"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UNCLASSIFIED

PROCESSING DATE--04DEC--

2/2 013

CIRC ACCESSION NO--AP0130939

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREPNS. CONTG. LARGER THAN OR EQUAL TO 50PERCENT TETRAMETHYLTHIURAM DISULFIDE (TMTD) PROTECTED SEEDS AGAINST MOLDING DURING A 1-2 YEAR STORAGE PERIOD; THE GERMINATING ABILITY OF THE SEEDS WAS UNAFFECTED. USE OF COMBINED PREPNS. BASED ON 50PERCENT TMTD AND 20PERCENT GAMMA HEXACHLOROCYCLOHEXANE OR HEPTACHLOR ALLOWED THE STORAGE PERIOD TO BE INCREASED TO 40 MONTHS WITHOUT ADVERSE EFFECT. THE USE OF SEMIDRY METHOD OF MORDANTING SEEDS DESIGNATED FOR LONG TERM STORAGE YIELDED BOTH BETTER DISEASE PROTECTION AND SOWING QUALITY OF CORN.

FACILITY: VSES. NAUCH.-ISSLED. INST. KUKURUZY, DNEPROPETROVSK, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 019

TITLE--THE SELECTION OF FILTER CAPACITY OF A THYRISTOR INVERTER -U-

AUTHOR--KULIK, V.D.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, ELEKTRICHESTVO, NO 3, 1970, PP 83-84

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., ENERGY CONVERSION (NON-PROPULSIVE)

TOPIC TAGS--THYRISTOR, ELECTRIC INVERTER, DIODE CIRCUIT, ELECTRIC FILTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0105/70/000/003/0083/0084

PROXY REEL/FRAME--1999/1207

CIRC ACCESSION NO--AP0123171

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 019

CIRC ACCESSION NO--AP0123171

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROCESSES OCCURRING IN A SINGLE PHASE RESONANT SERIES CONNECTED INVERTER WITH ADDITIONAL DIODES AND FILTER CAPACITY AT THE INVERTER'S OUTPUT ARE DISCUSSED. CALCULATED EXPRESSIONS ARE GIVEN.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

Acc. Nr: AP0053449 Abstracting Service: CHEMICAL ABST. Ref. Code: UR0366

111347z Reaction of [benzothiazolyl substituted] polyfluorinated olefins with ammonia. Malichenko, N. A.; Kagupol'skii, L. M.; Kulik, V. F. (Inst. Org. Khim., Kiev, USSR). Zh. Org. Khim. 1970, 6(2), 389-94 (Russ). The reaction of $RCF_2CF_2CF:CF_2$ (R in this abstr. is benzothiazolyl) with aq. NH_3 solns. at 20° gave $RCF_2C(NH_2):CFCN$ (I). The reaction proceeds through $RCF_2CF:CFCN$ as the intermediate (not isolated). $RCF_2CF:CF_2$ reacts with aq. NH_3 at 20° to give RCF:CFCN (II), which on heating to 60° in aq. NH_3 gives $RC(NH_2):CFCN$ (III). The possibility of I rearrangement to $RCF:CFCF_2CFCF_2NH_2 \rightarrow II \rightarrow III$ was eliminated by reacting IV with aq. NH_3 at 60° which gave $RC(:NH)CHFCF_2$. The presence of R in the above compds. accelerates the reaction. $H(CF_2)_4CF:CF_2$ requires reflux temps. with NH_3 to give $H(CF_2)_3C(NH_2):CFCN$ (V). Heating I, II, or V with aq. acid solns. gave RCF_2COCH_2F, $RCOCH_2F$, or $H(CF_2)_4COCH_2F$. CPJR

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REEL/FRAME
19830474

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

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UDC 621.382.002

USSR

GAYSINSKIY, V.B., GAL'CHINETSKIY, L.P., GRIGOR'YEV, A.N., KOSHKIN, V.M., KULIK, V.N., NIKOLAYCHUK, L.I., PIVOVAR, L.I., RAYSKIN, E.K., SYSOYEV, L.A., FAYNER, M.SH.

"Ion Implantation Of Single Crystals Of Cadmium Sulfide"

V sb. Monokristally i tekhnika (Single Crystals And Technology--Collection Of Works), Issue 6, Khar'kov, 1972, pp 109-112 (from RZh:Elektronika i yeye primeneniye, No 11, Nov 1972, Abstract No 11E459)

Translation: The effect was studied of the dose and energy of irradiation by lithium ions in the temperature range from minus 70 to plus 180° C on the conductivity of cadmium sulfide. A divergence is found between the theoretically calculated value of the depth of penetration of lithium ions and the experimental results. These divergences are accounted for by the marked differences of the structures of the surface layer and the volume of the crystal. With the aid of ion implantation piezosemiconductor transducers were produced based on a high-resistance layer in CdS. Summary.

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USSR

GAL'CHINETSKIY, L. P., KOSHKIN, V. M., KUMAKOV, V. M., KULIK, V. N., RUDENKO, M. I., RYABKA, P. M., ULMANIS, U. A., SHAKHOVTSOV, V. I., and SHINDICH, V. L.

"Radiation Stability Effect in Semiconductors With Stoichiometric Vacancies"

Leningrad, Fizika Tverdogo Tela, vol 14, No 2, 1972, pp 646-648

Abstract: Because such lattice defects as impurity atoms have no effect on the electrical characteristics of semiconductors of the $A^{III}_2B^{VI}_3$ type, such as In_2Te_3, Ga_2Te_3, and Ga_2Se_3, the authors were led to the assumption that irradiation of these crystals by high-energy particles would have little effect on their electrical characteristics as well. To test this assumption, they subjected crystals of In_2Te_3 and Ga_2Te_3 to irradiation by gamma quanta, fast electrons, and fast neutrons in a pulse reactor, as well as by mixed reactor radiation. Tables of the characteristics of these crystals before and after the irradiation are presented. The authors of this brief communication thank V. S. Vavilov and V. L. Vinetskiy for their helpful discussions of the results.

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UDC 537.1.074

USSR

GAL'CHINETSKIY, L.P., KOSHKIN, V.M., KULIKOV, V.D., [redacted], RUBENAK, A.I., RYABKA, P.M., ULMANIS, U.A., SHAMKOVTSOV, V.I.

"Study Of The Possibility Of Use Of Type In_2Te_3 Semiconductors As Detectors Of Reactor Radiation"

V sb. Metrol.neytron.izlucheniya na reaktorakh i uskoritelyakh (Metrology Of Neutron Radiation At Reactors And Accelerators--Collection Of Works), Moscow, 1971, p 56 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2B275)

Translation: During irradiation of $A^{III}B^{VI}$ compounds of the In_2Te_3 type by fast neutrons with fluxes up to 5×10^{16} cm^{-2}, electrons with an energy of 100 Mev with fluxes up to 10^{19} cm^{-2}, and gamma quanta with an energy of 1.2 Mev with fluxes up to 10^{18} cm^{-2}, a marked radiation sensitivity is discovered. An irreversible change of the electrophysical properties after irradiation is not established. The possibility is studied of the use of these materials as the basis for radiation-resistant detectors. A.M.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UNCLASSIFIED PROCESSING DATE--13NOV70

1/2 024

TITLE--CONTROL OF DISRUPTION AND RESTORATION OF EXPERIMENTAL [illegible] CONNECTIONS OF THE SMALL INTESTINE AFTER ITS CENTRAL DENERVATION -U-

AUTHOR-(02)-MAKSIMENKOVA, A.N., KULIK, V.P.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 6, PP 117-119

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AUTOTRANSPLANTATION, SMALL INTESTINE, DOG, REFLEX, NERVOUS SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0219/70/069/006/0117/0119

PROXY REEL/FRAME--3004/0564

CIRC ACCESSION NO--AP0131187

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 024

CIRC ACCESSION NO--AP0131187

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN EXPERIMENTS ON DOGS SUBJECTED TO DIFFERENT OPERATIONS (EXTERIORATION OF THE INNERVATED INTESTINAL LOOP, TOTAL AUTOTRANSPLANTATION OR DECENTRALIZATION OF THE SMALL INTESTINE AND SURGICAL REINNERVATION AFTER TRANSPLANTATION OF THE INTESTINE) IT IS SHOWN THAT RECTOENTERAL REFLEX AND THE DURATION OF THE INHIBITORY PHASE OF METHYLDIASYL ACTION ON THE MOTORICITY OF THE SMALL INTESTINE MAY SERVE AS TESTS FOR EVALUATING THE STATE OF CENTRAL INNERVATION OF THE SMALL INTESTINE. FACILITY: LABORATORY FOR TRANSPLANTATION OF ORGANS AND TISSUES OF THE ACADEMY OF MEDICAL SCIENCE OF THE USSR. FACILITY: INSTITUTE OF AGE PHYSIOLOGY AND PHYSICAL EDUCATION OF THE ACADEMY OF PEDAGOGICAL SCIENCES OF THE USSR, MOSCOW.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

Control Systems

ST JPRS 55352

KULIK, V. T.

K-LIST MODELS OF TOTAL SYSTEM.

[Article by [illegible], [illegible], [illegible] Upravleniya, Moscow, [illegible], Referaty Dokladov, Russian, Part I, [illegible], pp [illegible]]

A study was made of supercomplex systems called total systems [illegible] along with the attributes usually attributed to large systems, [illegible] one of the following properties: 1) the presence of nebulous [illegible] between probability determinacy and complete indeterminacy; 2) the necessity for considering meaningful, informal semantic information and its value; 3) variable and vague goals which can change even during the process of solving the problem and do not have clear formulation as optimalness criteria [illegible] Total systems include, for example, such supercomplex [illegible] as a whole, natural language, human civilization [illegible] "integrated" control systems as the control of a collective developing large control systems, the control of an enterprise considering [illegible] adjustment of technological processes, and so on.

The problem is stated of constructing the organization of models of total systems which, in addition to the theoretical possibilities of considering properties [illegible] insures effective realizability of the models in real [illegible] data processing systems during description, analysis and optimization of the investigated systems. Effective realizability is understood in the sense of minimum required read-access memory and the number of operations [illegible] part of the investigation system and maximum adaptability to the [illegible] with preparing the initial data and evaluating the results.

[illegible] of this problem is found in the class of list structures [illegible] form and generalized operations on them. A system of de[illegible] is proposed based on combination lists (k-lists) [illegible] the required generality of description and efficiency of implementation. [illegible] the k-list S_k we mean the partially ordered system of linked lists: S_k [illegible] where [illegible] are lists bearing information about the structure, parameters, functions and meaning of the described system, [illegible] the symbol ":" in the symbol of the linking operation. The nebulous determinacy contained in the k-list reduces to the branching condition R_a ($R_a \subset S_c$) at the nodes S_a ($S_a \subset S_c$) of a k-network isomorphic to the k-list.

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USSR

KULIK, V. T.

