), -; $C_5H_{10}N$, Bu, 75, 132, 1.5112.

V. M. Sheheglova

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UDC 632.95

STOYANOVICH, F. M., KARPENKO, R. G., GRORUSHKINA, G. I., GOL'DFARB, YA. L.,
Institute of Organic Chemistry imeni N. D. Zelinskiy

"A Method of making Dibenzothiophene Derivatives"

USSR Author's Certificate No 349692, filed 13 Aug 70, published 6 Sep 72
(from RZh-Khimiya, No 10, May 73, Abstract No 10N621P by T. G. Chekareva)

Translation: Dibenzothiophene derivatives, which are of interest as herbicides and insecticides, and can also be used as intermediates in organic synthesis, are synthesized by cyclizing 2-tert-Bu-2'-diphenylsulfinic acids or their halides in the presence of acid catalysts at 0-200°C. Cyclization takes place with splitting of the tert-butyl group. Example: 1 g of 2-tert-Bu-2'-diphenylsulfinic acid (I) and 10 ml of $SOCl_2$ are boiled for 2 hours, the excess $SOCl_2$ is driven off in a vacuum, the residue is dissolved in 20 ml of $C_2H_4Cl_2$ and 0.5 g of anhydrous $AlCl_3$ is added at 0°C with agitation for 20 minutes at that temperature, which is then raised to about 20°C, and the resultant reaction mass is allowed to stand for about 12 hours. The mixture is then poured into water, the organic layer is removed, washed in a 5% solution of NaOH, in water, and dried. After eliminating the solvent, the

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USSR

STOYANOVICH, F. M., et al., USSR Author's Certificate No 349692, filed 13 Aug 70, published 6 Sep 72

result is 0.4 g of dibensothiophen-5-oxide, melting point 185-7°C (dilute alcohol). A similar process is used to synthesize dibenzothiophen-5-oxide-1-carboxylic acid, melting point 235-7°C (alcohol). 0.95 g of I is heated with boiling in 10 ml of Ac_2O. The anhydride is driven off in a vacuum, and the residue is treated with hexane. After evaporating the solvent, the residue is distilled in a vacuum at 150°C/0.1 mm; the sublimate is dissolved in 5 ml of hot alcohol, the solution is filtered, evaporated to 2 ml, and cooled. The residue contains dibenzothiophene with a metling point of 98.5-9.5°C. A similar procedure gives dibenzothiophene-1-carboxylic acid with a melting point of 176-7°C (hexane-benzene), methyl ether, melting point 68-9°C.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

Acc. Nr. AP0041534 Abstracting Service: CHEMICAL ABST. Ref. Code UR0366

89982d Reaction of arylsulfonyl compounds with an excess of organolithium reagent. III. Synthesis of 2,6-disubstituted alkylbenzenes. Karpenko, R. G.; Stoyanovich, F. M.; Raputo, S. P.; Gol'dfarb, Ya. D. (Inst. Org. Khim. im. Zelinskogo, Moscow, USSR). *Zh. Org. Khim.* 1970, 6(1), 112-18 (Russ). The reaction of 1,2,6-$BuLi_2C_6H_3$ (I) with $HCONMe_2$, S–MeI mixt., Me_2SO_4, PhCHO, or Ph_2CO gave resp.: 1,2,6-$Bu(OCH)_2C_6H_3$, 1,2,6-$Bu(MeS)_2C_6H_3$ (II), 1,2,6-$BuMe_2C_6H_3$, 1,2,6-$Bu[PhCH(OH)]_2C_6H_3$, or 1,2,6-$Bu[Ph_2C(OH)]_2C_6H_3$. The oxidn. of II with H_2O_2 in AcOH gave 1,2,6-$Bu(MeSO_2)_2C_6H_3$. The action of BuLi–MeLi mixt. on $PhSO_2$ Bu-*tert* gave PhMe, PhBu, 1,3,2-$(HO_2C)_2MeC_6H_3$ (on treatment with CO_2), 1,3,2-$(HO_2C)_2BuC_6H_3$ (on treatment with CO_2), I, 1,2,6-$MeLi_2C_6H_3$, and 2-*tert*-$BuSO_2C_6H_4CO_2H$ (on treatment with CO_2). The formation of all these products supports the transient existence of 1,2,6-*tert*-$(BuSO_2)Li_2C_6H_3$. CPJR

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19751402

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

Acc. Nr. AP0053771 Abstracting Service: CHEMICAL ABST.

Ref. Code UR0366

110949k Thiosulfonic acids. XXVII. Reaction of thiosulfonic acid esters with phenyl- and butyllithium. Boldyrev, B. G.; Stoyanovskaya, Ya. L. (L'vov. Politekh. Inst., Lvov, USSR). Zh. Obshchei Khim. 1970, 6(2), 332-4 (Russ). The reaction of RSO_2SR^1 with R^2Li in abs. Et_2O at reflux temp. gave RSO_2Li and R^1SR^2 (R, R^1, and R^2 given): *p*-$AcONHC_6H_4$, Et, Ph; Ph, *p*-ClC_6H_4, Ph; *p*-$AcNHC_6H_4$, Ph, Ph; *p*-ClC_6H_4, *p*-ClC_6H_4, Ph; Et, Et, Bu; Et, Bu, Bu; *p*-$AcNHC_6H_4$, Et, Bu; *p*-$AcNHC_6H_4$, Bu, Bu; *p*-$AcNHC_6H_4$, Bu, Bu; *m*-ClC_6H_4, *p*-ClC_6H_4, Bu.

CPJR

REEL/FRAME 19830834

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

UDC: 681.3.06:51

STOYANOVSKIY, V. A., CHERNENKO, A. A.

"Inverse Search"

Tr. 3 Zimn. shkoly po mat. programmir. i smezhn. vopr., 1970, vyp. 3 (Works of the Third Winter School on Mathematical Programming and Related Problems, 1970, No 3), Moscow, 1970, pp 601-604 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V819)

Translation: The following problem of inverse search is considered. To find in a patent system those patents whose content satisfies a given demand. The demand is presented in the form of a logical formula. The operands in this formula are the names of certain categories which give the content of the patent. An algorithm is presented for calculating the logical formula of the demand. V. Mikheyev.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

UDC: 681.3.06:51

STOYANOVSKIY, V. A., CHERNENKO, A. A.

"Inverse Search"

Tr. 3 Zimn. shkoly po mat. programmir. i smezhn. vopr., 1970, vyp. 3 (Works of the Third Winter School on Mathematical Programming and Related Problems, 1970, No 3), Moscow, 1970, pp 601-604 (from RZh-Matematika, No 11, Nov 71, Abstract No 11V819)

Translation: The following problem of inverse search is considered: To find in a system of patents those patents whose content satisfies a given request. The request is stated as a logical formula where the operands are the names of certain classes which tag the content of the patent. Such classes are called descriptors. An algorithm is given for calculating the logic formula of a request. V. Mikheyev.

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USSR

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STOYNOVA-PENKOVA NEDKA

"Three-Index Transport Problem"

Tr. Vissh. ikon. in-t -- Sofiya (Works of the Higher Economics Institute of Sofia), 1970 (1971), No 1, pp 1-20 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V312)

Translation: The conditions of optimalness and calculation rules by the simplex method with direct solution of the system of equations for determining the potentials and expansion coefficients in the base vectors of the vector introduced into the base are presented for the planar three-index transport problem. These two systems are described, and the number of their linearly independent equations is indicated without any recommendations with respect to the method of solving them.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

UDC 546.45:538.311.33

PAPIROV, I. I., STOYEV, P. I., and TARANENKO, I. A., Physicotechnical Institute, Academy of Sciences Ukr SSR

"Kinetics of Electrical Resistance Change in Deformed Beryllium During Annealing"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 6, Jun 73, pp 1241-1247

