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DRITS, M. YE. et al, Razrusheniye Alyuminiyevykh Splavov Pri Rastyagivayushchikh Napryazheniyakh, Izd-vo Nauka, 1973, 215 p	p
Pag	, e
Chapter Five. Binary Alloys of Aluminum With Elements of the Transition Groups	52 30 7 30 3

7/7

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

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UDC 669.715:541.412:539.42

MER BET FET FROM DESCRIPTION (CONT.) AND THE CONTRACT OF THE C

DRITS, M. YE., KOROL'KOV, A. M., GUK, YU. P., GERASIMOVA, L. P.

"Effect of Intermetallic Phases on the Generation of Microcracks in Binary Aluminum Alloys"

V sb. Struktura i svoystva legk. splavov (Structure and Properties of Light Alloys -- collection of works), Moscov, Nauka Press, 1971, pp 91-95 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 41628)

Translation: A study was made of the effect of intermetallic phases formed in alloying aluminum with elements of the transition groups on the generation and development of microcracks at 300° under the conditions of uniaxial extension. When estimating the effect of the excess intermetallic phase formed in the alloy on the alloy properties, not only the magnitude and nature of the intermetallic particles but also the type of diagram of state by which they are crystallized has great significance. The particles of the primary intermetallic phases formed in systems crystallizing with respect to the peritectic type fracture brittly under very low stresses and serve as a source of incipient cracks. In systems crystallized by the eutectic type, the particles of the eutectic segregations are not destroyed during deformation, and the particles of the primary intermetallic phases in the transcutectic alloys are less inclined toward brittle fracture than the primary intermetallic phases in the perieutectic systems. It

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DRITS, M. YE., et al., Struktura i svoystva legk. splavov, Moscow, Nauka Press, 1971, pp 91-95

is proposed that the formation of surface defects in particles during peritectic reaction promotes brittle fracture of the primary intermetallic phases in systems crystallized by the peritectic type. Three illustrations, 1 table, and an 8-entry bibliography.

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UDC 669.715'3'721:539.43:541.412

DRITS, M. YE., GUK, YU. P., GERASIMOVA, L. P.

"Role of Iron and Nickel in AK4-1 Aluminum Alloy"

V sb. Struktura i svoystva legk. splavov (Structure and Properties of Light Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 78-81 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 41637)

Translation: A study was made of the effect of the number and shape of the particles of the Al, FeNi intermetallide compounds on the mechanical properties at room temperature and the stress-rupture strength at 300° of the primary alloy Al-2.2% Cu-1.6% Ng. The disperse particles of the Al₉FeNi phase do not in practice lower the stress-rupture strength of the alloy and essentially have no effect on its mechanical properties. The method of high temperature metallography at 300° under the conditions of uniaxial extension was used to establish that the particles of the Al₉FeNi phase block the spread of the rough slip bands in the crystal, they complicate merging of the incipient cracks into main cracks, and, at the same time, increase the time from the occurrence of the incipient cracks to total destruction of the alloy containing particles of the Al₉FeNi phase by comparison with the alloy not containing the indicated phase. The Fe and Ni forming the disperse particles of the Al₉FeNi phase in the AK4-1 1/2

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DRITS, M. YE., et al., <u>Struktura, i svoystva legk. splavov</u>, Moscow, Mauka Press, 1971, pp 78-81

alloy do not reduce the strength characteristics of the alloy, but increase its resistance to the process of development and spread of the cracks. 3 illustrations and a 4-entry bibliography.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

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USSR

UDC 621.396.662

TARAN, V. A., LISNENKO, YU. P., GUKASOV, V. G.

"Device for Automatic Tuning of Standardized Modules of Radiotechnical Devices with Respect to Frequency Characteristic"

Metody razrab. radioelektron. apparatury. Materialy Seminara. Sb. 2 (Methods of Development of Radio Electronic Equipment. Materials of the Seminar. Collection 2), Moscow, 1970, pp 43-51 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D28)

Translation: It is noted that the accuracy of automatic tuning can be increased by using the minimum mean square error of the frequency characteristic throughout the entire continuous channel range as the tuning criterion. A schematic which realizes this principle is presented. This schematic belongs to the class of extremal automatic control systems. The bibliography has five entries.