"The SEMANTE Language. Principles of Morphology"

Obshch. teoriya sistem [General Systems Theory -- Collection of Works], Kiev, 1972, pp 84-94 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V605 by V. Mikaeyev)

Translation: General points of the morphology of SEMANTE are described. SEMANTE is based on Sems-semantic units, concepts which can be expressed by one or by several words. Sems are divided into basic and derivative types. Basic Sems are primary from the standpoint of understanding the cognitive system in which they are perceived. The concepts of derivative sems are expressed by means of basic sems and are always unambiguous for each sem. The same sem may be expressed in different words, characters, or combinations, but all expressions of one sem are considered equivalent and are precise synonyms. Conversely, every verbal expression has one and only one content, corresponding to a single sem. Words do not change in person, in case, etc. Changes in content are made only by the appearance of new words related to the new data. Words have constant or variable content. For example, all one-letter words and the overwhelming majority of non vowel words (made of consonants alone) have variable content. These words

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USSR

KULIK, V.T., Obshch. teoriya sistem, Kiev, 1972, pp 84-94

are used as brief representations of the content assigned to them in a given section of text. Words with constant content are divided into basic and derivative words. The basic dictionary consists of two and three letter words (and a few four letter words). Derivative words are formed from basic words by addition of letters, syllables and other basic words. The words of the basic dictionary, expressing the basic sems, are divided into ters and cors. Ters (from the word "term") are word-sems which act as units carrying the primary content of a concept, in lists of word-phrases. Cors ("correlators") are word-sems expressing the connections between units. Furthermore, word-contractions for ters together with cors are possible, called (ters+cors). The words of the basic dictionary are expressed literally and phonetically in the basic alphabet or character expression. They are synonyms. The character expression can be perceived directly visually, while its "reading" corresponds to the literal expression -- synonym.

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UDC 51:155.001.57:681.3.06

USSR

KULIK, V. T.

"Semantic Language. Hieroglyphic Nets"

Tekhn. Kibernetika. Vyp. 7, [Engineering Cybernetics, No 7--Collection of Works], Kiev, 1970, pp 18-23, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V683 by V. M.).

Translation: This article is dedicated to methods of describing complex signed patterns--hieroglyphs, represented in the form of so-called hieroglyphic nets, defined as a graph, the points of which may be located at fixed points on a plane, while the lines are drawn in correspondence with fixed rules. The coordinate grid of the placement of the points is fixed relative to the X and Y axes, intersecting at angle α, by fixing step q along the horizontal X axes and step h along the vertical Y axes. Angle α can take on values of 90, 75 or 60 degrees. Description of a character is fully defined by indicating the position of the points and branches between them. The latter are fixed by an ordered pair of points and configuration: straight line, circular arc or sectors of straight lines and circles. It is noted that a system of stenography constructed on this principle considering the phonetics, semantics and convenience of input of writing to computers, could be the basis for an international shorthand system, used for man-machine interaction in various languages.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UDC: 535.932

USSR

KULIK, V. Ya., KULIK, P. P., RYABYY, V. A., Moscow Aviation Institute imeni S. Ordzhonikidze

"Diffusion Cross Section of Scattering of Electrons by Cesium Atoms"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 4, Jul/Aug 72, pp 715-723

Abstract: The electrical conductivity of a weakly ionized cesium plasma is measured to determine the effective electron—cesium atom diffusion cross section at temperatures between roughly 1000 and 2000°K where there is the greatest uncertainty as to the diffusion cross section of cesium. An attempt is made to systematize published theoretical and experimental data on the electron—cesium atom diffusion cross section by analysis within the framework of the Chapman-Eskog kinetic theory. Satisfactory mutual agreement is observed between the most creditable experimental data and the predictions of scattering theory. The authors thank E. M. Karule, R. K. Peterkop and other staff members of the Department of Theoretical Physics of the Institute of Physics, Academy of Sciences of the Latvian SSR, and also L. A. Vaynshteyn for constructive criticism on the problems dealt with in the paper.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

UDC 621.314.61

KULIKOV, A.A., KOSTIN, N.A., BERNAT, R.K., BONDAR', K.I.

"Reversable Thyristor Converter For Galvanizing Electric And Diesel Locomotive Parts By The Method Of Reversed Current"

Materialy Yubileyn. nauchno-tekhn. konferentsii Dnepropetr. in-ta inzh. zh.-d.transp. (Materials Of The Jubilee Scientific-Technical Conference Of The Dnepropetrovsk Institute Of Railroad Transportation Engineers), Dnepropetrovsk, 1970, pp 67-68 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11B442)

Translation: A single-phase two half-cycle rectifier circuit lies at the base of the converter. The thyristors are phase controlled by the phase shifter bridge method and an amplifier using transistors, which is simultaneously a generator of control pulses. A multivibrator is used to obtain the reversal current, the duration of the output pulses of which determines the flow time of the forward and reverse currents. A.T.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

KULIKOV, A. V., LIKHTENSHTEYN, G. I., ROZANTSEV, E. G., SUSKINA, V. I., and SHAPIRO, A. B.

"Possibility of Determining the Distance Between Functional Protein Groups by the Spin-Label Method"

Moscow, Biofizika, No 1, 1972, pp 42-48

Abstract: A set of iminoxyl polyradicals with a known structure was used to analyze the possibility of determining the relative position of the spins of iminoxyl fragments from the shape and second moment of the ESR spectra of spin-labeled proteins (egg lysozyme, sperm whale myoglobin, and rabbit muscle myosin) at T = 77° K. The ESR spectra were found to be sensitive to the distance between spins if it did not exceed 17 to 18 Å. (The method of second moments can be used to estimate the distance between iminoxyl fragments in the 8 to 16 Å interval). The spin-label method was used to estimate the distance between the functional groups in lysozyme (histidine and lysine groups), myoglobin (histidine groups), and myosin (sulfhydryl groups). The results in the case of lysozyme and myoglobin were consistent with the X-ray diffraction models of these proteins.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

UDC: 621.384.639

ABROSIMOV, N. K., ALKHAZOV, D. G., DMITRIYEV, S. P., YELISEYEV, V. A., KAMINKER, D. M., KULIKOV, A. V., MIRONOV, Yu. T., MIKHEYEV, G. F., RYABOV, G. A., CHERNOV, N. N., SHALYANOV, V. I., KOMAR, Ye. G., MALYSHEV, I. F., MONOSZON, I. A., PEREGUD, V. I., ROZHDESTVENSKIY, B. V., ROYFE, I. M., SEREBENKO, Ye. V., Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences of the USSR, Leningrad, Scientific Research Institute of Electrophysical Equipment imeni D. V. Yefremov, Leningrad

"The Leningrad Synchrocyclotron for a Proton Energy of 1 GeV"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 9, Sep 71, pp 1769-1775

Abstract: The paper describes the synchrocyclotron at the Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences of the USSR for a proton energy of 1 GeV. Proton beam parameters as well as the characteristics of the main systems of the accelerator are presented. The beam channels are described, and the layout of the accelerator building is given. The installation has been in successful operation since 1970. Three tables, two figures, bibliography of twelve titles.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR UDC: 550.837

KULIKOV, A. V., SHEMYAKIN, Ye. A., BUSHINA, S. S., GORYUNOV, A. S.,
All-Union Scientific Research Institute of Geophysical Prospecting Methods

"A Method of Geoelectric Prospecting"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 2, Jan 72, Author's Certificate No 324601, Division G, filed 29 Dec 70, published 23 Dec 71, pp 148-149

Translation: This Author's Certificate introduces a method of geoelectric prospecting using induced polarization by measuring the phase frequency characteristics of the overall electric field created by grounded sources of a harmonic polarizing field. As a distinguishing feature of the patent, the depth and resolution of the method are improved under the conditions of low-resistance geoelectric sections by measuring the phase characteristics with the supply and reception lines at acute and obtuse angles to one another. The angle between the lines is varied until the low-frequency part of the phase characteristic becomes dependent on this angle, and the presence of polarized objects is judged by the phase angles on the low frequency.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

KULIKOV, A. V. and SMIRNOV, G. I. (affiliate of Scientific Research Institute of Nuclear Physics of Moscow State University, Dubna); KKRPCHIAN, G. G. (Institute of Physics, Yerevan); et al (Joint Institute for Nuclear Research)

"Search for a New Type of Radioactivity in Al and W Targets Irradiated by 70 Gev Protons"

Moscow, Yadernaya Fizika, Vol. 13, No. 4, Apr 71, pp 786-790

Abstract: The first results of a new method proposed in 1970 by Pontekorvo for searching for hypothetical quasistable elementary particles which could be formed in high-energy collisions are reported. The method consists of the following: the possibility of such particles' sticking in the nuclear material can lead to favorable conditions for radioactivity of a "new type" characterized by the relatively high energy of the decay products (tens of Mev or more). The proposed method can be achieved by recording different forms of radiation; this study presents the first results of searches for "radioactivity" with the emission of high-

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USSR

DEM'YANOV, A. V., et al, Yadernaya fizika, Vol. 13, No. 4, Apr 71, pp 796-799

energy gamma-rays in Al and W targets irradiated for a long time (up to 34 days) by 70-Gev protons in the Serpukhov accelerator. One of the reasons for the rise of such gamma-rays can be the decay of new particles with the emission of [illegible]. The range of lifetimes from several hours to several years was investigated. No events with photon emission were observed. The upper limit of the nuclear cross section for the production of a "radioactive" quasinucleus which emits high-energy photons by 70-Gev protons is 10^{-38}-10^{-37} cm^2 for Al and 10^{-36}-10^{-35} cm^2 for W. This study was the first step in a search for the new type of metastable material. In terms of long-range planning, this series of experiments changes character in the area of lifetimes $\sim 10^{-10}$ sec; in addition to the search for new qualitative effects, it is possible to carry out quantitative studies of the properties of hypernuclei. This could be achieved in practice with the aid of a collective acceleration method which would yield an intensive beam of protons of extremely short duration ($\sim 10^{-11}$ sec) and a high repetition frequency ($\sim$1000 Hz).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UDC 621.384.6

USSR

ABROSIMOV, N.K., DMITRIYEV, S.P., ~~KULIKOV, A.N.~~, MERKEYEV, G.P., SEREBENKO, YE. V., CHERNOV, N.N. [Fiz.-tekhn. in-t AN SSSR -- Physicotechnical Institute, AS USSR]

"Device For Coupling An Oscillator Tube With The Resonance System Of A Synchrocyclotron"

USSR Author's Certificate No 270131, filed 28 Apr 69, published 5 Aug 70 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A403P)

Translation: A device is proposed for coupling an oscillator tube with the resonance system of a synchrocyclotron, which contains a waveguide feeder line. With the object of increasing the reliability of excitation of the resonance system and suppressing the transverse oscillations at the dee, the feeder for direct coupling is fulfilled in the form of two branches connecting the tube anode with the right and left halves of the dee, symmetrically with respect to the longitudinal axis of the dee, and the voltage feedback to the tube cathode is fed across a branching feedback feeder with the inductive voltage divider also arranged symmetrically with respect to the longitudinal axis of the dee at

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

ABROSIMOV, N. K., et al, USSR Author's Certificate No 270131, filed 28 Apr 69, published 5 Aug 70

its end opposed to the accelerating slit. In a variation of the proposed device, with the object of obtaining a relatively steady transmission of voltage from the anode of the oscillator tube to the accelerating slit of the dee, a lumped capacitance is connected to the anode of the oscillator tube, and the length and wave resistance of the feedback feeders are respectively matched.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR UDC 621.791.052.4.011:620.192.4:669.14.018.44

LAPTEV, A. A., LYUBALIN, P. M. (Candidates of Techn. Sciences), BELOTELOV, I. N., KULIKOV, F. R., and MANUYLOV, N. N. (Engineers)

"Certain Strength Characteristics of Weld Joints From VNS2 and VNS5 High-Strength Stainless Steels"

Moscow, Svarochnoye proizvodstvo, No 6, June 72, pp 29-31

Abstract: Argon-arc welding is widely used for welding structures from VNS2 and VNS5 high-strength stainless steels. It is not always possible, however, to heat-treat these structures after welding. Repeated heating in back runs may, therefore, affect the joint strength. The objective of this study was to rate the reliability of repaired structures in order to develop an efficient repair welding technology. Auxiliary welding without subsequent heat treating of argon-arc-welded butt joints from VNS5 steel markedly decreases their static strength. Welds from VNS2 steel are not affected to such an extent by auxiliary welding. Back runs of argon arc-welded butt joints from VNS2 steel substantially increase their susceptibility to cracking in blow-bending tests; this was not observed in joints from VNS5 steel. Surface plastic strain hardening of weld joints and weld-affected areas markedly increases the static strength of argon-arc

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LAPTEV, A. A., et al., Svarochnoye proizvodstvo, No 6, June 72, pp 29-31

welded joints from VNS2 and VNS5 steels and their combinations. Hardening fully compensates for the drop in static strength caused by auxiliary welding. Hardening hardly affects the susceptibility of weld joints to cracking in blow-bending tests with the exception of weld joints made from VNS2 + VNS5 steels. (2 illustrations, 3 tables)

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR UDC 621.791.753.042.2:669.295

VAS'KIN, YU. V., and KULIKOV, F. R.