Abstract: This work is a continuation of a previously published work (PAPIROV, I. I., et al, Fizika Metallov i Metallovedeniye, Vol 34, p 1022, 1972) and pursues the goal of studying the effect of deformation degree of beryllium during rolling on the nature of its electrical resistance recovery. Beryllium ingots of 99.9% purity were rolled at 400°C with 30, 70, and 90% degrees of reduction. Samples measuring 0.4 x 0.4 x 50 mm were cut along the rolling axis by the electric spark method and electrical resistance was measured by the compensation method with an R-348 potentiometer. It was established that the electrical resistance recovery kinetics for beryllium is controlled by a thermally active process of dislocation annihilation as the dislocations moved in a field of peak internal stresses. A proposed equation for recovery of electrical resistance makes it possible to determine the average peak values of the athermal

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

PAPIROV, I. I., et al., Fizika Metallov i Metallovedeniye, Vol 35, No 6, Jun 73, pp 1241-1247

component of stresses for a known activation volume. Observed anomalies in electrical resistance recovery were associated with the complex and nonuniform substructure of polycrystalline beryllium after deformation. 5 figures, 1 table, 15 bibliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

UDC 621.791.756:621.379.4

SHVARTSEV, A. YA, STOYKO, V. P., and SAMOYLENKO, L. V., Donets Polytechnical Institute

"Electric Slag Welding and Casting with a Constant Slag Bath"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 70, pp 60-63

Abstract: The rapid and widespread development of electric slag welding and casting has been hindered by certain defects in the present techniques, particularly the need for bringing in the slag bath. This has made the process wasteful, especially when it is used to cast small objects in mass production. These defects have been avoided in a process developed by the Donets Polytechnical Institute, which does not require that the bath be repeatedly brought in after a casting has been made. The process can therefore be termed casting with a constant slag bath. The chemical composition of this bath varies since there is a metallurgical reaction among the metal, the slag, and the gases inside the bath as well as on the free surface of the slag. Also fresh flux must be introduced into the slag bath in the mass production of the objects, and this too changes the chemical composition. Despite this disadvantage, the constant slag bath process deserves attention.

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UNCLASSIFIED

TITLE--THE GROWING OF CRYSTALS OF A PRESET FORM -U- PROCESSING DATE--30OCT70

AUTHOR-(03)-CHERNEVSKAYA, E.G., SIMUN, YE.A., STOZHAROV, A.I.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, OPTIKO-MEKHANICHESKAYA PROMYSHLENNOST', NO 2, FEB 70, PP 42-44

DATE PUBLISHED----FEB70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CRYSTAL GROWING, CRYSTAL STRUCTURE, NUCLEATION, SINGLE CRYSTAL GROWTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1579

STEP NO--UR/0237/70/000/002/0042/0044

CIRC ACCESSION NO--AP0118562

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

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CIRC ACCESSION NO--AP0118562 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT THE CRYSTALLIZATION OF A MELT IN THE FORM OF A SINGLE CRYSTAL IS POSSIBLE WITHOUT THE CREATION OF AN INOCULATION CENTER AND THAT THE GROWTH OF A SINGLE CRYSTAL MAY PROCEED FROM THE SURFACE OF ANY SPATIAL CONFIGURATION (PLANE, CONCAVE, CONVEX, ETC.). THIS MAKES POSSIBLE A DIRECT GROWING OF CRYSTALS IN THE FORM OF DISKS, SQUARES, LENSES, PRISMS, AND OTHER SIMPLE AND COMPLEX FORMS OF VARIOUS SIZES.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

STRADOMSKIY, M.V.

Heat Transfer

JPRS 54515

18 November 1971

UDC 536.24:532.546

SOME FEATURES OF HEAT TRANSFER IN POROUS MEDIA

[Article by Ye. A. Maksimov and M. V. Stradomskiy (Institute of Engineering Thermophysics, Academy of Sciences Ukrainian SSR, Kiev); Minsk, Inzhenerno-fizicheskiy Zhurnal, Russian, Vol 20, No 4, signed to press 14 April 1970, pp 588-591]

The analysis of differential equations for the temperature of a coolant flowing in a heated wall and the wall temperature shows that the dependence of heat transfer inside the pores with constant wall geometry may be described by the relationship $Nu = f(Pe)$. The experimental study carried out when porous material was cooled with air, nitrogen, liquid ethyl alcohol and transformer oil with no phase transitions confirms satisfactorily the results obtained from the analysis of differential equations.

For calculation of heat transfer between a porous wall and a coolant inside the pores, it is necessary to know the magnitudes of the heat-transfer coefficients inside the pores and their dependence on the conditions under which the process occurs.

In the literature there are a number of works (references 1-5 and others) in which the processes of heat transfer between a porous material and the air blowing through it are investigated. Together with this, in cooling systems other coolants with Prandtl numbers different from one are used. There are no works in the literature on the experimental investigation of the quantitative relationships of internal heat transfer in porous metals during their cooling by fluids having Prandtl numbers differing from one.

In reference [6], on the basis of an analysis of the solution of a differential equation of the temperature state of a porous wall and a coolant it was demonstrated that the intensity of heat transfer must be determined, other things being equal, by the Peclet number. No experimental confirmation of this conclusion was made.

[I - USSR - G]

Heat Transfer

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

UDC 543.55:543.253

VEGNERE, V. YA., STRADYN', YA. P., OZOL, YA. YA., and AREN, A. K.,
Riga Polytechnical Institute, Riga, Latvian Sovnarkhoz

"Characteristic Qualities of the Wave of Electrochemical Splitting of the C-N Bond in 2-Alkylamino-2-alkylindandiones-1,3"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, Seriya Khimicheskaya, No 2, 1970, pp 164-169

Abstract: The goal of this study was the refinement of the polarographic reduction of 2-aminoindandiones-1,3 (I), and attention was directed particularly to the characterization of the wave obtained on electrochemical splitting of the C-N bond. The properties of the first wave of polarographic reduction were studied. It was determined that (I) type of compounds give a two electron polarographic wave of the $C-N^+$ bond splitting in aqueous alcohol solutions at pH range 2-12; the height of this wave was limited by the rate of diffusion of depolarizator molecules in the entire pH range studied. In strongly alkaline medium the wave of the $C-N^+$ bond splitting disappears because of the

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USSR

VEGNERE, V. YA, et al, Izvestiya Akademii Nauk Latviyskoy SSR, Seriya Khimicheskaya, No 2, 1970, pp 164-169

chemical decomposition of the molecules of aminoindandiones in solution. The $C-N^+$ bond splitting wave is generated by salts as well as by free bases. When bases enter into the electrode reactions their molecules are first protonated on the electrode surface and the corresponding waves are of quasidiffusive character.

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172 030

UNCLASSIFIED

TITLE--ON MORPHOLOGICAL CHANGES BETWEEN CENTRAL STRUCTURES OF THE AUDITORY ANALYZER IN PROLONGED INTENSIVE EFFECT OF NOISE --U-

PROCESSING DATE--13NOV70

AUTHOR-(03)-STRAKHOV, A.B., KORSHUNOVA, V.I., ANTAKOVA, N.V.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49, NR 6, PP 95-97

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WHITE NOISE, AUDITORY SYSTEM, NEURON, MORPHOLOGY, CELL PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0570

STEP NO--UR/0219/70/049/006/0095/0097

CIRC ACCESSION NO--AP0131193

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4"

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2/2 030 UNCLASSIFIED

CIRC ACCESSION NO--AP0131193 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN EXPERIMENTAL CONDITIONS THE AUTHORS STUDIED THE EFFECT OF PROLONGED NOISE ON THE DEVELOPMENT OF MORPHOLOGICAL CHANGES IN NEURONS OF DIFFERENT REGIONS OF THE AUDITORY ANALYZER IN ALBINO RATS. MANY DAY EFFECT OF NOISE LEADS TO THE DEVELOPMENT OF CHANGES IN THE NISSL'S SUBSTANCE, NUCLEI AND NUCLEOLI OF NERVE CELLS. IN EXPOSURES LASTING FROM 1 TO 7 DAYS THE MOST SIGNIFICANT ALTERATIONS WERE REVEALED IN THE ACOUSTIC REGIONS OF THE CORTEX OF GREAT HEMISPHERES. IN LARGE TERMS OF THE EFFECT (15-28 DAYS) CORTICAL CHANGES GRADUALLY DIMINISHED, WHEREAS IN THE SUBCORTICAL FORMATIONS OF THE BRAIN THEY GRADUALLY INTENSIFIED. IT IS ASSUMED THAT PROTRACTED EFFECT OF INTENSIVE NOISE LEADS TO BLOCK ON THE SUBCORTICAL LEVEL OF AFFERENT IMPULSATION THIS MAKING IT POSSIBLE TO CARRY OUT RESTORATIVE PROCESSES IN THE CORTICAL LAYER OF THE AUDITORY ANALYZER.