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CIA-RDP86-00513R002201030002-1 "APPROVED FOR RELEASE: 09/01/2001

UDC: 535.651 ussr ·

GUKASOV, V. R., KARABEGOV, M. A., MAILOV, Yu. G., MILYUKOV, L. Ya., PASHKINA, M. N.

"Some Analytic Capabilities of the SFK-601 Spectrophotometer"

Optich, i Titrometrich, Analizatory Zhidk, Sred [Optical and Titrometric Analyzers for Liquid Media], Reports of All Union Conference, 1971, Part 1, Tbilisi, 1971, pp 20-24 (translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 2, 1972, Abstract No 2.32.1090 by V. S. Krasnova)

Translation: A functional diagram and results of experimental determinations of characteristics of the SFK-601 spectrophotometer (spectrocolorimeter), developed by the Special Design Bureau AP [Expansion unknown - tr] are presented. The SKF-601 is produced in a modular version using a basic monochromator unit with a modulator. The interchangeable light sources are attached to one side of the base unit, the attachments for performance of various measurements to the other side: absorptiometry, turbidimetry, nephelometry with a goniometric device and fluoremetry. The operating principle of the device is based on measurement of the difference between 2 modulated light beams passing through cuvettes with the tested and comparison fluids, then going on to 1 light receiver. The energy of the light streams is converted to electrical signals, the difference of which after amplification is recorded by 1/2

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UDC: 535.651

GUKASOV, V. R., KARABEGOV, M. A., MAILOV, Yu. G., MILYUKOV, L. Ya., PASHKINA, M. N., Optich. i Titrometrich. Analizatory Zhidk. Sred [Optical and Titrometric Analyzers for Liquid Media], Reports of All Union Conference, 1971, Part 1, Tbilisis, 1971, pp 20-24 (translated from Referativnyy Zhurnal Metrologiya i Izmerital'naya Tekhnika, No 2, 1972, Abstract No 2.32.1090 by V. S. Krasnova)

a microameter. The results of investigation of the operating characteristics of the SKF-601 in various operating modes has shown that the error is not over 1 %, nonlinearity of calibrated graphs 1-2%. The reproducibility of indications is 1% of the scale length of the device. I figure

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

UDC 577-3

GUKASYAN, A. B., RATNIKOVA, N. V., and IVANOV, V. V., Forest and Wood Pulp Institute, Siberian Department, Academy of Sciences USSR, Krasnoyarsk

"Nuclear Spin Relaxation Studies of the Molecular Interactions Between the Organic Lattice and Adsorbed Water in Bacillus thuringiensis Spores"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 4, 1973, pp 599-602

Abstract: Studies were conducted on the effects of temperature on the state of water adsorbed to the organic lattice in the spores of Bacillus thuringiensis, through the determination of the rotational and translational proton relaxation times. The results revealed both weakly and strongly bound water molecules, and that there is exchange between the two phases. The former molecules diffuse through the lattice with an energy of activation of 2 kcal/mole, indicating virtually no interaction with the organic lattice. Bound water exists in a state different from that of ice structure; its structure is highly distorted and a number of the bonds are broken. The latter fact apparently is responsible for the exchange of the water molecules between the two phases. Since the proton-to-proton distances in the cavities were letermined to be 7 Å, the adsorption sites consisted of carbonyl groups and 7 Å may be regarded as the minimum dimension of the lattice cavities.