"Consumable Electrode Welding of Alpha-plus Beta-Alloys of Titanium"

Moscow, Svarochnoye Proizvodstvo, No 9, Sep 70, pp 14-16

Abstract: A study of the consumable-electrode weldability of heavy-gage $\alpha+\beta$-titanium alloys is described. The study involved an ADSP-2 automatic welder, an IPP-1000P welding source, and a rigid volt-ampere characteristic. The properties of the welds made by consumable-electrode welding were studied on VT6, VT14, and VT22 titanium two-phase alloys with various β-phase contents. Relationships were determined among for welding current, feed rate, and electrode projection for various wire diameters in gas-shielded consumable-electrode welding. The optimum shapes and dimensions for edges as a function of the thickness of components to be welded were also determined. Welding specifications were worked out for the jet transfer of metal with various electrode diameters. The mechanical properties of the welds were determined after annealing (heating at 750° C, holding for 1 hour, furnace cooling down to 450°C at a rate of 3 to 5 deg/min., and then open air cooling). SPT-2 consumable-electrode single-pass welding of heavy-gage $\alpha+\beta$-titanium alloys produced weld joints featuring high strength and plastic characteristics as well as high efficiency in multiple tests under low-cycle loads.

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UDC 621.7[illegible]

KULIKOV, F. [illegible], [illegible]'KIN, Yu. V., and [illegible]LOV, Yu. G.

"Welding of Titanium Alloys in Local Protective Chambers"

Moscow, Svarochnoye Proizvodstvo, No 8, Aug 70, pp [illegible]

Abstract: A major difficulty in welding titanium and its alloys [illegible] capacity with respect to harmful impurities, such as oxygen, [illegible] and carbon. Saturation of the weld metal in the weld-affected [illegible] impurities markedly impairs the mechanical (plastic) properties [illegible] and sometimes bring about cracks and pores in them. This [illegible] local protective chambers for welding circular and rectilin[illegible] and its alloys of more than 5 mm thick. The optimum conditions [illegible] the chambers prior to welding and before setting up the [illegible] in the chamber have been determined. It was found that the content [illegible] impurities (oxygen and hydrogen) in the metal of the welds performed in such a chamber was not above that in both the parent metal and filler-wire. The operational use of local protective chambers and tests of the [illegible] welds produced in them have shown the latter to insure high-quality [illegible] of the weld [illegible] the weld-affected from interaction with air. It [illegible] that [illegible] of conventional inert gas-filled chambers [illegible] atmospheric [illegible] with the newly designed protective chambers [illegible] effective.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR UDC 591.185.5:577.37:599.4

KULIKOV, G. A., Chair of the Physiology of Higher Nervous Activity, imeni A. A. Zhdanova Leningrad State University

"Effect of the Cerebral Cortex on Frequency-Threshold Characteristics of the Electrical Responses of the Colliculus Inferior in Bats"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, No 5, 1972, pp 563-564

Abstract: The role of the cortex in echolocation was studied in two bat species (Rhinolophus ferrum-equinum and Myotis oxygnathus) whose echolocating cries are quite different (almost monochromatic in the former and frequency modulated in the latter). After baseline evoked potential was determined, the cortex was functionally isolated by applying 20% potassium chloride solution to the temporal region. This action significantly lowered the thresholds of the electrical responses of the colliculus inferior of M. oxygnathus in the 30 to 50 kHz frequency band, the greatest decrease occurring at 45 kHz where it amounted to 11 db. In R. ferrum-equinum, on the other hand, the bilateral application of KCl to the temporal cortex elevated the thresholds in the 25 to 70 kHz range. Thus, identical action on the cortex produced diametrically opposite changes in the thresholds of the electrical responses of the colliculus inferior in approximately the same frequency band. This direction of change in the thresholds

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KULIKOV, G. A., Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, No 5, 1972, pp 563-564

is regarded as improving the selectivity of the auditory system for the echolating frequencies used by the 2 bat species.

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K

USSR UDC: 616.831.31:612.819.6

KULIKOV, G.A., Chair of Physiology of Higher Nervous Activity Leningrad State University

"Cortical Regulation of Some Subcortical Formations in the Acoustic Analyser of Bats and White Rats"

Moscow, Mauchnyye Doklady Vysshey Shkoly, Biologicheskiye Nauki, No 3, 1970, pp 57-60

Abstract: Electric stimulation of the acoustic cortex elicited a response consisting of two successive positive phases in the inferior colliculus of bats and white rats. The amplitude of the first positive phase was much smaller than that of the second in rats, whereas it was usually equal to it or somewhat larger in bats. The presence of two phases in the response indicates the existence of two systems of corticifugal fibers proceeding to the inferior colliculus. The presentation of clicks to rats during the first phase lengthened the latent period and reduced the amplitude of the response to acoustic stimulation; during the second phase it produced the reverse effect. In bats, both the latent period and the amplitude of the response decreased regardless of the phase in which the clicks were presented.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR UDC: 632.95

SHCHEGLOV, Yu. V., KULIKOV, G. P., KOGAN, V. Sh., PROKOF'YEV, A. N., KOVALENKO, I. S.

"Dialkyl Phosphites -- Synergists of 2,4-Dichlorophenoxyacetic Acid Esters"

Tr. Ul'yanovsk. s.-kh. opytn. st. (Works of the Ul'yanovsk Experimental Agriculture Station), 1971, 5, pp 121-133 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7N642)

Translation: Among the dialkyl phosphites, the most [illegible] respect to [illegible] 2, 4-dichlorophenoxyacetate (I) is [illegible]. The addition of [illegible] of II to I increases the herbicidal activity [illegible] factor of 1.5-2, particularly against annual and perennial [illegible]. A mixture of I and II controls perennial rhizome weeds [illegible] alone. The addition of II to I does not increase its phytotoxicity [illegible] plants. T. A. Belyayeva.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

KULIKOV, G. P., KOGAN, V. Sh., PROKOF'YEV, A. N., KOVALENKO, I. S.

"Effectiveness of Autumn-Spring Application of Mixture of 2,4-D Butylester and Dibutylphosphite in Control of Perennial Shoot Weeds"

Tr. Ul'yanovsk. S.-kh. Opytn. St. [Works of Ul'yanov Agricultural Experimental Station], No 5, 1971, pp 108-113 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 N664 by T. A. Belyayeva).

Translation: A combination of autumn (post-harvest) treatment with 2,4-D butylester and spraying during the phase of tillering successfully suppresses both shoot and annual weeds. Addition of 5% dibutylphosphite increases the effectiveness of the herbiside, allowing the rate of expenditure to be halved.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

KULIKOV, G. P., PROKOF'YEV, A. N., VAGINA, V. Ye.

"Testing of a New Herbicide -- Tordone (aminotrichloropicolinc acid)"

Tr. Ul'yanovsk. S.-kh. Opytn. St. [Works of Ul'yanov Agricultural Experimental Station], No 5, 1971, pp 114-120 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 N666 by T. A. Belyayeva).

Translation: Experiments showed that tordone (I) has a strong toxic effect and aftereffect on winter and spring wheat. I can be recommended for control of weeds or non-agricultural land, since I has high herbicidal activity and long-term residual toxicity.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

1/2 043 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--INFLUENCE OF THE SURFACE POLARITY OF GALLIUM ARSENIDE AND INDIUM ANTIMONIDE ON THE DIFFUSION OF IMPURITIES -U-

AUTHOR-(02)-KULIKOV, G.S., DZHAFAROV, T.D.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1564-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY, MATERIALS

TOPIC TAGS--PHYSICAL DIFFUSION, ACTIVATION ENERGY, METAL COATING, SILVER, SURFACE PROPERTY, INDIUM ANTIMONIDE, GALLIUM ARSENIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0164 STEP NO--UR/0181/70/012/005/1564/1566

CIRC ACCESSION NO--AP0129420

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 043

CIRC ACCESSION NO--AP0129420

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF POLARITY OF THE SURFACES (111) AND (111) WAS INVESTIGATED IN THE CASE OF DIFFUSION OF AU IN INSB AND IN THE CONCN. DISTRIBUTION OF AG IN THE VOL. OF GAAS. THE SURFACE DIFFUSION OF AU IN INSB WAS INVESTIGATED AT 290-440DEGREES. DIFFUSION COEFFS. OF AU ARE DIFFERENT ON THE A AND B SURFACES OF INSB. THE A SURFACE HAS A SMALLER DIFFUSION COEFF. THE ACTIVATION ENERGIES ARE 0.81 AND 0.54 EV FOR THE A AND B SURFACES, RESP. THE VOL. DIFFUSION OF PRIME110 AG IN GAAS WAS INVESTIGATED AT 850DEGREES FOR 16-23 HR. THE CHARACTER OF THE DISTRIBUTION FROM THE SIDE OF GA (A SURFACE) IS SHARPLY DIFFERENT FROM THE DISTRIBUTION FROM THE SIDE OF AS (B SURFACE). THE CONCN. OF AG ON THE A SIDE IS MUCH SMALLER THAN ON THE B SIDE. IN THE MIDDLE, THE CONCN. OF AG IS CONST. THIS IS DUE TO DIFFERENT INTERACTIONS OF AG WITH THE GA AND AS SURFACES DURING DIFFUSION.