FACILITY: GORKY MEDICAL INSTITUTE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR S

UDC 616.282.7-02:613.164]-091

STRAKHOV, A. B., KORSHUNOVA, V. I., and ANTAKOVA, N. V., Chair of Normal Physiology, Gor'kiy Medical Institute imeni S. M. Kirov

"Morphological Changes in the Central Structures of the Auditory Analyse After Prolonged Exposure to Noise"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 4, 1970, pp 95-97

Abstract: Several groups of rats were continuously exposed to noise (1500 to 3000 Hz) for periods of up to 28 days. Significant changes were noted in the Nissl bodies (different forms of chromatolysis - perinuclear, peripheral, total), nuclei, (peripheral location, degeneration, pyknosis), and nucleoli two or three present in many cells. The intensity of the changes varied with the part of the brain and the duration of exposure. After 1 to 7 days they were most pronounced in the acoustic cortex, less so in the stem structures. After 15 to 28 days, the cortical changes were more diffuse, but in the subcortical formations - corpora quadrigemina, corpus geniculatum mediale, and area vestibularis - the changes gradually intensified.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

STRAKHOV, A.P.

Medicine

GLORIA

SO: JPRS 54194
6 OCT 1971

UDC: 614.25:613.68

EXPERIENCE OF A SHIP'S PHYSICIAN DURING EXTENDED VOYAGES ON MERCHANT MARINE SHIPS

[Article by A.P. Strakhov, Candidate of Medical Sciences, North-East Maritime Health Department, Leningrad; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 8, 1971, submitted 9 March 1971, pp 47-49]

The activities of a ship's physician who has a clinical specialty with a certain maritime tendency should be viewed as the work of a shop physician in a floating health station. But under these specific conditions, he is also an organizer and representative of the hygiene service. The size and equipment of medical units on modern ships make it possible for him to administer prophylaxis and render skilled medical care for various diseases.

The log is a mandatory form for keeping a record of ambulatory patients on ships where medical workers are available, and every visit for medical care is recorded in it. It would also be useful to start keeping ambulatory cards on which entries would be made of all cases of both primary and secondary visits, a brief case history, therapeutic procedures, and findings. When a seaman is discharged from a ship his outpatient card along with the medical booklet and international certificate should be forwarded to his new destination, and in the case a crew member is dismissed from the USSR Ministry of the Maritime Fleet, it should be forwarded to the archives of his port of registry with all other medical documentation. The adoption of ambulatory cards on ships will disclose the dynamic condition of a seaman, it will help the next medical agency to administer prophylactic measures promptly, it will pick up individuals requiring speedy treatment and, finally, it will alleviate considerably the work of the medical commission when it issues recertification of fitness for sea duty.

In view of the polyclinic type of activities of ship's physicians including a number of preventive and anti-epidemic measures, the maritime medical service personnel should periodically spend some time in a hospital or polyclinic working in their specialty and remain on board ship for another specified time (about 3 years). The specific nature of maritime service also requires constant updating of knowledge dealing with the fundamentals of epidemiology. Such a procedure will increase the competence of ship's physicians and would also create a constant reserve of specialists for the maritime service.

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Explosives and Explosions

USSR

UDC 541.124/.128

STRAKHOV, B. V. LEBEDEV, V. P. (DECEASED), and KOBOZEV, N. I., Moscow State University imeni M. V. Lomonosov, Moscow, Ministry of Higher and Secondary Specialized Education RSFSR

"Explosive Oxidation of Nitrous Oxide in Mixtures with Ozone"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 7, Jul 70, pp 1664-1669

Abstract: The formation of NO upon explosion of $N_2O + O_3$ mixtures by means of an electric spark was studied. At an initial pressure of 200 mm Hg, the maximum yield of NO (14.9 vol %) was obtained at 40 vol % O_3. For mixtures with a constant O_3 content of 40 vol %, the maximum yield of NO in the 0-900 mm Hg pressure range was at 200 mm Hg. Partial replacement of N_2O with N_2 lowered the yield of NO. Calculations on the assumption that the reaction proceeded by the mechanism $N_2 + O_2 \rightarrow 2NO$ after decomposition of N_2O led to results which did not agree with data on the reaction equilibrium obtained in the experiments. The experimental results could be explained satisfactorily with respect to development of an NO yield maximum and the position of this maximum by assuming the mechanism $N_2) + 1/2\ O_2 \rightleftharpoons 2\ NO$; $2NO \rightarrow N_2 + O_2$.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

Acc. Nr. AP0101491 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code UR 0498

112819s Use of naphthenates in the leather industry. Strakhov, I. P.; Levenko, P. I.; Shifrin, I. G. (USSR). *Kozh.-Obuv. Prom.* 1970, 12(1), 23-6 (Russ). In the prepn. of Russian leather, the usual fatting compd., 20% tanning paste and 80% synthetic fat, was replaced by 20% tanning paste, 40% synthetic fat, 20% Al naphthenate, and 20% Zr naphthenate. In chrome-tanned shoe-upper leather, the usual filler, latex MX-30 + syntan SPS, was replaced by latex MX-30 + Al naphthenate, or syntan SPS + Al naphthenate. In all cases, improvement was obtained in wearability, stretching limit, elongation, redn. of water permeability, and wettability by water. These improvements were still further increased by irradn. of the finished leather with γ-rays from ^{60}Co at a dosage of $3-5 \times 10^5$ rads.

A. S. Levesley

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19851401

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

UDC (537.311+621.317.412):549.31:546.19

NOVOSELOVA, N. A., BAYDAKOV, L. A., STRAKHOV, L. P.

"Study of the Magnetic Susceptibility of Vitreous Arsenic Sulfides"

Leningrad, Vestnik Leningradskogo universiteta, No 10, Fizika i khimiya, No 2, May 71, pp 118-124

Abstract: Earlier research on the magnetic susceptibility of vitreous alloys AsS_x ($1.25 \leq x \leq 18$) is reviewed. A table containing susceptibility measurements of arsenic sulfides with As contents ranging from 9 to 44 at.% is presented. It is shown that all compositions of the vitreous arsenic-sulfur system containing elemental sulfur which was heat treated by various techniques are diamagnetic materials and that their magnetic susceptibility is independent of the field intensity. The nonadditive relationship between the magnetic susceptibility of the glasses and their composition is attributed to both structural and chemical transformations in them. Use was made of the Dorfman method to separate the experimental susceptibility values χ_e into Langevian diamagnetic χ_a and V. V. paramagnetic components χ_p. The extremely low value of Van Vleck paramagnetism conforms to the As_2S_5 compound and is

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USSR

NOVOSELOVA, N. A., et al, Vestnik Leningradskogo universiteta, No 10, Fizika i khimiya, No 2, May 71, pp 118-124.

governed by the tetrahedral configuration of the structural units of $AsS_{5/2}$ with equivalent sp^3 hybridized As-S chemical bonds. The glass with the stoichiometric composition of As_2S_3 appears to have maximum diamagnetism. The chemical and structural transformations in the glasses of the As-S system are discussed and the existence of an eutectic phase of As_2S_5 and sulfur in the 13 at.% As range is suggested.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

1/2 014 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--INDIRECT INTERNUCLEAR INTERACTION AND NMR CHEMICAL SHIFT IN ALPHA AND BETA THALLIUM IODIDE -U-

AUTHOR-(03)-BAYDAKOV, L.A., NOVOSELOV, S.K., STRAKHOV, L.P.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1173-5

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--IODIDE, NUCLEAR MAGNETIC RESONANCE, CHEMICAL BONDING, THALLIUM COMPOUND, CHEMICAL BONDING, MOLECULAR INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0073 STEP NO--UR/0181/70/012/004/1173/1175