Acc. Nr:

AP0043922

Ref. Code: UR 0016

PRIMARY SOURCE:

Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 2, pp /00-104

EPIDEMIOLOGICAL OBSERVATIONS OVER REINFECTION OF DIPHTHERIA CARRIERS. REPORT IX

V. I. Trifonov, L. A. Favorova, L. A. Gukasyan

It was demonstrated in this work that, along with undoubtful cases of reinfection (with diphtheria bacilli of other types) there may occur a repeated infection with the causative agents of the same type (in 6.1% of the cases). The possibility of repeated infection primarily depended on the presence in the collective body of carriers of corresponding types of diphtheria bacilli. Conditions for reinfection failed to differ from conditions of infection, and the course of reinfection — from the course of previous carrier state. The duration of reinfection course directly depended on the number of diptheria bacilli in the nasopharynx and on the extent of its affection.

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USSR USS: 621.705.502

VAVILOV, V. S., GUTABYAH, H. A., MONGROVA, Ye. A., end HILYUTES, Yu. V.

"Ionic Insertion of Antimony into Diamonda"

Leningrad, Fizika i tekhnika poluprovodnikov, No 12, 1972, pp 2004-2391

Abstract: In the experiments described in this paper, ions of an serie, antimony, and bismuth were introduced into discount. The method of an earlier paper (V. S. Vavilov, etc.), PTV, A. No. 1977, in which phosphorus ions were introduced into a dismons typer with netype consuctivity, wer followed. Since ions like these uses in the experiments of the passent paper have high access, the consultation of radiation defects created in the introduction product in high, and even plicit restrict doson result in regulational at the layer during amorbing. For that remove, the introduction traces took place of high temperature levels, as an ECDA C. Curved are given for the flacturing conductivity of excitation and the thickness of the amoraling temperature and the thickness of the tracted layer. Reproductions of electronouses of the irradiates diamond surfaces for specimens receiving various of the irradiates diamond surfaces for specimens receiving various

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USSR USSR UBC: 641,319,592

VAVIRAV, V. S., et al. Pisika i tekhnika pokuyrovodnikav, Na kS., 1972, pp 2384-2591

dosages are shown: they indicate that higher doses of Americation lead to destruction of the crystal lattice while camerline restored the crystallinity. It is noted that the electromograph were taken and interpreted by R. I. Macarova of the Insultate of Thypical Chemistry, USUR Leademy of Delences. Others eredited with applicating the authors are b. M. Vul and V. M. Vinogradov for their contacts and discussions, V. V. Arusnopeviney for his conductate utility in invertibility, and V. A. Limpsove and I. A. Macarova at Perpreparing the specimens.

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UDC 537.311.33

VAVILOV, V. S., GUMASYAH W., GUSEVA, M. I., KONOROVA, Ye. A., and SERCIYENHO, V. F.

"Electron-Hole Junction in a Diamond Obtained Through the Infiltration of Boron and Fhosphorus Ions"

Moscow, Doklady Akademii nauk SSSR, No. 4, vol. 200, 1971, pp 821-824

Abstract: The results are given of experiments performed to establish a p-n junction in diamonds by the ion impurity method. Boron was used as the acceptor impurity and phosphorus as the donor. The reasons for this choice were that, as one of the elements of the V group in the Hendeleyev table of elements and consequently as a "natural" donor, phosphorus has the greatest amount of interest; and that, on the basis of the graph of the arrealing of layers infiltrated by phosphorus, it can be assumed that a greater number of active denor centers can be obtained with the same dosage of phosphorus doping than can be obtained with such interstitial atoms as lithium and carbon. Curves are plotted for the voltampere characteristic of the junction and for the photovoltage of the junction as a function of the excitation light wavelength. The authors conclude that they have proved the possibility of obtaining p-n junctions in diamends, and express their gratitude to E. H. Yul,

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VAVILOV, V. S., et al, <u>Doklady Akademii nauk SBSR</u>, No. 4, vol. 200, 1971, pp 821-824

Corresponding Member of the USSR Academy of Sciences, for his support of the work, to V. M. Gusev for his assistance with the infiltration experiments, and to Yu. A. Kuznetsov and Yu. A. Salikov for their help with the measurements. The authors are associated with the Lebedev Physics Institute, USSR Academy of Sciences, Moscow.