FACILITY: INST. POLUPROV., LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

1/2 031 UNCLASSIFIED PROCESSING DATE--13SEP70

TITLE--DIFFUSION, SOLUBILITY, AND ELECTRICAL PROPERTIES OF COBALT IN SILICON -U-

AUTHOR-(03)-BAKHADRYKHANOV, M.K., BOLTAKS, B.I., KULIKOV, G.S.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(1) 181-9

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--COBALT, SILICON, SOLUBILITY, PHYSICAL DIFFUSION, POTENTIAL DIFFERENCE, METAL COATING, ELECTRIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/0242 STEP NO--UR/0181/70/012/001/0181/0182

CIRC ACCESSION NO--AP0049521

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UNCLASSIFIED PROCESSING DATE--19SEP70

2/2 031

CIRC ACCESSION NO--AP0048521

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPLEX INVESTIGATION WAS CARRIED OUT OF DIFFUSION, SOLY., AND THE EFFECT OF CO ON THE ELEC. PROPERTIES OF SI. DIFFUSION HAS A COMPLEX DISSOCIATIVE CHARACTER. THE DIFFUSION COEFF. OF CO IN SI IS OF THE ORDER OF 10 PRIME NEGATIVE5 MINUS 10 PRIME NEGATIVE4 CM PRIME2 SEC AT 1000-1300DEGREES. SOLY. HAS A RETROGRADE CHARACTER WITH A MAX. OF 2 TIMES 10 PRIME16 ATOMS-CM PRIME3 AT 1240DEGREES. CO IMPURITIES ARE PRESENT IN SI IN THE FORM OF ACCEPTORS AND CREATE 5 LEVELS IN THE FORBIDDEN BAND: E SUBV MINUS E SUBA1 EQUALS 0.10 PLUS OR MINUS 0.02 EV; E SUBV MINUS E SUBA2 EQUALS 0.30 PLUS OR MINUS 0.03 EV; E SUBC MINUS E SUBA3 EQUALS 0.22 PLUS OR MINUS 0.03 EV; E SUBV MINUS E SUBA4 EQUALS 0.37 PLUS OR MINUS 0.2 EV; AND E SUBV MINUS E SUBA5 EQUALS 0.52 PLUS OR MINUS 0.02 EV. CALCN. WAS MADE OF THE LEVEL OF CHEM. POTENTIAL OF SI DOPED WITH CO, AND THE POSSIBILITY IS SHOWN OF OBTAINING COMPENSATED MATERIAL IN A BROAD INTERVAL OF CONCNS. OF CURRENT CARRIERS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR K UDC 621.315.592

BAKHADYRKHANOV, M. K., BOLTAKS, B. I., KULIKOV, G. S., PEDYASH, E. M., Institute of Semiconductors, Leningrad, Academy of Sciences USSR

"Diffusion, Solubility, and Electrical Properties of Zinc in Silicon"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 873-878

Abstract: The diffusion and solubility of zinc in silicon and its effect on the electrical properties of silicon were studied. It was established that the diffusion of zinc in silicon has complex dissociative nature, and the diffusion coefficient in the 1,100-1,300°C range varies from 10^{-7} to 10^{-8} cm^2/sec. The life of zinc at a node and an internode of the silicon lattice calculated from the rise in concentration level with annealing time at 1,200°C is 10^{-4} and 10^{-3} sec, respectively. The solubility is of a retrograde nature with a peak at $1.5 \cdot 10^{-6}$ cm^{-3} at 1,270°C. Zinc introduces three acceptor levels in the forbidden zone of silicon. During the process of decay of the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

BAKHADYRKHANOV, M. K., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 873-878

zinc-silicon solid solution, two donor levels -- 0.1±0.03 and 0.4±0.03 ev -- obviously connected with the interstitial zinc appear. The authors calculate the chemical potential level of silicon alloyed with zinc and demonstrate the possibility of obtaining the compensated material in a broad range of current carrier concentrations.

The conditions of obtaining silicon with a given specific resistance are calculated inasmuch as zinc in silicon is an acceptor and inasmuch as a compensated material can be obtained by introducing zinc into electronic silicon. The experimental data from the electrical measurements (carrier concentration, carrier mobility, specific resistance) before and after alloying the silicon with zinc and also for the control samples annealed without zinc are compared with the calculated data. It is noted that the concentration of electrically active zinc atoms is ~3 orders less

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USSR

BAKHADYRKHANOV, M. K., et al. Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 873-878

than the solubility determined from radioactive measurements. A significant part of the zinc atoms apparently settle in the dislocations that occur, for example, for cobalt in silicon or they enter into the composition of electrically inactive complexes. The experimental data compare well with the calculated data except for converged samples, and it is assumed that these divergences are the result of incorrect calculations.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

1/3 024 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DIFFUSION, SOLUBILITY, AND ELECTRICAL PROPERTIES OF ZINC IN SILICON -U-

AUTHOR-(04)-BAKHADYRKHANOV, M.K., BOLTAKS, B.I., KULIKOV, G.S., PEDYASH, E.M.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, FIZIKA I TEKHNIKA POLUPROVODNIKOV, VOL 4, NO 5, 1970, PP 873-878

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--METAL DIFFUSION, SOLUBILITY, ZINC, SILICON, FORBIDDEN ZONE, SOLID SOLUTION, COBALT, ELECTRIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1261 STEP NO--UR/0449/70/004/005/0873/0878

CIRC ACCESSION NO--AP0136669

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

2/3 024 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136669

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFUSION AND SOLUBILITY OF ZINC IN SILICON AND ITS EFFECT ON THE ELECTRICAL PROPERTIES OF SILICON WERE STUDIED. IT WAS ESTABLISHED THAT THE DIFFUSION OF ZINC IN SILICON HAS COMPLEX DISSOCIATIVE NATURE, AND THE DIFFUSION COEFFICIENT IN THE 1,100-1,300DEGREESC RANGE VARIES FROM 10 PRIME NEGATIVE7 TO 10 PRIME NEGATIVE6 CM PRIME2-SEC. THE LIFE OF ZINC AT A NODE AND AN INTERNODE OF THE SILICON LATTICE CALCULATED FROM THE RISE IN CONCENTRATION LEVEL WITH ANNEALING TIME AT 1,200DEGREESC IS 10 PRIME4 AND 10 PRIME NEGATIVE3 SEC, RESPECTIVELY. THE SOLUBILITY IS OF A RETROGRADE NATURE WITH A PEAK AT 1.5.10 PRIME NEGATIVE6 CM PRIME NEGATIVE3 AT 1,270DEGREESC. ZINC INTRODUCES THREE ACCEPTOR LEVELS IN THE FORBIDDEN ZONE OF SILICON. DURING THE PROCESS OF DECAY OF THE ZINC SILICON SOLID SOLUTION, TWO DONOR LEVELS, 0.1 PLUS OR MINUS 0.03 AND 0.4 PLUS OR MINUS 0.03 EV, OBVIOUSLY CONNECTED WITH THE INTERNODAL ZINC APPEAR. THE AUTHORS CALCULATE THE CHEMICAL POTENTIAL LEVEL OF SILICON ALLOYED WITH ZINC AND DEMONSTRATE THE POSSIBILITY OF OBTAINING THE COMPENSATED MATERIAL IN A BROAD RANGE OF CURRENT CARRIER CONCENTRATIONS. THE CONDITIONS OF OBTAINING SILICON WITH A GIVEN SPECIFIC RESISTANCE ARE CALCULATED INASMUCH AS ZINC IN SILICON IS AN ACCEPTOR AND INASMUCH AS A COMPENSATED MATERIAL CAN BE OBTAINED BY INTRODUCING ZINC INTO ELECTRONIC SILICON. THE EXPERIMENTAL DATA FROM THE ELECTRICAL MEASUREMENTS (CARRIER CONCENTRATION, CARRIER MOBILITY, SPECIFIC RESISTANCE) BEFORE AND AFTER ALLOYING THE SILICON WITH ZINC AND ALSO FOR THE CONTROL SAMPLES ANNEALED WITHOUT ZINC ARE COMPARED WITH THE CALCULATED DATA.

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CIRC ACCESSION NO--AP0136669

ABSTRACT/EXTRACT--IT IS NOTED THAT THE CONCENTRATION OF ELECTRICALLY ACTIVE ZINC ATOMS IS SIMILAR TO 3 ORDERS LESS THAN THE SOLUBILITY DETERMINED FROM RADIOACTIVE MEASUREMENTS. A SIGNIFICANT PART OF THE ZINC ATOMS APPARENTLY SETTLE IN THE DISLOCATIONS THAT OCCUR, FOR EXAMPLE, FOR COBALT IN SILICON FOR THEY ENTER INTO THE COMPOSITION OF ELECTRICALLY INACTIVE COMPLEXES. THE EXPERIMENTAL DATA COMPARE WELL WITH THE CALCULATED DATA EXCEPT FOR CONVERGED SAMPLES, AND IT IS ASSUMED THAT THESE DIVERGENCES ARE THE RESULT OF INCORRECT CALCULATIONS. FACILITY: INSTITUTE OF SEMICONDICTORS, LENINGRAD, ACADEMY OF SCIENCES USSR.

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USSR

DZHITENOV, A. K., KULIKOV, G. V.

"Recommended Values of Deformation Modulus as a Function of Moisture Content and Porosity Factor"

Tr. Turkm. Politekhn. In-ta [Works of Turkmen Polytechnical Institute], No 9, 1971, pp 82-90, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 V719 by K. V. Nikolayev).

Translation: Tables and graphs of the change in modulus of deformation of soils as a function of porosity factor and moisture content are presented. The data are produced using laboratory compression testing and field tests with loading by a circular stamp 79.5 cm in diameter. The compressive stresses during testing were from 1 to 3-4 kg/cm^2. As porosity and moisture content increased, the values of modulus decreased. Field test data for the range of change of porosity factor studied (0.6-1.0) and moisture content (0.2-0.85) are presented in a Table of values of modulus of deformation recommended for use in designing structures.

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USSR

UDC 541.15

KULIKOV, I. A., and VLADIMIROVA, M. V.

"Radiation Induced Oxidation of Fe^{++} Ions in Nitrate Solutions"

Moscow, Khimiya Vysokikh Energiy, Vol 7, No 4, Jul-Aug 73, pp 348-353

Abstract: Radiation induced oxidation of Fe^{++} has been investigated in sulfuric acid solution containing NO_3^- ions and in nitric acid solution ($[NO_3^-] = 10^{-3}$ -- 0.5 M), with a Co^{60} γ-irradiation. The yields of Fe^{3+} ions and HNO_2 molecules formed in aerated and non-aerated solutions have been determined. It was established that the oxidation of Fe^{2+} occurs in reactions with OH, HO_2 and NO_2 radicals as well as H_2+ ions and H_2O_2. An increase in the concentration of No_3^- ions in the solutions from 10^{-3} to 0.1 M leads to an increased yield in the oxidation of Fe^{2+}. A mechanism has been proposed for the radiolysis of nitrate solutions containing Fe^{++}.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UDC 616.61-002.151-02

USSR

AGAFONOV, V. I., Maj Gen Med Serv, Docent; LEV, M. I., Col Med Serv; NOSKOV, F. S., Lt Col Med Serv, Candidate of Medical Sciences; KONIKOVA, R. Ye., Candidate of Biological Sciences; YELIGULASHVILI, R. K., Candidate of Medical Sciences; GAVRILYUK, B. K., Doctor of Medical Sciences; KULIKOV, I. A., Lt Col Med Serv; YEFIMOV, L. S., Lt Col Med Serv; SERGEYCHIK, I. I., Capt Med Serv; BELYAYEVA, H. S.

"Etiological Decoding of an Outbreak of Hemorrhagic Fever With a Renal Syndrome"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 9, Sep 71, pp 46-49

Abstract: In June and July 1970, in the southern area of Khabarovskiy Kray, an outbreak of hemorrhagic fever with a renal syndrome (HFRS) occurred among workers employed on construction work and housed in a tent camp located on a hill surrounded by swampy meadows. Despite repeated rodent extermination, the camp area was infested with rodents and ticks. Relocation of the workers to a nearby village halted the outbreak. Only one of the 34 hospitalized workers died. The onset of the

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AGAFONOV, V. I., et al, Voyenno-Meditsinskiy Zhurnal, No 9, Sep 71, pp 46-49

disease was acute, and fever of 39-41°C lasted 3-15 days. Renal and cardiovascular insufficiency developed in five patients. The clinical picture was atypical, suggesting both HFRS and leptospirosis. After test for Leptospira proved negative in all patients, two types of tests for hemorrhagic fever antigens were performed: indirect hemagglutination inhibition and agglutination with fluorescent antibodies. In the indirect hemagglutination tests, sheep erythrocytes sensitized with antibodies against the 10-10 strain of hemorrhagic nephroscnephritis (HNN) were used. All tests were positive. The fluorescence tests yielded green granular fluorescence in spleen smears. It is concluded that the green granular fluorescence is specific for HNN, and that the granules represent areas of replication of the HNN virus.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UNCLASSIFIED PROCESSING DATE--27NOV70

1/2 029

TITLE--NEW CHEMICAL METHOD FOR DETERMINING THE DOSE RATE OF VARIOUS TYPES OF RADIATION -U-

AUTHOR-(02)-VLADIMIROVA, M.V., KULIKOV, I.A.