CIRC ACCESSION NO--AP0135770

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

272 014

UNCLASSIFIED

CIRC ACCESSION NO--AP0135770 PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NMR WAS INVESTIGATED OF PRIME205 TL AND PRIME203 TL IN LOW TEMP. AND HIGH TEMP. MODIFICATIONS OF TLI WITH NATURAL CONTENT OF THE ISOTOPES OF TL. CHANGE IN THE CHEM. SHIFT WAS MEASURED DURING THE TRANSITION. THE 2ND MOMENTS OF THE PRIME205 TL AND PRIME203 TL LINES IN ALPHA AND BETA TLI ARE MUCH LARGER THAN CALCD. WITH ONLY THE DIRECT DIPOLE DIPOLE INTERACTION. IN ALPHA TLI, THE 2ND MOMENT OF THE PRIME203 TL LINE IS LARGER THAN THAT OF PRIME205 TL WHICH INDICATES A CONSIDERABLE HETEROPOLAR BONDING BETWEEN THE TL ATOMS. THE 2ND MOMENTS OF THE LINES OF TL ISOTOPES IN BETA TLI ARE EQUAL WITHIN EXPTL. ERROR. THIS INDICATES A WEAK HETEROPOLAR BONDING TL,TL IN THIS MODIFICATION, AND A LARGE LINEWIDTH AND LARGE NEG. CHEM. SHIFTS A CONSIDERABLE COVALENT BOND IN TL IN THE YELLOW AS WELL AS IN THE RED MODIFICATIONS. FACILITY: LENINGRAD. GOS. UNIV. IM. ZHDANOVA, LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR UDC: 621.762:669.018.25(088.8)

MOLOKHOV, I. F., STRAKHOV, N. S., CHEPURKIN, Yu. N., KARINKIN, P. M., TUNEV, I. G.

"Method of Manufacture of Metal Ceramic Products"

USSR Author's Certificate Number 360151, Filed 24/02/71, Published 15/01/73 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G440P, by S. Krivonosova).

Translation: In order to increase the wear resistance (by 1.5-6 times) of hard alloy products, they are annealed after sintering in a medium of quartz sand at 800-900°, then normalized at 900-950°. The method has been tested under production conditions, provides for an increase in wear resistance of hard alloy tools working under conditions of vibration during cutting of channels and drilling of ZhSBK alloy.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

Receivers and Transmitters

UDC: 621.391.22:621.378.325

AFINOGENOV, V. M., AYTKHOZHIN, S. A., STRAKHOV, V. A., TELEGIN, A. A., and TRIFONOV, V. I.

"Highly Sensitive Submillimeter Receiver Using n-GaAs"

Gor'kiy, Izvestiya VUZ--Radiofizika, No 10, 1972, pp 1572-1579

Abstract: There is, at the present time, a demand for receivers in the short wave part of the submillimeter band with minimum inertia. Receivers using pure gallium arsenide with electron conductivity are especially promising in view of the qualities they possess, particularly the photoconductive effects of n-type GaAs. These characteristics of GaAs are investigated in the present paper for the purpose of designing this type of receiver. Subjects of the investigation were monocrystalline epitaxial films grown on substrates of semi-insulating n-GaAs, with arsenic and gallium chlorides used as the initial materials. A table of the parameters of some of the films investigated is given and other characteristics explored. The block diagram of a receiver using the epitaxial n-GaAs is proposed and analyzed. The authors thank A. N. Vystavkin, Yu. V. Gulyayev, V. F. Dvoryankin, V. V. Migulin, and A. V. Sokolov

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR UDC: 681.327

KITOVICH, V. V., STRAKHOV, V. G., BORODKIN, V. M., VOSTRIKOVA, Z. P., SAKHAROV, V. T.

"A Memory Device Using Magnetic Thin Films"

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 114--117 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 73, abstract No 1B410 by V. R.)

Translation: The paper describes an immediate-access memory unit using thin films with a capacity of 1024 26-digit numbers with an access time of 0.7 μs and a sampling time of 0.2 μs. The device contains: a magnetic film module, an address decoding module, a readout-record amplifier module, and a localized control module. The memory module for data storage uses four magnetic film elements per symbol.

The magnetic film module consists of 16 aluminum matrices, each of which contains 140 x 66 Permalloy "spots" measuring 0.3 x 0.5 mm. Provision is made in the module for redundant information capacity: there are 96

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AFINOGENOV, V. M., et al, Izvestiya VUZ--Radiotekhnika, No 10, 1972, pp 1572-1579

for their devotion to the work, V. N. Listvin for his useful comments, and N. G. Yaremenko for helping investigate the film parameters.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

KITOVICH, V. V. et al., Magnit. elementy avtomatiki i vychisl. tekhn. XIV soveshch., 1972. Ref. dokl., 1972, pp 114-117

reserve numbers and seven reserve digital places. The electrical parameters of the memory unit: readout current 250 ma, discharge current 60 ma, output signal 0.5 mv or more with a duration of 50 ns. Structurally the memory unit is made in the form of a block measuring 390 x 290 x 194 mm with a weight of 12 kg. Power consumption is 9 w. Bibliography of one title.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

Acc. Nr. AP0049977 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code UR 0131

82460y **Effect of a gaseous medium on the interaction of zirconium dioxide with cerium dioxide and properties of the roasted material.** Klyucharov, Ya. V.; Strakhov, Vs. I. (Leningrad. Tekhnol. Inst. im. Lensoveta, Leningrad, USSR). *Ogneupory* 1970, 35(1), 40-6 (Russ). The effect of solid phase reactions between ZrO_2 and Ce_2O_3 on the properties of the products of firing and of slow heating and cooling of the ZrO_2-Ce_2O_3 compns. in the range 20–1300° in an oxidizing medium on changes of their phase compn. was studied. Samples 10 mm diam. and 10–15 mm high of the compns. contg. 70–90% ZrO_2 and 10–30% CeO_2 and contg. 50–100% tetragonal solid ZrO_2 80-CeO_2 20 mole % soln. synthesized at 1750° in an oxidizing medium and 0–50% monoclinic ZrO_2, were molded under pressure 500 kg/cm² with poly(vinyl alc.) as a binder and fired in vacuo (10^{-5}–10^{-4} torr) or in a reducing medium at 1750 and 2000° for 2 and 1 hr, resp. The shrinkage, bulk d. and porosity, and compressive strength of the samples was detd. CeO_2 in the compns. was reduced to Ce_2O_3 which formed solid solns. with ZrO_2, and partly to Ce. An isometric solid soln. with a crystal lattice of the fluorite type was obtained from the compns. contg. 5.55–16.65 mole % Ce_2O_3 and ZrO_2 at 1750–2000°, which after quick cooling to room temp. maintained its structure. After slow cooling the soln. decompd. to the $Ce_2Zr_2O_7$-ZrO_2 solid soln. of the pyrochlore type, monoclinic ZrO_2-Ce_2O_3 solid soln., and Ce. Heating of the ZrO_2-Ce_2O_3 solid solns. in the air led to their oxidn.

W. J. Skorski

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR UDC 621.396.6-181.5

BYLOV, K. V., GLAZKOV, YU. B., OGANEZOV, R. KH., STOVBA, V. I., SOKOLOV, V. P., STRAKHOV, V. S.

"Utilization of 2T603 Crystals to Create Medium Power Film Hybrid Circuits"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronic Engineering. Scientific and Technical Collection. Semiconductor Devices), 1970, vyp. 6 (56), pp 118-120 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10V189)

Translation: The structural design of a caseless version of a medium power semiconductor triode based on the series semiconductor triode type 2T603 of npn structure is described. Results are presented from measuring the thermal resistance when mounting the semiconductor triode on the backing of the microcircuit by two methods -- soldering (with indirect pulse heating) and microwelding. It is demonstrated that the most effective means of mounting the semiconductor triode on the backing is solder. The magnitude of the thermal resistance drops significantly on increasing the thermal conductivity of the backing material. There are 2 illustrations and 1 table.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

Acc. Nr: AP0049769 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR 0191

101292p Effect of synthesis conditions on the molecular weight of polyurethane ureas. Strakhov, V. V.; Kafengauz, A. P.; Pchel'nikova, G. V. (USSR). *Plast. Massy* 1970, (1), 8-9 (Russ). The title polymers (I) were prepd. in CH_2Cl_2-H_2O by a procedure of V. V. Strakhov (1969). The isocyanate prepolymers were prepd. from polypropylene glycol of mol. wt. 1000 and 2,4-tolylene diisocyanate at a 2:1 NCO-OH molar ratio. The yield and the mol. wt. of I increased with agitation. Thus, when the mixt. was stirred for 5 and 30 sec, the yield and sp. viscosity increased from 79.5% and 0.78 to 84.0% and 1.43, resp. The mol. wt. of I was also affected by the order of mixing of the reagents. The effects of a change in the pH of the aq. phase on the mol. wt. of I were less significant. CKJR

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR UDC 533.99

KARCHEVSKIY, A.I., STRAKHOV, YU.I.