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1/2 006 UNCLASSIFIED PROCESSING DATE--20NOV70 TITLE--DATA ON ANALYSES OF STANDARD GEOCHRONOLOGICAL SAMPLES -U-

AUTHOR-(05)-AFANASYEV, G.D., BRANDT, S.B., BAGDASARYAN, G.P., GORGKHOV.

I.M., GUKASYAN. R.KH.

CCUNTRY OF INFO--USSR

SUURCE--IZV. AKAU. NAUK SSSR, SER. GEOL. 1970, (4), 104-11

GATE PURL ISHER-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GECCHRONOLUGY, POTASSIUM ARGON DATING, LEAD ISOTOPE, ABSOLUTE AGE, EARTH CRUST AGE

CONTROL MARKING-NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3000/0411

STEP NO--UR/0011/70/000/004/0104/0111

CIRC ACCESSION NO--APO13/502 UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

UNCLASSIFIED PROCESSING DATE--20MGV7C

ABSTRACT/EXTRACT-- (U) GP-0- ABSTRACT. DATA ARE GIVEN ON ANAL. GP GEGCHREALL. STOS. OF THE SOVIET UNION FOR K-AR AND RE-SR METHODS AND SEVERAL MINERALS OF PRECAMBRIAN PEGMATITE USES AS STO. FOR THE PE ISOTOPIC PETHOD OF ARS. AGE DETN. THEY SHOWED A GOOD AGRESMENT WITH CONTREL ARAL. MADE IN VARIOUS LABS. OF THE U.S.S.R. AND BY THE LAB. AT BERN. SWITZERLAND. THE RESULTS OF STUDY OF GEOCHRONGL. STO. BY VALUOUS METHODS INDICATE THAT THE VALUES OF CONSTS. OF PRIME40 K AND PRIMEST HE DECAY APPROVED BY 13 SESSIONS OF THE CUMMISSION ON ABS. AGE DEFM. IFOR LAMBLAK EQUALS 0.0557 TIMES 10 PRIME NEGATIVES PER YR AND LAMBOABETA EQUALS 0.472 TIMES 10 PRIME NEGATIVES PER YR; FOR R3 LAMEDABETA EQUALS 1.39 TIMES 10 PRIME MEGATIVELL PER YR), SHUULO SE USED IN PRACTICAL WORK UNTIL MORE CERTAIN VALUES FOR THESE CONSTS. ARE DETD. EVERY WORK ON THE ABS. AGE GETN. SHOULD BE ACCOMPANIED BY PRIMARY ANAL. CATA ON THE CONTENT OF PARENTAL AND DEXIVATED DECOMPN. PRODUCTS AND BY THE VALUES OF CONSTS. USED DURING AGE CALCH. GEOL. KUD. MESTOROZHO., PETROGR., MINER. GEGKHIM., MOSCOW, USSK.

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UDC: 536.4+532.51

GUKHMAN, A. A. and ZAYTSEV, A. A.

"Self-Modeling Variables, II"

Moscow, Teplofizika Vysokikh Temperatur, Vol. 8, No. 4, 1970, pp 847-855

Abstract: This article is the second part of a series begun in Vol. 8, No. 1, 1970, of the journal named above and deals with several problems which can be transformed only—into partially self-modeling form. As an example, the authors consider the problem of heat exchange during boiling in a large space, a situation for which there is as yet no sufficiently developed physical model for use in its analysis. They examine several approaches to the solution of this problem which, they assert, is widely being considered in the Soviet Union. They also deal with the problem of viscous, incompressible liquid flow along a tube of circular cross section on the rim of a disc and show how the method of characteristic scales can be used to simplify the initial system of equations.