K

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(5), 429-31

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--DOSE RATE, GAMMA IRRADIATION, DOSIMETRY, ELECTRON ACCELERATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0585 STEP NO--UR/0089/70/028/005/0429/0431

CIRC ACCESSION NO--AP0137670

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 029

CIRC ACCESSION NO--AP0137670

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROPOSED USE OF 4.0M HNO SUB3 SOLN. FOR DETG. THE DOSE RATE OF VARIOUS TYPES OF RADIATION IS BASED ON THE EARLIER REPORTED RADIATION DOSE DEPENDENCE OF THE YIELD OF HNO SUB2 IN THE GAMMA RADIOLYSIS OF HNO SUB3 (M. V. VLADIMIROVA, I. A. KULIKOV, YU. I. SAVEL'EV, 1969). A PROLONGED GAMMA IRRADN. OF 2-8M HNO SUB3 SOLNS. LEADS TO THE ESTABLISHMENT OF A CONST. CONCN. OF HNO SUB2, WHICH DEPENDS ON THE CONCN. OF HNO SUB3 AND THE TEMP. THUS, THE ACCURACY OF THIS METHOD DEPENDS OF THE ACCURACY OF THE MEASUREMENTS OF HNO SUB3 CONCN. AND TEMP. THE METHOD WAS VERIFIED BY STUDYING THE DOSE DEPENDENCE OF HNO SUB2 CONCN. USING AN ELECTRON ACCELERATOR AND THE WWR REACTOR. THE USE OF THE PROPOSED HNO SUB3 DOSIMETER IS NOT RECOMMENDED FOR DOSE RATES SMALLER THAN 10 PRIME3 RADS-SEC, BECAUSE IT REQUIRES A LONG IRRADN. PERIOD. THIS DISADVANTAGE MAY BE BENEFICIAL IN THE CASE OF A PROLONGED REACTOR CYCLE. THE PROPOSED METHOD IS INDEPENDENT OF THE KIND OF RADIATION. IT IS RECOMMENDED FOR MEASURING DOSE RATES GREATER THAN 5 TIMES 10 PRIME3 RADS-SEC WITH MIN. IRRADN. TIME OF 3 HR; FOR DOSES 10 PRIME4-10 PRIME6 RADS-SEC THE IRRADN. TIME IS 2-0.5 HR. THE ACCURACY OF THE DOSIMETRY VALUES VARIES BETWEEN 10 AND 15PERCENT.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

Thermomechanical Treatment

UDC: 669.14:621.787

TUSHINSKIY, L. I., TUSHINSKAYA, V. I., TIKHOMIROVA, L. A., and [illegible], Novosibirsk Institute of Railroad Transportation Engineers

"Thermomechanical Treatment of Carbon Steel With Diffusion Transformation of Austenite"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 8, 70, pp 116-118

Abstract: This paper concerns the thermomechanical treatment of carbon steel with diffusion transformation of austenite to finely disperse pearlite. It was found that austenite deformation makes it possible to raise the austenization temperature to a level which increases both the yield point and tensile strength to 14 to 18 and 18--20 kg/mm², respectively, without reduction in plasticity. Comparison of treatment specifications shows that a lamellar structure, as opposed to a granular structure, has a higher tensile strength (by 20 kg/mm²) at somewhat higher plasticity values. Figures in the original article show the effect of the cooling rate, temperature, and extent of deformation on the mechanical properties of U8A steel subjected to high-temperature thermomechanical treatment with diffusion transformation, the mechanical properties of U8A steel with granular and lamellar structures, and the effect of austenization temperature and austenite deformation on the dimension of a troostite colony of treated U8A steel.

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41

USSR UDC 621.892.8

PANOK, K. K., TRET'YAKOV, P. P., ZUSEVA, B. S., GRIGOR'YEV, P. E., KULIKOV, I. N., GLAVATI, O. L., GORDASH, Yu. T., RABINOVICH, I. L.

"New Aviation Oils with Dipole Type Additives"

Neftepererabotka i Neftekhimiya. Resp. Mezhved. sb. [Oil Refining and Petrochemistry, Republic Interdepartmental Collection], No 5, 1971, pp 38-41, (Translated from Referativnyy Zhurnal Aviatsiyonnye i Raketnye Dvigateli, No 12, 1971, Abstract No 12.54.5, from the Resume).

Translation: The results of studies of the physical, chemical and operational properties of a new aviation oil containing a Dipole-type additive by laboratory methods, and the results of 50 hours tests of this oil in a Type EU-82T one-cylinder installation indicate that this oil is significantly superior to Type MS-20 oil without additives, presently used for piston aviation engines, and is equal to and in some respects superior to aeroshell oil W-100, a foreign type. 3 Tables; 3 Biblio. Refs.

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metallurgy

KULIKOV, I. S.

INTERNATIONAL SYMPOSIUM ON METALLURGICAL CHEMISTRY

[Article by Academician N. V. Agayev and Doctor of Technical Sciences I. S. Kulikov; Moscow, [illegible] Russian, [illegible] 41, No 12; December 1971, pp [illegible]]

An international symposium on metallurgical chemistry was held in England. Invited to participate in its work were scientists of a number of countries engaged in the study of the physical chemistry of metallurgical processes, the physics of metals, and the application of new methods of investigation in the given area.

The symposium proceeded in two stages. The first stage was held in London on 14-16 July. Over 40 reports were heard on experimental methods of determining the thermodynamic and kinetic constants of metals, alloys, and chemical compounds, the study of the structures of metallic materials, phase boundaries, phase diagrams and surveys of the application of thermodynamics and chemistry in metallurgy. Methods of determining the thermodynamic constants of substances are extremely varied: calorimetry, the method of electromotive forces, and also mass-spectrometry, which has become widespread. The use of fluorine compounds (fluorite, etc) as electrolyte has substantially expanded the possibility of applying the method of electromotive forces to determine the thermodynamic constants of chemical compounds of refractory substances. The theory of thermal dissociation was described by I. S. Kulikov (USSR). The reports showed the [illegible] of a number of concepts which have formed on the question and described the basic principles which permit calculating the dissociation of numerous chemical compounds.

The reports of K. Shubert (West Germany), N. Moxen (USA), G. Novotny (Austria), M. Hock (USA), and others, were devoted to questions about the structure of metallic substances and chemical compounds. Functional connections have been established

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR UDC: 681.325.3

ATSYUKOVSKIY, V. A., VELIKSON, Ya. M., KULIKOV, I. V.

"A Multichannel Angle-to-Code Converter"

USSR Author's Certificate No 328493, filed 3 Jul 70, published 11 Apr 72 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 73, abstract No 1B471 P)

Translation: A multichannel angle-to-code converter is proposed which contains sine-coisine pickups connected through an input commutator and paraphase amplifiers to an octant commutator. The octant commutator is connected to the input of a decoding code-to-voltage converter, to the input and output of an octant register, to one of the inputs of a comparison unit, and to one of the outputs of a distributor. The second output of the distributor is connected through a control register and the decoding code-to-voltage converter to the other input of the comparison unit. The output of the comparison unit is connected to the octant register and the control register.

To increase conversion accuracy and extend functional possibilities, the converter contains a reading characteristic module, connected to the control register, and an automatic synchronization module whose inputs are connected

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

ATSYUKOVSKIY, V. A., et al., USSR Author's Certificate No 328493

to the outputs of the paraphase amplifiers, while the output is connected to the input of the distributor. The multichannel angle-code converter is distinguished by the fact that the automatic synchronization module is made in the form of a summing amplifier, control element, and flip-flop connected in series.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

UDC 621.365.82

IGOShIN, V. I., KULIKOV, L. V., NIKITIN, A. I.

"Measuring the Velocity Constant of Chemical Reactions of Atomic Fluorine with Hydrogen and Deuterium by Laser Methods"

Kratkiye soobshch. po fiz. (Brief Communications on Physics), No 1, 1973, pp 3-9, RZh-Fizika, No 9, Sep 73, Abstract No 9D819

Translation: The shape of the oscillatory pulse of a chemical laser was used to measure the velocity constant of the reaction of atomic fluorine with hydrogen and deuterium. The chemical laser worked on a mixture of NS_3 and H_2 or D_2 and was triggered by an electrical pulse of 1 microsecond's duration at an emf of 60 kilovolts with energy up to one joule. A numerical calculation of the laser kinetics is given, and the conditions under which the primary contribution to excitation of the oscillatory levels of HF(DF) is due to the reaction of atomic fluorine with hydrogen (deuterium) are determined. The measured values of the velocity constant are in good agreement with the known values.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

UDC 612.826+612.822.3

ZLATIN, R. S. and KULIKOV, M. A., Department of the Physiology of the Diencephalon and Laboratory of Statistical Analysis and of Modeling Physiological Processes, Institute of Physiology imeni A. A. Bogomolets, Academy of Sciences Ukrainian SSR, Kiev

"Changes in Electrical Activity of Posterior Hypothalamus and Motor Cortex in the Presence of Various Pharmacological Agents"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 1, 1973, pp 16-27

Abstract: In rabbits, certain neurotropic drugs induce significant changes in the power of the electromagnetic radiation of the brain. Namely, chloral hydrate (60-100 mg/kg, rectally) reduces beta waves in the posterior hypothalamus and intensifies delta waves and reduces alpha waves in the motor cortex. Aminazine (5 mg/kg, subcutaneously) intensifies delta waves and reduces beta waves in the motor cortex. Scopolamine (0.4-0.5 mg/kg, subcutaneously) reduces beta waves and intensifies delta waves in the motor cortex. And carbacholine (0.03 mg/kg, subcutaneously) reduces delta waves and intensifies alpha waves in the posterior hypothalamus, and reduces delta and gamma waves and intensifies beta waves in the motor cortex. However, as far as the frequency spectra are concerned, the shifts induced by any one compound are much smaller and proceed in the same

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USSR

ZLATIN, R. S. and KULIKOV, M. A., Fiziologicheskiy Zhurnal SSR imeni I. M. Sechenov, Vol 59, No 1, 1973, pp 16-27

direction in both areas. It is therefore concluded that the pharmacological agents applied do not disrupt the functional correlation existing between the posterior hypothalamus and the motor cortex.

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USSR UDC: 621.375.9

GURZO, V. V., KULIKOV, M. N., and STAL'MAKHOV, V. S.