"Thresholds Of Beam Instability Of Current In Direct Discharge"

Pis'ma v ZhETF (Letters To The Journal Of Experimental And Theoretical Physics), 1971, 13, No 11, pp 595-599 (from RZh--Elektronika i yeye primeneniye, No 11, Nov 1971, Abstract No 11A41)

Translation: Excitation of the beam instability of current in a forward discharge was investigated on an ACPA [expansion unknown] unit. Parameters of discharge circuit [kontur]: Current to 30 ka, period 1.6 microsecond, capacitance 0.2 microfarad, cross-section of current channel 80 cm^2, initial density of plasma $1 \cdot 10^{12}$--$3 \cdot 10^{12}$ cm^{-3}. The discharge was excited in a homogeneous field with the spacing between electrodes 5 and 28 cm. The electron beam from the discharge zone was lead out via a meshed anode and the propagation of the beam lengthwise of the magnetic field in the equipotential spaced filled with plasma was investigated. The density of the beam current and the energy of the electrons were measured at a distance of 20 cm from the meshed anode along the braking Roentgen radiation from the target. Parameters of the electron beam: total current to 25 ka, energy of electrons to 30 kv, duration of beam existence amounts to 0.2--1.5 microsecond, area of cross section $\sim$100 cm^2. The results of the work show that in a direct discharge during a change of the initial

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

KARCHEVSKIY, A. I., STRAKHOV, YU. I., Pis'ma v ZhETF (Letters To The Journal Of Experimental And Theoretical Physics), 1971, 13, No 11, pp 595-599 (from RZh--Elektronika i yeye primeneniye, No 11, Nov 1971, Abstract No 11A41)

density of the plasma of $1 \cdot 10^{12}$ to $2.5 \cdot 10^{13}$ cm^{-3} an instability in the drift speed of the electrons close to thermal is excited. The result of the development of this instability is a collapse [sryv] of the discharge current and a transformation into a regime where the total discharge current is transmitted by electrons with an energy which corresponds well with the effective drop of the voltage at the discharge gap. A considerable portion of the energy of the discharge circuit (20--80 percent) is spent during the short time interval (0.2--1.5 microsecond) at the creation of a power pulse beam of ions. The instability threshold agrees with computed data in the literature. 6 ref.
R. Sh.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

1/3 009 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ASYMMETRICALLY SUBSTITUTED MYO INOSITOL DERIVATIES. I. SEPARATION OF A RACEMIC MIXTURE OF 1,4,5,6,TETRA,O,BENZYLMYO, INOSITOL. COMPLETE

AUTHOR-(05)-KLYASHCHITSKIY, B.A., STRAKHOVA, G.D., SHVETS, V.I., SOKOLOV, S.D., PREOBRAZHENSKIY, N.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(1), 236-42

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, BROMINATED ORGANIC COMPOUND, ESTER, CHEMICAL SEPERATION, CARBOHYDRATE, ISOMER/(U)AMBERLITE IRA400 MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1737 STEP NO--UR/0079/70/040/001/0236/0242

CIRC ACCESSION NO--AP0112726

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

2/3 009 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112726

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SYRUPY TETRA-O-ACETYL-BETA-D-MANNOPYRANOSYL BROMIDE (14 G) KEPT WITH 9.1 ML 2,6,LUTIDINE IN ETOH 3 HR GAVE AFTER EVAPN. AND AN AQ. TREATMENT 67.5PERCENT 3,4,6,TRI-O-ACETYL 1,2,O-(ETHYL ORTHOACETYL)-BETA-D-MANNOPYRANOSE, M. 102.5-4DEGREES, (ALPHA) PRIME20 SUBD MINUS 15DEGREES, WHICH (5.95 G) WITH 4.6 G 1,4,5,6,TETRA-O-BENZYLMYO INOSITOL REFLEXED IN (CH SUB2 CL)SUB2 IN THE PRESENCE OF P-MEC SUB4 H SUB4 SO SUB3 H 8.5 HR WITH REMOVAL AND REPLENISHMENT OF THE DRIED SOLVENT, GAVE 18.6PERCENT 3,4,6,TRI-O-ACETYL,1,2,O,(3,4,5,6,TETRA-O-BENZYL-SN MYO-INOSITYL,1,ORTHOACETYL)-BETA-D-MANNOPYRANOSE, M. 155.5-6DEGREES, (ALPHA) PRIME20 SUBD 9.8DEGREES, PPTD. BY ADDN. OF ET SUB2 O; THE FILTRATE PURIFIED ON AL SUB2 O SUB3 GAVE 9.68PERCENT 3,4,6,TRI-O-ACETYL,1,2,O-(1,4,5,6,TETRA-O-BENZYL-SN MYO-INOSIT,3,YL ORTHOACETYL)-BETA-D-MANOPYRANOSE (I), M. 135-7DEGREES, (ALPHA) PRIME20 SUBD 0.54DEGREES. I IN I HR AT 20DEGREES WITH 0.1N H SUB2 SO SUB4 IN 90PERCENT AQ. ME SUB2 CO GAVE AFTER PASSAGE OVER AMBERLITE IRA-400 (OH FORM) 81.2PERCENT 1,4,5,6,TETRA-O-BENZYL-SN-MYO-INOSITOL, M. 140.2-2.1DEGREES, (ALPHA) PRIME20 SUBD 25DEGREES. SIMILARLY WAS OBTAINED 86PERCENT 3,4,5,6,TETRA-O-BENZYL-SN-MYO INOSITOL, M. 141-3DEGREES, (ALPHA) PRIME20 SUBD MINUS 24.3DEGREES. THIS HEATED 2 HR AT 100DEGREES WITH MEI AND POWD. KOH UNDER C SUB6 H SUB6 GAVE 25PERCENT L-O-METHYL,3,4,5,6, TETRA-O-BENZYL-SN-MYO-INOSITOL, M. 1.5-16DEGREES, (ALPHA) PRIME20 SUB3 MINUS 1.5DEGREES, WHILE THE MOTHER LIQUOR GAVE 5.8PERCENT 2,O-METHYL ANALOG, M. 137-8DEGREES, (ALPHA) PRIME20 SUBD

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USSR

BAYER, V. N., KATKOV, V. M., STRAKHOVENKO, V. M.

"Higher-Order Effects in the External Field: Generation of Pairs by Particles"

Moscow, Yadernaya Fizika, Vol 14, No 5, 1971, pp 1020-1026

Abstract: Because the analysis of higher orders of electromagnetic interaction is of interest in problems of the motion of high-energy particles through an external magnetic field, this paper uses such an analysis in the example of the process of pair generation by a particle of this type. The probability of the occurrence of this process is computed by an operator method worked out by the first two of the authors named above and published in earlier articles (Zhurnal eksperimental'noy i teoreticheskoy fiziki, 53, 1967, p 1478, ZhETF, 55, 1968, p 1542), and a formula is obtained for the probability of pair generation by a photon per unit time. The asymptotic values of the probability are examined using the method of equivalent photons. Concluding, the authors note that the results of their work permit solving

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USSR

BAYER, V. N. et al, Yadernaya Fizika, Vol 14, No 5, 1971, pp 1020-1026

the problem of degradation of the energy of high-energy particles entering a strong external field. They express their gratitude to V. S. Fadin for his useful comments.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ELECTRON SPIN EQUATION IN AN EXTERNAL FIELD INVOLVING RADIATIVE EFFECTS -U-

AUTHOR-(03)-BAIER, V.N., KATKOV, V.M., STRAKHOVENKO, V.M.