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USSR

UDC 619:616.981.42-084:636.32/.38



TRILENKO, P. A., Professor, FISHBEYN, V. Ya., Candidate of Veterinary Sciences, Leningrad Veterinary Institute, BALANDIN, F. G., Chief Veterinary Surgeon of Veterinary Division, GUKOV, A. S., Chief Veterinary Surgeon, and FOMENKO, T. V., Veterinary Surgeon of Oblast Veterinary Laboratory, Volgogradskaya Oblast

"An Experiment in Sanitation Among Flocks of Sheep for the Prevention of Brucellosis"

Moscow, Veterinariya, No 11, 1971, pp 54-55

Abstract: Because brucellosis vaccination with strain 19 produces low immunity in sheep and the antibodies developed cannot be differentiated from those produced during natural brucellosis, an experiment with live nonagglutinating vaccine from strain Br. melitensis K-24 was conducted in a sovkhoz over a period of 7 years. It was established that sheep which are brucellosis carriers but do not react in tests with standard antigens, may, after vaccination with strain K-24, have agglutinins in their blood and react to the standard antigens, owing to provocation of the latent infection by the vaccinal culture. Thus, vaccine from this strain can help clear a flock of hidden brucellosis carriers, at the same time promoting greater resistance to infection among the rest of the flock. Animals reacting allergically need not be removed, as the 1/2

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TRILENKO, P. A., et al., Veterinariya, No 11, 1971, pp 54-55

K-24 vaccine also produces an allergic reorganization. As a result of systematic vaccination, isolation, and/or removal of reactive animals, coupled with other preventive measures, at the end of the experiment in 1969, an absence of brucellosis-caused abortions, practical absence of serologically reactive sheep, and marked decrease of postvaccination allergy were recorded.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

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USSR

ALAD'YEV, I. T., VOSKRESENSKIY, K. D., GUKOV, G. P., SAPEROV, YE. V., FARDZINOV, V. K.

"Device for Extracting Geothermal Energy"

USSR Author's Certificate No 322084 (from Otkrytiya, Izobreteniya, Promyshlennyve obravtsy, Tovarnyve znaki (Discoveries, Inventions, Industrial Models, Trademarks), No 43, 1973, page 213)

Translation: (1) This device for extracting geothermal energy from hot rock crushed, for example, by an underground nuclear explosion and containing the basic drill stem and open-bottom working casing set to a flooded horizon is distinguished by the fact that in order to increase the reliability it reduced the time for putting the unit into operation, the operating column is made perforated above the lower mark of the stem and it is equipped in the perforated section with discharge channels, but inside the operating column below the perforated section a heat exchanger has been installed for tapping the geothermal heat.

(2) This is a device according to Item I distinguished by the fact that the operating stem is executed with perforations in the lower section.

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UBSR UDC 575.576.8

GOL'DEARS, D. M., CHETCHIL, L. S., GOL'DECING, G. I., AKUTOVA, N. S., and GUKOVA, L. A., Institute of General Genetics, Academy of Sciences USSA, Moscow

"Some Proporties of the EPAI [Influence of the Afteroffect of Hitrogen Mustard] Depression Factor Produced by Male Strains of Escherichia Coli K-12"

Moscow, Generika, Vol 6, No 10, Oct 70, pp 107-114

Abstract: Emperiments were conducted to determine whether the inhibition factor affects macromolecular are thoses in FT cells of E. celi, how the factor alters the recombination frequency during conjugation of Hfr x FT, transduction, and the transfer effectiveness of one RTF episone. New data are presented which characterize the ability of fertile strains of E. celi to produce the factor in a medium. It was also established that isolated F-fibers of male strains, which possibly exist in active filtrates of such strains, cannot inhibit EPAI. It was found that the factor causes partial inhibition of the synthesis of descryribonucleic acid in healthy FT cells on the no effect on the synthesis of protein and ribonucleic acid. The factor contributes to the formation of a state of competence of FT cells during conjugation. Removal of the factor from the mixture does not oring about a reduction in the yield of recombinate if recipient strains of type uvrouse.

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UDC 632.95

BEZOBRAZOV, Yu. N., BRYSOVA, V. P., and CUKOVA, R. A.