"Experimental Investigation of a Type M Electron Beam Parametric Amplifier with Distributed Coupling"

Kiev, Izvestiya VUZov SSSR--Radioelektronika, No 5, 1970, pp 642-645

Abstract: This article presents results of the experimental investigation of an M-type parametric amplifier in the decimeter range with a backward fast cyclotron wave in which the coupling and pumping components are made of sections of flat delay structures usually used in type M beam devices. A formula is found for the gain of the amplifier, and from it is derived a second relationship connecting the constant of the pumping wave propagation with the constant fields and the pumping frequency. It is found that the gain in the pumping region is proportional to the square of the delay in the pumping wave. The delay, in turn, characterizes the degree of nonuniformity in the high-frequency pumping field in the transverse direction. A defect of this particular amplifier is the comparatively high transmission loss with pumping. The author asserts, however, that methods of reducing these losses are already becoming apparent.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

1/2 028 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--TWT USING A NONUNIFORM LINE SECTION WITH TUNNEL DIODES -U-

AUTHOR-(02)-KULIKOV, S.M., POLYAKOV, I.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, VOL 15, NO 3, 1970, PP 505-511

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--TRAVELING WAVE TUBE, TUNNEL DIODE, TRAVELING WAVE AMPLIFIER, TRANSMISSION LINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/1344 STEP NO--UR/0109/70/015/003/0505/0511

CIRC ACCESSION NO--AP0110915

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UNCLASSIFIED PROCESSING DATE--02OCT70

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CIRC ACCESSION NO--AP0110915

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALTHOUGH TUNNEL DIODES HAVE A BROADER BAND THAN TUBES OR TRANSISTORS AND CAN BE USED WITH TRAVELING WAVE AMPLIFIERS FOR WAVES IN THE TENS OF GIGAHERTZ FREQUENCY RANGE, THE TRANSMITTED SIGNAL HAS THE DEFECT OF LACKING DIRECTION. AS A RESULT, THE INSTABILITY OF SUCH AMPLIFIERS IS DIFFICULT TO AVOID. THIS INSTABILITY IS THE RESULT OF THE COMPLEX CHARACTERISTIC OF THE TRANSMISSION LINE RESISTANCE AND ITS VARIATION WITH THE FREQUENCY. THIS DEFECT CAN BE AVOIDED BY USING A NONUNIFORM TRANSMISSION LINE. THEN, THE LINE CAN BE EFFECTIVELY MATCHED AT ITS TERMINALS, AND IT WILL BE STABLE FOR ANY LENGTH. THE AUTHORS PROVE THEORETICALLY THAT THIS STATEMENT IS TRUE. THEIR RESULTS SHOW GOOD AGREEMENT WITH THE EXPERIMENTAL FACTS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR UDC 621.375.4.029.6

KULIKOV, S. M., POLYAKOV, I. V.

"TWT Using a Nonuniform Line Section with Tunnel Diodes"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 3, 1970, pp 505-511

Abstract: Although tunnel diodes have a broader band than tubes or transistors and can be used with traveling wave amplifiers for waves in the tens of gigahertz frequency range, the transmitted signal has the defect of lacking direction. As a result, the instability of such amplifiers is difficult to avoid. This instability is the result of the complex characteristic of the transmission line resistance and its variation with the frequency. This defect can be avoided by using a nonuniform transmission line. Then, the line can be effectively matched at its terminals, and it will be stable for any length. The authors prove theoretically that this statement is true. Their results show good agreement with the experimental facts.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UDC 621.735.043.016.3:669.14.018.252.3

USSR

CHERNYY, YU. F., ALISTRATOV, L. I., BEREZIN, A. A., GALKIN, A. A., KOVIKO, V. S., KULIKOV, N. I., SPUSKANYUK, V. Z., and SHTORMAN, A. D.

"Industrial Introduction of Technique of Hydropressing of Tool Billets From Steels R18, R12, R9"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 8, Aug 71, pp 11-12

Abstract: Experimental investigations at Dnepropetrovsk Physicotechnical Scientific Research Institute, Academy of Sciences Ukrainian SSR, showed that the cold plastic deformation of billets of high-speed steels R18, R12, and R9 by the hydropressing method results in significant refinement and more uniform distribution of the carbide phase. Investigations of R18 steel billets following hydropressing, annealing, and heat finishing showed an increase in the mechanical properties and thermostability of the steel, while production tests of 10-mm-diameter reamers showed a 60-70 percent increase in tool durability. Hydropressing of cylindrical round-section billets from R18, R12, and R9 bars up to 30 mm in diameter has been introduced at one of the

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USSR

CHERNYY, YU. F., et al., Kuznechno-Shtampovochnoye Proizvodstvo, No 8, Aug 71, pp 11-12

Donetskaya Oblast plants. A model P479 hydraulic press is used for billet deformation. The hydropressing setup consists of a high-pressure multilayer container, rod and die with gasketing, an upper and lower plate, and a centerer and fastener. The tool billet hydropressing process provides for the preparation of initial billets, straining of the billets, and their subsequent treatment. Kh12M steel (HRC 57-59) is used for the die. The economic advisability of using the technique of high-speed steel hydropressing for the fabrication of tool billets is based mainly on the increased tool durability as a result of the improved structure and physicomechanical properties of the steel after deformation. There is a saving in high-speed steels because the billet comes as close as possible to the tool size.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--RADIOSENSITIVITY OF TENCH, TINCA TINCA L., EMBRYOS AT EARLY STAGES OF DEVELOPMENT -U-

AUTHOR--KULIKOV, N.V.

COUNTRY OF INFO--USSR

SOURCE--RADIOBIOLOGIYA; 10: 127-30, JAN-FEB 1970

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FISH, EMBRYOLOGY, RADIATION SENSITIVITY, RADIATION DOSAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1946 STEP NO--UR/0205/70/000/000/0127/0130

CIRC ACCESSION NO--AP0127347

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 023

CIRC ACCESSION NO--AP0127347

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEVERAL STAGES WITH INCREASED RADIOSENSITIVITY WERE NOTED AGAINST A BACKGROUND OF A DECREASE IN THE RADIOSENSITIVITY OF TENCH EMBRYOS DURING DEVELOPMENT. THE PRELARVAE THAT HATCHED FROM THE EGGS IRRADIATED AT A DOSE OF 250 R AT THE EARLY STAGES OF DEVELOPMENT WERE DISTINGUISHED BY AN INCREASED DEATH RATE IN THE SUBSEQUENT PERIOD OF DEVELOPMENT. IRRADIATION OF THE EMBRYOS BEFORE HATCHING FROM THE EGGS AND IMMEDIATELY AFTER HATCHING PRODUCED A RADIOPROTECTIVE EFFECT WITH RESPECT TO SUBSEQUENT IRRADIATION AT A DOSE OF 1500 R. FACILITY: INST. OF ECOLOGY OF PLANTS AND ANIMALS, SVERDLOVSK, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

KULIKOV, N.Ya.

[illegible]

MASSIVE BLOOD TRANSFUSIONS

(Article by [illegible] and [illegible], [illegible], [illegible] Zhurnal, No 6, 1972, p. 73)

Massive blood transfusions are given to those suffering from extensive bleeding and they greatly reduce the death rate. According to the data of Crosby (1956) and Sakay (1955), about 18 liters of blood are transfused for severe wounds with shock and bleeding. We analyzed the effectiveness of massive blood transfusions from hospital records. A total of 52 patients received such transfusions over a period of 10 years. Each was transfused at one time an average of 1.5 to 2 liters (maximum 4.5 liters) of blood as an emergency measure. Thirty patients received massive transfusions for traumas, bleeding and shock, 11 during surgical operations complicated by substantial bleeding, and 8 during major and protracted operations accompanied by bleeding. The transfusions were supplemented by infusions of dextran and other blood substitutes (1 to 1.5 liters).

The organization of massive blood transfusions is facilitated by the existence in the hospital of a department for blood procurement and transfusion. Due to the free donor system there is always a supply of O(I), A(II), and B(III) groups "on duty." Donors with known blood groups are registered and they can be summoned in a short time if there is an acute need for their blood.

In view of the poor condition of the patients, massive transfusions were generally carried out by phlebotomy; in 5 cases intra-arterial injection of blood was started under pressure. Note that massive direct transfusion is more difficult to do than indirect transfusion, but it is more effective. This method was used for 2 patients (500 ml each) after which the procedure was continued with banked blood. Because massive transfusions were often given to patients in very poor condition, there was need for speed, efficiency, and coordination on the part of the medical personnel. The creation of a regular blood transfusion team made up of a physician and 2 nurses was an important factor. Estimates of blood losses were based on clinical and laboratory data: the patient's general condition, consciousness/unconsciousness, arterial pressure, respiration, hemoglobin level, erythrocyte count. In some cases the hematocrit and approximate blood loss (by Van Slyke's method) were determined.

Mil Med Journal #6, 1972

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UDC 531.76/77

USSR

RYAPOLOV, V. A., KRYUKOV, L. V., KULIKOV, S. V., CHISTYAKOV, B. V., PERFIL'YEV, L. M., and OREL-KHOMYAKOV, G. A.

"A Device for Indicating the Direction of Rotation of a Stepping Motor"

USSR Author's Certificate No 363922 kl G 01 p 13/00, filed 17 Oct 70, published 21 Mar 73 (from RZh Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, abstract No 11 A 387P)

Translation: A device is proposed for indicating the direction of rotation of a stepping motor, containing a differentiating element and valves. To simplify and improve the reliability of the apparatus, one of the valve inputs is connected to each phase winding of the step motor; the other input is connected through the differentiating element to the following phase winding of the stepping motor, while the outputs of the valves are combined and connected to the output terminal. One illustration.

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DEPARTMENT OF THE ARMY
U.S. ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER
220 SEVENTH STREET NE.
CHARLOTTESVILLE, VIRGINIA 22901

DIANE

In Reply Refer to:
FSTC HT-23- 1853-72
DIA Task No. T70-23-01

Date: 3 January 1973

TRANSLATION

ENGLISH TITLE: PULSE-FREQUENCY MODULATOR

AUTHOR: S. V. Kulikov

REQUESTOR: AMSEL-WL-NG

SOURCE: Soviet Patent No. 205881

TRANSLATOR: Leo Kanner Assoc.

LANGUAGE: Russian

COUNTRY: U.S.S.R.

Approved for public release. Distribution unlimited.

KULIKOV, S.V.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

UDC: 681.325.5

KULIKOV, S. V.

"A Converter Which Changes Direct Current to Pulse Frequency"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331484, Division H, filed 7 Aug 70, published 7 Feb 72, p 180

Translation: This Author's Certificate introduces a converter which changes direct current to pulse frequency. The device contains a matching amplifier whose output is connected through a current-to-prf converter and a differentiating element to the input of a slave generator of pulses of normalized duration. The output of the pulse generator is connected to the controlling input of a switching circuit whose signal input is connected to a current stabilizer, while the output of the switching circuit is connected to an integrating capacitor. As a distinguishing feature of the patent, the speed is increased by adding a kipp oscillator, another differentiating circuit and two series circuits, each comprised of a storage capacitor connected through an additional switching circuit to the output of the corresponding voltage repeater. These series circuits are connected between the integrating capacitor and the matching amplifier, and the output

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KULIKOV, S. V., USSR Author's Certificate No 331484

of the slave pulse generator is connected to the controlling inputs of the first auxiliary switching circuit directly, and of the second auxiliary switching circuit through the additional differentiating element and the kipp oscillator.

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Oscillators and Modulators

USSR UDC: 621.376.54

KULIKOV, S. V.

"A Pulse-Duration Modulator"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 10, Apr 71, Author's Certificate No 298066, Division H, filed 27 Mar 70, published 11 Mar 71, p 191

Translation: This Author's Certificate introduces a pulse-duration modulator based on a controllable multivibrator with two switching transistors whose bases are connected to discharge current sources, and two time-mark capacitors connected to diodes. As a distinguishing feature of the patent, the modulator is designed for an increased dynamic range, a constant period of discretization, and a linear relationship between the duration of the output pulses and the input signal. To this end, the device contains two emitter followers which are cascade connected so that the inverse output of the first is connected to the input of the second, and the direct outputs of both emitter followers are connected through resistors to the common tie-points between the time-mark capacitors and the diodes. The patent also covers a modification of the proposed device which is distinguished by the fact that the duty cycle of the output pulses is increased to unity by connecting a

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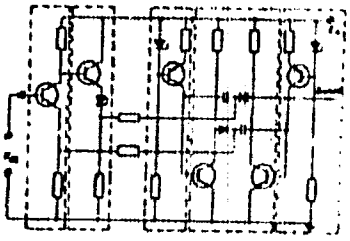
KULIKOV, S. V., USSR Author's Certificate No 298066

stabilitron to the emitter of the second transistor in the emitter follower. This stabilitron is connected in series with the emitter resistor.