S

COUNTRY OF INFO--USSR

SOURCE--PHYS. LETTERS (NETHERLANDS), VOL. 31A, NO. 4, P. 198-9, 23 FEB. 1970

DATE PUBLISHED--23FEB70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON SPIN, ELECTRON POLARIZATION, TRANSITION RADIATION, ELECTROMAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0428 STEP NO--NE/0000/70/000/004/0198/0199

CIRC ACCESSION NO--AP0111621

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 017

CIRC ACCESSION NO--AP0111621

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS CONSIDER THE KINETICS OF RADIATIVE POLARIZATION. FACILITY: INST. NUCLEAR PHYSICS, NOVOSIBIRSK, USSR.

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USSR

UDC 547.779.+547.78

AKHREM, A. A., MOISEYENKOV, A. M., ANDABURSKAYA, M. B., and STRAKOV, A. Ya., Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences USSR, and Riga Polytechnic Institute, Riga

"1-Amino-3,6,6-trimethyl-4-oxo-4,5,6,7-tetrahydroindazole"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, Seriya Khimicheskaya, No 6, 1970, pp 740-741

Abstract: 1-Amino-3,6,6-trimethyl-4-oxo-4,5,6,7-tetrahydroindazole (I) with m. pt. 130-1° was prepared by boiling 3,6,6-trimethyl-4-oxo-4,5,6,7-tetrahydrobenz(d-1,2)isoxazole with hydrazine hydrate and pyridine. By boiling I in acetic anhydride, 1-N-acetylamino-3,6,6-trimethyl-4-oxo-4,5,6,7-tetrahydroindazole (m. pt. 188-9°) was obtained. On boiling of equimolar amounts of I and benzaldehyde in EtOH, formation of 1-N-benzalamino-3,6,6-trimethyl--4-oxo-4,5,6,7-tetrahydroindazole (m. pt. 101-3°) took place. Derivatives of 4,5,6,7-tetrahydroindazole were found to exhibit a wide range of physiological activity; 1-amino derivatives of this compound may be of interest from this standpoint.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 007

TITLE--2,PHENYL,4,METHYL,5,OXO,5,6,7,8,TETRAHYDROQUINAZOLINES -U-

AUTHOR-(02)-BRUTANE, D., STRAKOV, A.YA.

S

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (2), 202-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HETEROCYCLIC NITROGEN COMPOUND, CYCLOHEXANE, AROMATIC KETONE, OXIME, HYDRAZONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605013/C04 STEP NO--UR/0464/70/000/002/0202/0205

CIRC ACCESSION NO--AP0140369

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

2/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140369

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 2,ACETYLCYCLOHEXANE,1,3,DIONE (IA), AND ITS 5,5,DI,ME (IB), 5,PH (IC) AND 5,ALPHA,FURYL (ID) DERIVS. REACT WITH BENZAMIDINE HCL (II) TO GIVE THE CORRESPONDING 2,PHENYL,4,METHYL,5,OXO,5,6,7,8,TETRAHYDROQUINAZOLINES (III), ALSO FORMED, IN FAR GREATER YIELDS, FROM 2,(ALPHA,PHENYLAMINO)ETHYLIDENECYCLOHEXANE,1,3,DIONE AND ITS DERIVS., IN TURN PREPD. BY CONDENSATION OF IA D WITH PHNH SUB2. III FORM SALTS, OXIMES, AND P NITROPHENYLHYDRAZONES. CAREFUL REACTION OF IB WITH II YIELDS THE EXPECTED 2,(ALPHA,(N,BENZAMIDINYL)ETHYLIDENE(,5,5,DIMETHYLCYCLOHEXANE,1,3,DIONE, CYCLIZATION OF WHICH GAVE III (R PRIME1 EQUALS R PRIME2 EQUALS ME). IA D WITH FORMAMIDINE OR ACONH SUB4, AND IA AND IC WITH ACETAMIDINE (IV) REACT TO GIVE DERIVS. OF 2,(ALPHA,AMINOEHTYLIDENE)CYCLOHEXANE,1,3,DIONE. ID FAILED TO REACT WITH IV. FACILITY: RIZH. POLITEKH. INST., RIGA, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

UDC 547.856

USSR

BRUTANE, D. V., and STRAKOV, A. YA., Riga Polytechnical Institute, Riga, Latvian Sovnarkhoz

"2-Phenyl-4-methyl-5-oxo-5,6,7,8-tetrahydroquinazolines"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, Seriya Khimicheskaya, No 2, 1970, pp 202-205

Abstract: Transamination of 2-(α-phenylamino)-ethylidenecyclohexanedione, 1,3,2-(α-phenylamino)-ethylidene-5,5-dimethyl-, -5-phenyl-, and -5-(α-furyl)-cyclohexanediones-1,3 with benzoamidine carried out by refluxing the components in absolute ethanol for 5-10 hrs in the presence of piperidine gave a 50-70% yield of 2-phenyl-4-methyl-5-oxo-5,6,7,8-tetrahydroquinazoline, 2-phenyl-4-methyl-5-oxo-7,7-dimethyl-, -7-phenyl-, and -7-(α-furyl)-5,6,7,8-tetrahydroquinazolines, respectively. The same quinazolines were synthesized from corresponding 5-substituted 2-acetylcyclohexanediones-1,3 and benzamidine. Reacting acetamidine or formamidine with 2-acetylcyclohexanediones-1,3 gives 2-(α-aminoethylidene)-cyclohexanediones-1,3.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

UDC 547.856

USSR

STRAKOV, A. YA., BRUTANE, D. V., and LEYCH, V. D., Riga Polytechnical Institute, Riga, Latvian Sovnarkhoz

"2-Phenyl-7,7-dimethyl- and 2,7-Diphenyl-4-phenylamino-5-oxo--5,6,7,8-tetrahydroquinazolines"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, Seriya Khimicheskaya, No 2, 1970, pp 248-249

Abstract: Reaction of 5,5-dimethyl- (I), and 5-phenylcyclohexanedione-1,3-thiocarboxylic acid (II) with benzamidine in boiling absolute ethanol gave, respectively 3-(N-benzamidynyl)-5,5-dimethyl- (m.p. 174°C) and 3-(N-benzamidynyl)-5-phenylcyclohexen-2-one-1-thiocarboxylic-2 acid, m.p. 180-184° C (decomposition). Refluxing the above compounds for 12 hrs in dry dioxane containing a trace of orthophosphoric acid gave their tetrahydroquinazoline derivatives melting, respectively, at 137-139 and 203-207° C (decomposition).

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USSR

(2)

KOVAL', A. D., VYaGIN, G. I., BOBKOV, V. V., KLIMOVSKIY, Yu. A., STRAL'CHENKO, S. S., and FOGEL', Ya. M., Khar'kov State University, imeni A. M. Gor'kiy

"On the Question of the Difference in Composition of Charged and Neutral Particles Knocked out of Gallium Arsenide by a Beam of Ar^+ Ions"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 43, No 8, Aug 73, pp 1753 - 1754

Abstract: A previous study in which Ar^+ particles had an energy of 2 kev showed that the positively charged secondary particles were primarily Ga^+_n ions and complexes, with As_n^+ particles being 2 - 3 orders of magnitude less frequent, while the neutral secondary particles were all arsenic atoms or complexes. Two types of gallium arsenide crystals were used as targets, (100) and (111), with no discernible difference in the distribution of secondary particles ejected between the two types. It is theorized that the difference in distribution is related to processes between the departing secondary particles and the surface of the solid and that these processes are determined by the velocity of the departing particles and the relative arrangement of energy zones of the solid body and excited levels of the particles.