"New Fungicides -- Derivatives of Dithiocarbamic Acid"

"Zh. Organ. Khimii" (Hournal of Organic Chemistry, Vol 7, No 11, 1971; pp 2282-2285) (Translation from Referativnyy Zhurnal Khimiya, No 8, Moscow, 1972, No 8 N607)

Translation: Active fungicides of the general formula ROC(0)-SC(S)NR'R" (I) (R = alkyl, naphthyl, aryl, aralkyl; R'=alkyl, CH2CH2CN; R"=H, or alkyl are produced by reaction of the sodium salts of derivatives of dithiocarbamic acid with chlorocarbonates. To 122.5 gm iso-ProCocl in 80 gm acetone is added a 40% aqueous solution of 143 gm of NaSC(S)N(Me)2 at 10-15°. At the same temperature, the mixture is stirred for 40 minutes, filtered, the residue washed with water until it gives a negative reaction to Cl⁻, and dried at 30°. The yield was 192 gm of (I) (R = iso-Pr, R' = R" = Me), mp 61-2° (ether). Also produced were I (shown are R, R', R", yield in %, mp in °C): 1-C10H7, Me, H, 74, 93-4; 1-C10H7, Me, Me, 98.5, 63-4; 1-C10H7, Et, Et, 94.5, 95-6; 1-C10H7, CH2CH2CN, CH2, CH2CN, 77.2, 121-2; 2-C10H7, Me, Me, 97.2, 105-6; m-C6H4Me, Me, H, 58.5, 36-7; m-C6H4Me, Me, Me, 85.3, 71-2; m-C6H4Me, Et, Et, 95.6, 36-7; p-C6H4Me, Me, H, 78, 84-5; p-C6H4Me, Me, Me, Me, 1/2

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BEZOBRAZOV, Yu. N., et al., "Zh. Organ. Khimii" (Journal of Organic Chemistry, Vol 7, No 11, 1971; pp 2282-2285) (Translation from Referativnyy Zhurnal Khimiya, No 8, Moscow, 1972, No 8 N607)

86.1, 104-5; $p-C_6H_4Me$, Et, Et, 84.5, 46-7; $o-C_6H_4Me$, Me, H, 58.6, 68-9; $0-C_6H_4Me$, Me, Me, Me, 90, 62-3; $o-C_6H_4Me$, Et, Et, 92.2, 56-7; $p-C_1C_6H_4CH_2$, Me, Me, 78.6, 52-52.5; Me, Me, H, 73, 30-1; Me, Me, Me, 83.3, 7-8.5; Me, Et, Et, 85.3, 18-9; 2.4, $5-C_13C_6H_2$, Me, Me, 76.2, 10-3; 2.4, $6-C_13C_6H_2$, Me, Me, 75.3, 94-5; $3.4-C_12C_6H_3CH_2$, Me, Me, 92.5, 84-5; Me, CH_2CH_2CN , H, 67.7, 67-8; CH_2C1 , CH_2CH_2CN , H, 32, 87.5-88.5; iso-Pr, Et, Et, 46.7, 90-1; Bu, Me, Me, 95.1, 25-7; sec-Bu, Me, Me, 95.8, 13.5-14.5; Ph, Me, Me, 92, 99-100; C_6C_15 , Me, Me, 43.6, 120 (variable); $o-C_6H_4NO_2$, Me, Me, 93.6, 79-80; PhCH₂, Me, Me, 53.4, 65-6.

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Pesticides

USSR

WDC 547.496.2

BEZOBRAZOV, YU. N., BRYSOVA, V. P., and GUKOVA, R. A.

"Novel Fungicides - Derivatives of Dithiocarbamic Acid"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 11, Nov 71, pp 2282-2285

Abstract: Derivatives of dialkyldithiocarbamic acid -- alkyl(aryl)-hydro-xycarbonyldithiocarbamates were synthesized. These products exhibit fungicidal activity. To 122.5 g isopropylchlorocarbonate in 80 g acetone, 143 g of a 40% aqueous suspension of sodium dimethyldithiocarbamate is added gradually with vigorous stirring at 10-15°. Then the reaction mass is stirred for 40 min at the same temperature. The yellow solid which precipitates is washed with water until a negative reaction for chloride ions is obtained, and then dried at 30°. The yield of isopropoxycarbonyl-N,N-dimethyldithiocarbamate, m.p. 61-62° is 92%. Other derivatives were synthesized in an analogous manner. The fungicidal and bactericidal activity exhibited by these compounds is accompanied by low toxicity towards warm-blooded animals.