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USSR

UDC 621.316.721(088.8)

KULIKOV, S.V.

"Pulse Current Regulator"

USSR Author's Certificate No 255998, Filed 31 Oct 68, published 2 Apr 70 (from RZh--Elektronika i yeye primeneniy, No 11, November 1970, Abstract No 11B501P)

Translation: The circuit of a current regulator is proposed which contains a source of reference voltage, a gating circuit [klyuchevoy skhema] using transistors, control and regulating amplifiers, an integrating capacitor and a nonlinear element using semiconductor diodes and resistors. With the object of reducing errors caused by the gating circuit using transistors, and increasing the freedom from interference, a memory capacitor and two supplementary gating circuits using transistors are provided, controlled from a common multivibrator. The capacitor of the current regulator is connected between the base of the regulating transistor and the common conductor of the circuit. The collector-emitter junction of the main and the first supplementary gating circuit are differentially connected. The collector-emitter junction of the second supplementary gating circuit is connected between the semiconductor diode of the nonlinear element and the capacitor. As a result of periodic connection and disconnection of the gating circuit, the output voltage is equal to the reference voltage with a precision up to the difference of the residual voltages of the transistors of the basic and first supplementary gating circuits. 1 ill. V.Sh.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR UDC 681.335

FULIKOV, S.V., CHISTYAKOV, B.V.

"Device for Determination of Extreme Values"

USSR Author's Certificate No. 271615, Filed 30/05/69, Published 3/09/70 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 4, 1971, Abstract No. 4B129P).

Translation: The device suggested is designed to be used in those cases in which it is necessary to determine with great accuracy the moment when an observed (measured) voltage passes through an extreme value, while the rate of change may be very low. Known devices for determination of an extreme, based on a voltage repeater with a memory condenser connected in parallel to the output through a switching circuit, have an insufficient sensitivity threshold and do not allow the moment when the voltage passes through the extreme i.e., the moment of change of sign of the derivative of the voltage to be determined accurately. The device suggested differs in that the emitter-base junction of the transistor of the output amplifier is connected in series with the memory condenser and the switching circuit; the output of the amplifier is connected through two oppositely connected diodes to the input of the derivative sign flip-flop. This allows the sensitivity threshold of the extreme

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

UDC 681.335

USSR

KULIKOV, S.V., CHISTYAKOV, B.V., USSR Author's Certificate No. 271615, Filed 30/05/69, Published 3/09/70.

sensor to be reduced and increases the accuracy of determination of the moment when the sign of the derivative of the input voltage changes. 1 fig.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR UDC: 621.374.5(088.8)

KULIKOV, S. V.

"A Device for Differentiating Square Voltage Pulses"

USSR Author's Certificate No 264540, filed 5 Sep 68, published 17 Jan 70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G232 P)

Translation: This Author's Certificate introduces a device for differentiating square voltage pulses. The device contains a transistorized amplification stage with a resistor in the collector circuit. In order to make it simpler to produce the device in the form of a thin-film or semiconductor chip, the source of pulses to be differentiated is connected in series between the voltage supply source and the resistor in the collector circuit of the transistor.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

UDC 621.376.52(088.8)

KULIKOV, S. V.

"Pulse-Amplitude Demodulator"

USSR Author's Certificate No 240738, filed 21 Dec 67, published 14 Aug 69 (from RZh-Radiotekhnika, No 2, Feb 70, Abstract No 2D93P)

Translation: A pulse amplitude detector is proposed which contains an input emitter follower, monovibrator, gate, integrating capacitor, and output emitter follower. To reduce the dynamic errors between the input integrating capacitor and the output emitter follower there are connected in series a transistorized current amplifier and a capacitor for storing the voltage proportional to the derivative of the pulse voltage, while between this capacitor and the ground buss there are connected in series an additional emitter follower and an integrating capacitor. P.U.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR K UDC 621.373.531.1(088.8)

KULIKOV, S. V., RYAPOLOV, V. A., KRYUKOV, L. V., CHISTYAKOV, B. V.

"Multivibrator with a Synchronization Circuit"

USSR Author's Certificate No 251614, Filed 27 Jun 68, Published 3 Feb 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9G255P)

Translation: This author's certificate introduces a multivibrator with a synchronization circuit containing basic and auxiliary transistors, switching and starting transistors, a stabilitron and the synchronization circuit resistors. In order to decrease the delay of the synchronized pulses, the base of one of the basic transistors is connected to the collector of the switching transistor of the synchronization circuit. The base of the latter is connected via a resistor to the collector of the starting transistor and via a semiconductor diode to the collector of the second transistor of the multivibrator the base of which is connected via the stabilitron and the resistor to a common point of the semiconductor diode and the collector of the starting transistor of the synchronization circuit.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

UDC 621.374.5(088.8)

KULIKOV, S. V., KOLOBAYEV, L. P.

"Pulse-Repetition-Rate-to-Voltage Converter"

USSR Author's Certificate No 246935, Filed 29 Apr 68, Published 2 Dec 69 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G297 P)

Translation: This author's certificate introduces a converter for converting the pulse repetition rate to voltage. The converter contains a functional current generator, a switching circuit and an output reservoir capacitor. In order to simultaneously increase the accuracy and speed in it, an integrator with a threshold device at the output is connected into the feedback circuit between the output reservoir capacitor and the switching circuit executed in the form of a commutating phase detector.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR UDC 621.373.531.1(088.8)

KOLOBAYEV, L. P., KULIKOV, S. V.

"A Controlled Multivibrator"

USSR Author's Certificate No 258379, Filed 3 Jul 66, Published 24 Apr [illegible]
RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10G178 P)

Translation: This Author's Certificate introduces a controlled multivibrator which contains two PNP transistors with a collector circuit connected to the base of each, and with additional NPN transistors connected to these collector circuits. The multivibrator also includes semiconductor isolating diodes and additional semiconductor diodes, the anode of each of these diodes being connected to the middle lead of the corresponding resistive divider, which has one lead connected to the supply bus. To raise the upper limit of the frequency range under mild self-excitation conditions, the other lead of each resistive divider is connected through a time-mark capacitor to the base of a multivibrator transistor, and the cathode of each auxiliary semiconductor diode is connected to the collector of the corresponding auxiliary transistor.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

KULIKOV, VALERIY [Candidate Of Technical Sciences]

"Early-Warning Radar"

Nauka i tekhnika, Riga, No 1(150), Jan 1973, pp 28-32

Abstract: This paper summarizes data published in Soviet and foreign "open" (unclassified) publications on early warning radars (surface radar stations). Pulse-modulated and continuous wave radars are discussed in detail. Figures, which in some instances use a number of different colored inks, show the following: 1) Block diagram of monopulse radar station with sum-and-difference comparison of signals for tracking a target in one plane; 2) Block diagram of optical locator for precising tracking which uses a helium-neon gas laser; 3) Graph of the dependence of the precision of determing a flight trajectory on the spacing of the beams of the antenna radiation pattern. Photographs are shown of three unidentified radars.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR UDC 536.24

SAGOMONYAN, A. Ya., KULIKOV, V. A., Department of Gas and Wave Dynamics, Moscow State University

"Explosion of a Spherical Charge in a Plastic Compressible Medium"

Moscow, Vestnik Moskovskogo Universiteta, Seriya I: Matematika, Mekhanika, No 1, Jan/Feb 73, pp 85-92

Abstract: It is assumed that a finite spherical charge is located in a plastic compressible homogeneous isotropic medium filling all space. At some instant t = 0 the charge, without changing volume, is instantaneously converted to a gas of high pressure and temperature. A shock wave arises in the plastic medium as a result of the explosion. It is required to find the law of propagation of this wave, and also the pressure, velocity and temperature fields. It is assumed that during loading (increasing pressure), the plastic medium changes its density in accordance with a certain law, but that during unloading (decreasing pressure) it retains the density acquired during loading. It is assumed further that a particle is subjected to maximum compression on the shock wave. Obviously, the problem has spherical symmetry. In virtue of the above-mentioned property

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SAGOMONYAN, A. Ya., KULIKOV, V. A., Vestn. Mosk. Un-ta: Ser. 1, Mat., Mekh., No 1, Jan/Feb 73, pp 85-92

of the medium, in the Lagrangian coordinate system r, t, where r is the distance of a particle of the medium from the center of the charge to the origin of motion, the density of the medium behind the shock wave is a function of the coordinate r, and is independent of time t. The parameters of motion of the medium are calculated for an explosion process with constant and variable densities behind the shock wave.

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USSR UDC: 517.948:513.88

KULIKOV, V. A.

"Some Signs of Continuity and Boundedness of V. V. Nemytskiy's Operator in Spaces With Mixed Norm"

Sb. statey po mat. Chelyabinsk. gos. ped. in-t (Collection of Articles on Mathematics. Chelyabinsk State Pedagogical Institute), 1970, vyp. 2, pp 119-131 (from RZh-Matematika, No 5, May 71, Abstract No 5B936)

Translation: Known theorems on the continuity and boundedness of Nemytskiy's operator in spaces L_p are extended to spaces with a mixed norm (RZh-Mat. 1962, 5B471). In proving the basic assumptions, the author follows the procedure of the monograph in RZh-Mat. 1957, 3310K. I Shragin.

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UDC: 531.55:521.1

USSR

KULIKOV, V. I.

"Concerning Oscillations in the Tightness of a Ballooning Filament"

V sb. Vopr. mekhaniki (Problems of Mechanics--collection of works), Moscow, Moscow University, 1971, pp 110-114 (from RZh-Mekhanika, No 5, May 72, Abstract No 5A90)

Translation: The author considers the dynamics of a balloon, i. e. a filament which moves along its own path, and at the same time rotates about a vertical axis. Modeling the balloon in the form of two imponderable straight line segments OA and AB with point mass m at point A, the author writes the condition of relative equilibrium

$$m\omega^2 = \frac{2T_0 \cos\theta}{y_0}$$

where T_0 is the initial tightness at the vertex of the balloon, θ is the angle between OA and the y-axis, the axis of rotation is the z-axis, y_0 is the maximum flight. The equations of the oscillations of point A are the following:

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KULIKOV, V. I., Vopr. mekhaniki, Moscow, Moscow University, 1971, pp 110-114

$$m\frac{d^2\eta}{dt^2}=m\omega^2\eta-T_0\sin\theta(\vartheta_2+\vartheta_1)-\cos\theta(\tau_2+\tau_1)$$

$$m\frac{d^2\zeta}{dt^2}=T_0\cos\theta(\vartheta_2-\vartheta_1)+\sin\theta(\tau_2-\tau_1)$$

where η and ζ are displacements of the point along the y- and z-axes, ϑ_1 and ϑ_2 are the changes in inclination of elements OA and AB, τ_1 and τ_2 are the changes in tightness at points O and B. The quantities ϑ_1, ϑ_2, η and ζ are found as geometric parameters, and the unknowns τ_1 and τ_2 are determined from the equations. The author then gives the scheme and an example of calculation in cases where the oscillations are caused by mutual eccentricity of a filamentary conductor and a ring, or by bending of the circular shape of a ring, or finally, by wobbling of spools. Yu. V. Yakubovskiy.

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USSR UDC: 621.317.335.3.029.64

YEPIFANTSEV, Yu. F., ZHUKOV, O. K., KLEMENT'YEV, F. M., KULIKOV, V. M., LIBERMAN, Z. A., OGURTSOV, S. I.