The present work extends this investigation, using a beam of Ar^+ particles at 25 kev. The spectrum of the emitted particles in the visible light range was recorded. It consisted entirely of two resonance lines of GaI at 4172 and 4033 angstroms. These were found to be produced by Ga particles at energies on the

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USSR

KOVAL', A. D. et al., Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 43, No 8, pp 1753 - 1754

order of 2 - 3 kev. This is understandable, since the resonance level at 3.1 ev of the Ga atom, the transition from which to the base level produces fast excited Ga particles, is in resonance with a zone of free conductivity levels of the GaAs monocrystal, leading to a high probability of resonance ionization, while a significant portion of the levels of the As atom is in resonance with a forbidden zone of the crystal, making resonance ionization unlikely for these atoms. The neutral, emitted As atoms radiate in the vacuum ultraviolet, and were not recorded in the experimental spectrum. Resonance ionization can occur for As atoms at an energy level of 7.6 ev, but only a small percentage reaches this level.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--HEMOSTASIS INDICES IN RADIUM THERAPY OF LUNG CANCER -U-

AUTHOR-(03)-STRASHININ, A.I., YEVDOKIMOV, N.M., ZLYDNIKOV, D.M.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 3, PP 6-8

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIUM, MEDICAL NUCLEAR APPLICATION, LUNG, CANCER, FIBRINOGEN, THROMBOCYTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1695 STEP NO--UR/0241/70/015/003/0006/0008

CIRC ACCESSION NO--AP0101750

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2/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101750

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNDER STUDY WAS THE CLINICAL VALUE OF HEMOSTASIS INDICES FOR DETERMINING THE EFFECTIVENESS OF RADIUM THERAPY IN 39 PATIENTS WITH CANCER OF THE LUNG. IN THE GROUP OF PATIENTS WITH SATISFACTORY IMMEDIATE RESULT OF RADIUM THERAPY THE FOLLOWING WAS NOTED: REDUCTION OF FIBRINOGEN CONCENTRATION, INTENSIFICATION OF THE FIBRINOLYTIC ACTIVITY, DECREASE OF THE QUANTITY OF THROMBOCYTES WITH NORMALIZATION OF THE THROMBOCYTE FORMULA; NO SUCH CHANGES WERE OBSERVED IN THE GROUP OF PATIENTS WITH INEFFECTIVE RADIUM THERAPY. SUBSEQUENT CLINICAL OBSERVATIONS OVER PATIENTS UNDERGOING RADIUM THERAPY HAVE SHOWN THAT IN PATIENTS WITH A SATISFACTORY EFFECTIVENESS OF RADIUM TREATMENT THE AVERAGE SURVIVAL COMPRISED 19 AND ONE HALF MONTHS, WHEREAS IN PATIENTS WITH AN UNSATISFACTORY EFFECT, 7 AND ONE HALF MONTHS.

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ELECTRODYNAMICS

STRASHININ E.P.

(9)

JPRS 61609

29 March 1974

RESEARCH ON MATERIALS FOR THE MANUFACTURE OF OPEN-CYCLE MHD GENERATOR ELECTRODES

[Article by G. V. Samsonov, V. M. Sleptsov, G. G. Gnesin, V. S. Fomenko, I. A. Podchornyayeva, Yu. K. Lapshov (Institute of Problems of Hylology, Academy of Sciences UkrSSR), G. N. Shegolev, Yu. P. Kukota (Institute of Industrial Thermophysics, Academy of Sciences UkrSSR), E. P. Strashinin (Institute of Electrodynamics, Academy of Sciences UkrSSR): Kiev, Issledovaniye Materialov dlya MGDG Otkrytogo Tsikla, Russian, 1971, pp 393-409]

Annotation

Presented in this paper are the results of testing of gas-permeable blown electrodes under model MHD conditions. The tests revealed that the erosion resistance of protected materials is increased by a factor of 60 to 100 while the current density is 2-3 A/cm² (in the distributed discharge mode) and up to 20 A/cm² in the arc mode.

The interaction between air plasma containing compounds of alkali metals as additive, and the surface of electrodes, protected by blowing and without protection, was investigated. The results of tests of electrodes made of nonporous polycrystalline silicon carbide, produced by the reaction sintering method, are presented in this work. The physical properties which govern the operational performance of the electrodes are analyzed. It is established that long-term operation of the electrodes does not result in change of the phase composition and properties of polycrystalline silicon carbide. Erosion and chemical destruction occurs only on the surface of electrodes.

The composition of the film formed on the surface of a silicon carbide electrode during operation in contact with plasma containing potassium additive is analyzed. It is shown that the continuously forming silicate film substantially increases the emissivity of silicon carbide.

The electrode of an MHD generator should satisfy two main requirements: a) resistance to the aggressive action of the plasma jet for a long

[I - USSR - L]

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

UDC 661.665.1

STRASHINSKAYA, L. V., and STEPANCHUK, A. N., Institute of Problems of Material Science, Academy of Sciences, Ukrainian SSR, Kiev

"Contact Interaction of Titanium Diboride with Titanium, Zirconium, and Vanadium in a Vacuum"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 6, 1970, pp 76-79

Abstract: A study was made of the behavior of titanium diboride when heated in a vacuum of about $5 \cdot 10^{-5}$ mm Hg in contact with titanium, zirconium and vanadium. The investigations were performed at 900-1700°C using compact polished specimens of the metals pressed into titanium diboride powder, on compact polished specimens of metals and titanium boride in contact, and on mixtures of powders (50 vol.% each metal and TiB_2). It is demonstrated that the temperature of the beginning of the interaction increases with increasing melting point of the metals and degree of compactness of the specimens.

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1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ENERGETIC STRUCTURE OF CDS CRYSTAL AND FORM OF ITS EXCITION BANDS -U-

AUTHOR-(02)-BRODIN, M.S., STRASHNIKOVA, N.I.

5

COUNTRY OF INFO--USSR

SOURCE--UKRAYIN. FIZ. ZH. (USSR), VOL. 15, NO. 5, P. 705-11 (MAY 1970)

DATE PUBLISHED----MAY70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EXCITON, CADMIUM SULFIDE, ABSORPTION SPECTRUM, LINE SPLITTING, ENERGY BAND STRUCTURE, SINGLE CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1806 STEP NO--UR/0185/70/015/005/0705/0711

CIRC ACCESSION NO--AP0133711

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 025

CIRC ACCESSION NO--AP0133711

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OPTICAL DENSITIES WERE MEASURED BY ABSORPTION SPECTRA OF FINE CDS SINGLE CRYSTALS IN A 'FREE STATE'. THE OBSERVABLE DOUBLET STRUCTURE OF EXCITON BANDS A AND B IS ASSOCIATED WITH MANIFESTATION OF THE SO CALLED LOOP OF EXTREMA IN THE ZONES OF SYMMETRY GAMMA SUB7. B BAND IN THE COMPONENT OF THE SPECTRUM E PARALLEL TO C REMAINS UNSPLIT AND IS DESCRIBED BY THE ASYMMETRIC LORENTZ CURVE WITH NEGATIVE ASYMMETRY. PECULIARITIES OF FORM OF THE EXCITON BANDS ARE UNDER DISCUSSION. (16 REFS.).

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

UNCLASSIFIED PROCESSING DATE-

1/2 020

TITLE--DISLOCATION DENSITY DEPENDENCE OF THE INTERFERENCE ABSORPTION COEFFICIENT OF X RAYS -U-

AUTHOR-(02)-KISIN, V.I., STRATAN, I.V.