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USSR

UDC: 539.3

YEROFEYEV, N. K., MARCHENKO, M. K., GUKOVA, T. Ye.

"Study of Unevenness of Distribution of Deformations in Tensometric Plate"

Vibratsion. Tekhnika [Vibration Equipment -- Collection of Works], Moscow, 1972, pp 166-170 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel naya Tekhnika, No 3, 1973, Abstract No 3.32.375), by Ye. V. K.

Translation: An expression is produced allowing calculation of deformation for any point on a plate with dimensions a, b. The results of calculations performed by computer are used to construct graphs of the dependence of deformation of an element of the plate on its position and the ratio of plate dimensions b/a. It is shown that with a ratio of sides of the plate b/a = 0.02, the unevenness of deformation does not exceed 110%. Consequently, if the permissible unevenness of stress is on the order of 10%, the ratio of produced is applicable to elastic plates made of any material which follows look's rule and is practically independent of the modulus of elasticity.

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	GUL"	Valenti	n Yevgen	yevich						
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		Approved for public release. Distribution unlimited.	NOTICE The contents of this publication have been translated as presented in the occasional teat. No attempt has been made to verify the accuracy of any statement contained herein. This to expedite the discrimination of information.	Translated for FSTC by Leo Kannor Absociates, Radwood City, CA 94065	"Klimiya" Public	Valentin Yavganiyeyish Gul'	Struktura i Pro		TECHNICA	
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1/2 045 UNCLASSIFIED PROCESSING DATE--04DEC70 TITLE--EFFECT OF MICFORHEOLOGICAL PROCESSES ON THE ADHESION OF COMPOSITE FILM MATERIALS -U-AUTHOR-(03)-GUL, V.YF., GENEL, S.V., FOMINA, L.L.

COUNTRY OF INFO--USSR

SDURCE--MEKH. POLIM. 1970, 6(2), 203-8

DATE PUBLISHED----70

SUBJECT AREAS -- MATERIALS

TOPIC TAGS--ADHESION, POLYETHYLENE, MICROPHOTOGRAPHY, ELECTRON MICROSCOPY, COMPOSITE MATERIAL, POLYMER BINDER, PLASTIC FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY FICHE NO---FD70/605012/E07 STEP NO--UR/0374/70/006/002/0203/0208

CIRC ACCESSION NO--APO140313

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70 CIRC ACCESSION NO--APO140313

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS WAS STUDIED OF BONDING CELLOPHANE (I) WITH POLYETHYLENE (II) UNDER PRESSURE, AS DURING CALENDERING. THE INCREASE OF PRESSURE AND TEMP. DECREASED THE APPARENT VISCOSITY OF II, WHICH PENETRATED THE FISSURES AND PORES OF I. THE RATE OF PORE FILLING DECREASED WITH TIME DUE TO THE INCREASING PRESSURE DIFFERENTIAL. THE PROCESS WAS TREATED THEORETICALLY. ELECTRON MICROSCOPE PHOTOGRAPHS OF I AND II SURFACES, SEPO. AFTER SOME INTERPENETRATION TOOK PLACE, ARE SHOWN. FACILITY: MOSK. TEKHNOL. INST. MYAS. MOLOCH. PROM., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

1/2 022 UNCLASSIFIED PROCESSING DATE--230CT70 TITLE--DETERMINATION OF A MODIFER USED IN PRODUCING CELLOPHANE POLYETHYLENE FILM OF THE PTS 2 BRAND -U-AUTHOR-(04)-POSTRIGAN, M.V., ISHEVSKIY, G.M., DUBOV, O.YE., GUL, V.YE.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 168-9