"Measurement of the Permittivity of $(Ba,Zn)TiO_3$ Ceramic in the 3-cm Microwave Band, and Evaluation of the Effect Which Destabilizing Factors Have on Measurement Accuracy"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmeritelnym. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 92-94 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A357)

Translation: The authors investigate the dispersion of permittivity of type $(Ba_{1-x}Zn_x)TiO_3$ ferroelectric crystals in the 3-cm frequency band using a measurement installation whose block diagram is given. Permittivity is calculated from the results of measurement of the microwave signal amplitude and phase determined when specimens of various thicknesses are introduced into the feedback circuit. The results of measurements made on three frequencies (8,900, 10,000 and 10,800 MHz) are presented for four types with

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YEPIFANTSEV, Yu. F., et al., Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1, 1970, pp 92-94

various values of x. The results show that barium titanate ceramic with 4 percent zinc has the least dispersion. The effect which destabilizing factors have on measurement precision is examined. Three illustrations. E. L.

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UNCLASSIFIED PROCESSING DATE--11DEC70

1/2 045

TITLE--ON THE CHARGE COMPOSITION OF COSMIC RAY HEAVY NUCLEI WITH Z GREATER THAN 26 -U-

AUTHOR-(03)-IVANOVA, N.S., KULIKOV, V.N., GAGARIN, I.F.

K

COUNTRY OF INFO--USSR, HUNGARY

SOURCE--INTERNATIONAL CONFERENCE ON COSMIC RAYS, 11TH, BUDAPEST, HUNGARY, AUGUST 25-SEPTEMBER 4, 1969, PROCEEDINGS. VOLUME 1 ORIGIN AND GALACTIC

DATE PUBLISHED--------70

SUBJECT AREAS--SPACE TECHNOLOGY, ATMOSPHERIC SCIENCES

TOPIC TAGS--COSMIC RAY, HEAVY NUCLEUS, EMULSION, MAGNETOSPHERE, SPACECRAFT CARRIED EQUIPMENT/(U)ZOND 5 CIRCUMLUNAR PROBE, (U)SOYUZ 5 MANNED SPACECRAFT, (U)COSMOS 213 SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605061/B04 STEP NO--HU/2506/70/029/000/0391/0394

CIRC ACCESSION NO--AT0144427

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

2/2 045 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AT0144427

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE CHARGE COMPOSITION OF HEAVY PRIMARY PARTICLES WITH Z GREATER THAN 26 IN EMULSION STACKS EXPOSED ON SATELLITES AT AN ALTITUDE OF 300 KM (COSMOS 213 AND SOYUZ 5) AS WELL AS OUTSIDE THE EARTH'S MAGNETOSPHERE (ZOND 5). THE EXPOSED STACKS MAKE IT POSSIBLE TO INVESTIGATE THE IONIZATION OF HEAVY PARTICLES WITHIN A RNGE OF ABOUT 10 CM IN EMULSION. PRELIMINARY DATA ARE PRESENTED ON THE FLUX OF NUCLEI WITH Z GREATER THAN OR EQUAL TO 26 AND ON THE RELATIVE ABUNDANCE (WITH RESPECT TO THE FE GROUP) OF HEAVY PRIMARY PARTICLES WITH Z GREATER THAN OR EQUAL TO 30, Z GREATER THAN OR EQUAL TO 40, ETC. FACILITY: AKADEMIIA NAUK SSSR, FIZIKO-TEKHNICHESKII INSTITUT, LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR UDC 669.184

YEVTUSHENKO, V. B., MIKHNEVICH, YU. F., KULIKOV, V. O., GIZATULIN, G. Z.

"Technological Process for Making, Killing, and Pouring 08Yu Nonaging Bessemer Steel"

Dnepropetrovsk, Metallurgicheskaya i gornorudnaya promyshlennost', No 2 (74), 1972, pp 16-17

Abstract: The technological processes for making, killing, and pouring 08Yu nonaging Bessemer steel are discussed. In 1966-1969, the Donetsk Scientific Research Institute of Ferrous Metallurgy and the Zhdanov Metallurgical Plant imeni Il'ich performed research to develop these processes for cold-rolled sheet 08Yu Bessemer steel for complex and supercomplex drawing. The results of these studies are discussed. The state of oxidation of the metal is affected by the intensity of blowing and ore additions for temperature correction at the end of blowing. The application of solid cast iron in the amount of 600-700 kg per melt was most effective in lowering the oxidation state of the metal in the Bessemer converter. Scavenging was carried to a carbon content of 0.06% and lower, but the scavenging intensity rarely exceeded 1.9 nm^3/min·ton of steel. Fifteen versions of introducing aluminum into the metal were investigated. The most optimal version was introduction of the primary aluminum as a monolith in a meltable packaging placed in the ladle on a false stopper

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

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YEVTUSHENKO, V. B., et al., Metallurgicheskaya i gornorudnaya promyshlennost', No 2 (74), 1972, pp 16-17

before tapping. With the optimal version of alloying the primary large surface defect of the 08Yu steel slabs was bottom splash. This defect was best controlled by improving the organization of the metal stream.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR UDC 621.735.32.016.3:621.882.31

MIT'KIN, A. N., Candidate of Technical Sciences, KULIKOV, V. P., BOGODIST, V. A., Scientific Research Institute of Technology of the Motor-Vehicle Industry, Kremenchug Motor-Vehicle Plant

"A New Process for Producing Parts Such as a Connecting Nut by the Method of Cold Heading"

Moscow, Avtomobil'naya Promyshlennost', No 12, Dec 70, pp 29-31

Abstract: In the USSR and outside of it, a constantly increasing number of parts of complex configuration is being produced by the cold heading method. Among such parts is an air-line connecting nut, which is a typical representative of an entire group of parts that are used for connecting pipelines of various purposes. The process of producing such a connecting nut by the cold heading method is described in detail. The conclusion is drawn that considerable savings of metal are made possible by the employment of this process. 2 tables, 6 figures, 2 bibliographic entries.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

USSR

BALOSHIN, O. N., VLADIMIRSKIY, V. V., DUKHOVSKOY, I. A., KISHKURNO, V. V., KRUTENKOVA, A. P., KULIKOV, V. V., NIKOLAYEVSKIY, YE. S., PETRUKHIN, V. N., RADKEVICH, I. A., and FEDORETS, V. S., Institute of Theoretical and Experimental Physics of the State Committee for the Use of Atomic Energy

"Study of the Reaction $\pi^- p \rightarrow pX^-$ at a Momentum of 3.25 GeV/c With a High Momentum Transfer"

Moscow, Yadernaya Fizika, Vol 14, No 1, Jul 71, pp 131-133

Abstract: The authors investigate the spectrum of missing masses of a proton in the reaction $\pi^- p \rightarrow pX^-$ for high transfer momentums using a track spectrometer with optical spark chambers in a magnetic field. They found the momentum of the primary π^- mesons to be 3.25 GeV/c, and they measured the differential cross section of the formation of the ρ^- meson in the range of angles $-1 \leq \cos\theta^* \leq -0.0005$, which was found to be equal to 28.2 ± 9.8 μbarn/sterad. Figure 1 shows the spectrum of the missing masses in this reaction for a momentum of the π^- meson of 3.25 GeV/c. Figure 2 shows the cross section of the creation of the ρ^- meson backwards in the reaction $\pi^- p \rightarrow p\rho^-$ as a function of the momentum of the π^- mesons. The article contains 2 figures and 5 bibliographic entries. 1/1

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

KULIKOV, VASILIY VASILYEVICH

USSR Sup Court

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--CONTACTLESS PROBE FOR CONTROLLING THE WOBBLE OF COMMUTATOR SURFACES -U-

AUTHOR-(04)-DENISOV, V.A., SHATERNIKOV, V.E., KULIKOV, V.V., LELEKOV, P.A.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROMEKHANIKA, FEB. 1970, P. 228-230

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--ELECTRONIC COMMUTATOR, ELECTRON RPOBE, TRANSISTORIZED OSCILLATOR, OSCILLOSCOPE/(U)750KHZ OSCILLATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1459 STEP NO--UR/0144/70/000/000/0228/0230

CIRC ACCESSION NO--AP0118448

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620019-8

2/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118448

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRITPION OF THE DESIGN, CIRCUIT, AND OPERATION OF A PISTOL GRIP PROBE FOR TESTING THE WOBBLE AND ASYMMETRY OF INDIVIDUAL SEGMENTS IN RING COMMUTATORS OF ELECTRIC MOTORS. THE DEVICE IS TRANSISTORIZED AND FULLY SELF CONTAINED (INCLUDING THE POWER SOURCE) EXCEPT FOR THE OSCILLOSCOPE READOUT. OPERATION INVOLVES THE USE OF A TIP MOUNTED, TOROIDAL INDUCTIVE SENSOR ELEMENT WHOSE COIL IS CONNECTED IN A TANK CIRCUIT FED BY A 750-KHZ CRYSTAL CONTROLLED OSCILLATOR. THIS TIP IS BROUGHT IN CLOSE PROXIMITY TO THE ROTATING COMMUTATOR RING WHOSE INDIVIDUAL SEGMENT SURFACES AFFECT THE TANK CIRCUIT AS THEY PASS NEAR THE TOROIDAL PICKUP ELEMENT. AS A RESULT, THE VOLTAGE IN THE TANK CIRCUIT BECOMES PULSE MODULATED, PASSES THROUGH A PROCESSING CIRCUIT, AND IS FED BY AN OUTPUT CABLE TO AN OSCILLOSCOPE.

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[redacted], TRIFONOV, A. P., Active Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"Optimal Estimate of the Energy Parameter of a Signal During Reception Against a Background of Normal Noise"

Moscow, Radiotekhnika, Vol 27, No 1, 1972, pp 10-13

Abstract: The theory of estimating an arbitrary energy parameter of a signal by the method of the maximum plausibility function was developed for optimal reception of a completely known signal and a signal with a random initial phase against a background of additive stationary normal noise with a zero mean value and a given correlation function. As an illustration of the derived expressions, the bias and the dispersion of the estimate of the "duration" τ_0 of a radio pulse with a gaussian envelope was calculated for reception against a background of white noise with given spectral density. From the expressions obtained it is obvious that for fixed signal energy and spectral noise density the bias and dispersion of the duration estimate of a gaussian radio pulse are proportional to the true value of τ_0. These results are explained by the fact that with an increase in duration the leading and trailing edges of the signal function

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KULIKOV, YE. I., et al., Radiotekhnika, Vol 27, No 1, 1972, pp 10-13

increase. Consequently, the effect of the nonstationary noise within the limits of the width of the signal function increases.

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KULIKOV, Ye. I. and TRIFONOV, A. P.

"Effect of A Priori Initial Phase Distribution in Estimating the Parameter of a Narrow-Band Signal in Noise"

Kiev, Izvestiya VUZov SSSR-Radioelektronika, Vol 13, No 2, 1970, pp 144-152

Abstract: The determination of the effect of a priori knowledge of the initial phase on the accuracy with which the parameters of the signals on a background of normal noise are optimally estimated is of practical interest in the reception of narrow-band signals in various fields of radio engineering -- communications, radar, telemetering, and the like. This article considers this effect by proposing a problem in which an additive signal and noise mixture is input to a receiver over a period of time, the signal being narrow in frequency range and the noise normal with zero average value and a definite correlation function. The assumption is made that the parameter capable of estimation belongs to a class of nonenergetic parameters, i.e., the energy of the useful signal is independent of the actual value of the parameter. Three possible cases of relatively a priori knowledge of the initial phase, in the reception of the

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