5

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1274-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ABSORPTION COEFFICIENT, X RAY, CRYSTAL DISLOCATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1300 STEP NO--UR/0181/70/012/004/1274/1275

CIRC ACCESSION NO--AP0124951

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

2/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124951

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANOMALOUS TRANSMISSION IN PERFECT CRYSTALS SHOWS THAT INTERFERENTIAL ABSORPTION COEFF. OF X RAYS INCREASES ALMOST LINEARLY WITH INCREASING CONCN. OF DISLOCATIONS. THIS FACT IS EXPLAINED IN TERMS OF A SIMPLIFIED MODEL OF THE DISTRIBUTION OF DISLOCATIONS IN THE CRYSTAL WHICH GIVES A SATISFACTORY AGREEMENT WITH EXPTL. DATA. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

1/2 007 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--MOVEMENT OF SINGLE DISLOCATIONS IN A DISLOCATION ENSEMBLE -U-

AUTHOR--STRATAN, I.V., PREDVODITELEV, A.A., STEPANOVA, V.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 767-73

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CRYSTAL DISLOCATION, SODIUM CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0657 STEP NO--UR/0181/70/012/003/0767/0773

CIRC ACCESSION NO--AP0105636

UNCLASSIFIED

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2/2 007 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105636

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOVEMENT OF SINGLE DISLOCATIONS IN THE DISLOCATION ENSEMBLE IN NACL CRYSTALS WAS INVESTIGATED. THE FREE PATHS OF THE DISLOCATIONS DEPEND ON THE MAGNITUDE OF THE APPLIED STRESS AS WELL AS ON THE DISTRIBUTION OF DISLOCATIONS AT A GIVEN POINT IN THE CRYSTAL. DISTRIBUTIONS OBTAINED FOR THE FREE PATHS EXHIBIT A MAX. WHICH IS SHIFTED TOWARD LONGER WAVELENGTHS WHEN THE EXTERNAL STRESS INCREASES AND TOWARD SHORTER FREE PATHS WHEN DISLOCATION D. INCREASES. PROLONGED STOPS OF THE DISLOCATIONS IN THE ENSEMBLE MAY BE CAUSED BY HEAD ON COLLISIONS OF THE DISLOCATIONS AND BY THE FLUCTUATIONS OF LONG RANGE NONCOMPENSATED FIELDS OF THE STRESS OF DISLOCATIONS BY THE ENSEMBLE. THE LATTER IS ESP. PRONOUNCED AT SMALL LEVELS OF EXTERNAL STRESS.

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USSR

UDC 612.314.58(088.8)

YEFREMOV, I. S., KOSAREV, G. V., KOS'KIN, O. A., and STRATIY, V. I. [Mosk. energ. in-t-- Moscow Power Institute]

"Device for Regulation of D-C Voltage"

USSR Author's Certificate No 2599995 (sic), filed 3 Feb 68, published 4 May 70 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5B443P)

Translation: An improvement of the circuit of a direct pulse d-c converter is proposed. In order to decrease overvoltage at the principal thyristor, the circuit is fulfilled so that the cathode of an auxiliary thyristor is connected with the positive terminal of the power supply through a commutating capacitor, and the anode of both thyristors is connected across a commutating choke coil. 1 ill. I.A.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR UDC 621.391.2

STRATONOVICH, R. L.

"Superposition of Quantum Signals"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2100-2106

Abstract: Operator formulas are presented which describe the superposition of quantum signals. The corresponding formulas are derived by which the Wigner and Glauber distributions are calculated for signal superposition. The convolution formula initially proposed by Glauber [R. I. Glauber, Phys. rev, No 131, 2766, 1963] is valid only as the limiting case of the derived formulas. The Glauber rule

$$P(a) = \int P_1(a - a_2) P_2(a_2) \Pi d^2 a_2$$

(P is the quasidistribution characterizing the state of the quantum system, P_1 is the distribution characterizing one signal and P_2 is the distribution characterizing the second signal) is not actually physically realized. It is replaced by the superposition rule

$$P(a)_{out} = \frac{1}{\sin \varepsilon} \int P\left(\frac{a - a_n \cos \varepsilon}{\sin \varepsilon}\right)_s P(a_n)_n d^2 a_n.$$

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

USSR

STRATONOVICH, R. L., Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2100-2106

where $a_n \cos \varepsilon$ is additive noise. The investigation is performed for one mode, but extension of it to the multimode case is demonstrated.

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UNCLASSIFIED PROCESSING DATE--27NOV70

1/2 023

TITLE--CONTRIBUTION TO QUANTUM NONLINEAR THEORY OF THERMAL FLUCTUATIONS
-U-

AUTHOR--STRATONOVICH, R.L.

5

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 5, PP 1612-1622

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--QUANTUM THEORY, THERMAL EFFECT, HEAT DISSIPATION, NONLINEAR THEORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0056/70/058/005/1612/1622

PROXY REEL/FRAME--3001/2299

CIRC ACCESSION NO--AP0127650

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 023

CIRC ACCESSION NO--AP0127650

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN IMPROVED DEDUCTION OF THE THREE INDEX (QUADRATIC) FLUCTUATION DISSIPATIVE THEOREM IS OBTAINED BY APPLYING A THEOREM WHICH PERMITS ONE TO INTERCHANGE THE OPERATORS IN THE EQUILIBRIUM MOMENT FUNCTIONS. SIMILAR RELATIONS ARE OBTAINED FOR THE FOUR INDEX (CUBIC) THEORY. AN INVESTIGATION IS MADE OF AN ARBITRARINESS WHICH STILL REMAINS IN THE THEORY, VIZ. EXPRESSION OF THE FLUCTUATION CHARACTERISTICS IN TERMS OF DISSIPATION CHARACTERISTICS, THE NONLINEAR SUSCEPTIBILITIES.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

1/2 008 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--COMPARISON OF LINEAR AND NONLINEAR METHODS FOR EXTRAPOLATION AND INTERPOLATION OF A MARKOV SIGNAL -U-

AUTHOR-(02)-MIRKIN, L.I., STRATONOVICH, R.L.

S

COUNTRY OF INFO--USSR

SOURCE--VESTNIK MOSKOVSKOGO UNIV. FIZ. ASTRON. USSR, VOL. 11, NO. 1, P. 26-34 1970

DATE PUBLISHED--------70

SUBJECT AREAS--MATHEMATICAL SCIENCES, PHYSICS

TOPIC TAGS--FILTER THEORY, MARKOV PROCESS, ALGORITHM, NONLINEAR THEORY, LINEAR FUNCTION, INTERPOLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1329 STEP NO--UR/0188/70/011/001/0026/0034

CIRC ACCESSION NO--AP0109413

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210007-4

2/2 008 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0109413

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARISON IS MADE OF LINEAR AND NONLINEAR METHODS OF FILTERING. ALGORITHMS ARE PROVIDED FOR INTERPOLATION AND EXTRAPOLATION OF BINARY MARKOV SIGNALS. THE RESULTS OBTAINED ARE COMPARED WITH THOSE DERIVED FROM LINEAR FILTERING.

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Acc. Nr: AP0045001 Abstracting Service: 5/70 INTERNAT. AEROSPACE ABST. Ref. Code: UR0109

S

A70-22408 # Quasi-linear methods in the theory of optiinal nonlinear filtration (Kvszilineinye metody v teorii optimal'noi nelineinoi fil'tratsii). R. L. Stratonovich. *Radiotekhnika i Elektronika*, vol. 15, Jan. 1970, p. 75-83. 6 refs. In Russian.

Investigation of quasi-linear estimator algorithms derived with the aid of a Gaussian approximation of a multidimensional a posteriori distribution. In contrast to the results of Bol'shakov and Repin (1961), recurrent equations of filtration are obtained which make it possible to avoid the solution of integral equations. These equations in the Markov case directly convert to the corresponding equations in Markov theory. The proposed theory makes it possible to achieve both filtration and optimal signal interpolation, resulting in significant gain of estimate accuracy. T.M.

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19771897

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USSR

UDC 669.189:621.746.75

KHLYNOV, V. V., GORNOVOY, V. A., and STRATONOVICH, V. N., Sverdlovsk

"Some Factors Affecting the Enlargement and Removal of Nonmetallic Inclusions From Steel"

Moscow, Izvestiya Akademii Nauk SSSR -- Metally, No 5, 1970, pp 47-50

Abstract: This article contains an analysis of factors affecting the removal of nonmetallic inclusions from steel. In the experiment silicon or aluminum was introduced into previously oxidized technical Armco-iron [O] = 0.175%. A high-speed movie camera was used to record the kinetics of transition of the sample (coated with deoxidation products) of metal in the gas phase (helium). The hole formed on the surface of the metal was round if the curvature of the plate of MgO or Al_2O_3 did not change from point to point. As its diameter 2r varied with time t, the rate of loss of metal from the surface of the sample u(dr/dt) was found. The experimental results are presented in the form of a graph showing that in the oxygen concentration range of 0.175-0.12% the value of u increases with deoxidation by Al several times faster than by silicon. The mechanism of this phenomenon is discussed in some detail. It is noted that the dependence of stability on the properties of the phase coating the surface of the sample and the metal indicates different capacity of the thin metal

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