DATE PUBLISHED----70

SUBJECT AREAS--MATERIALS, BIOLOGICAL AND MEDICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--POLYETHYLENE, PLASTIC FILM, MELAMINE RESIN, FOOD CONTAINER, ADHESION, SPECIALIZED COATING, PACKAGING MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1997/1020

STEP NO--UR/0322/70/000/001/0168/0169

CIRC ACCESSION NO--ATOL19837

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

2/2 022 UNCLASSIFIED PROCESSING DATE--230CT7C CIRC ACCESSION NO--AT0119887 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KJELDAHL N DETN. OF PTS 2 FILMS, MELAMINE FORMALDEHYDE RESIN (I) AND PTS 2 FILMS COATED WITH I PERMITTED DETN. OF THE AMT. OF I USED IN COATING WITH SIMILAR TO 10PERCENT ACCURACY. SUCH COATINGS IMPROVE THE ADHESION OF PTS 2 TO FRESH MEAT, FISH, ETC. AND THUS IMPROVED THE MOISTURE RETENTION BY THESE PRODUCTS WRAPPED IN THE COATED FILMS. FACILITY: MOSK. TEKHNOL. INST.

MYAS. MOLOCH. PROM., MOSXOW, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--160CT70 TITLE--MECHANISM OF THE FORMATION OF LATEX FILMS FROM VINYLIDENE CHLORIDE COPOLYMERS AT ROOM TEMPERATURE -U-

AUTHOR-(05)-GUL, V.E., DONTSOVA, E.P., SNEZHKO, A.G., ROSSINA, T.B., KISELEV, M.R.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3), 671-6

DATE PUBLISHED----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LATEX, VINYLIDENE RESIN, VINYL CHLORIDE, COPOLYMER, PHASE TRANSITION, VISCOELASTICITY, POLYMER STRUCTURE, PLASTIC FILM, PERMEABILITY MEASUREMENT/(U) YIKH65 VINYL CHLORIDE CLPOLYMER

CONTROL MARKING--NO RESTRICTIONS

DUCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1992/0310

STEP NO--UR/0459//0/012/003/0671/3676

CIRC ACCESSION NO--APOLLISO4

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

PROCESSING DATE--160CT70 UNCLASSIFIED 025 CIRC ACCESSION NO--APO111504 ABSTRACT. THE THERMOMECH. CURVES (PLOTS OF ABSTRACT/EXTRACT---(U) GP-0-DEFORMATION VS. TEMP.) SHOWED THAT VIKH-65 (35:65 VINYL CHLORIDE VINYLIDENE CHLORIDE COPOLYMER) FILMS HAVE A PHASE TRANSITION POINTS AT 3-8DEGREES (ONE GLASS STATE TO ANOTHER), 30-40DEGREES (GLASS TO VISCOELASTIC STATE), AND 70-80DEGREES (MELT FLOW POINT). THE KINETICS OF WATER VAPOR ADSORPTION, FILM DRYING, AND ELECTRON MICRUSCOPY SHOWED THAT EVEN IN THE FILMS FORMED FROM MELTS PREHEATED LARGER THAN OR EQUAL TO BODEGREES THE GLOBULES DO NOT COALESCE. THE PERMEABILITY OF THE FILMS DECREASES WITH THE TEMP. OF THE MELTS. THE MECH. STRONG FILMS OF LOW PERMEABILITY, PREPD. FROM MELTS PREHEATED TO 50-60DEG (EES, HAVE A DIFFUSE BOUNDARY LAYERS WHICH PENETRATE INTO THE GLOBULES. FACILITY: MOSK. TEKHNOL. INST. MYAS. MOLOCH. PROM., MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PROPERTIES OF FILLERS FOR CONDUCTING PAINT AND VARNISH COATINGS
HARDENABLE IN A MAGNETIC FILED -U-

AUTHOR-(03)-GUL, V.YE., SHCHIBRYA, N.G., MIKHAYLOV, N.I.

CGUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH. PRIMEN. 1970, (1) 49-52

DATE PUBLISHED----70

SUBJECT AREAS -- MATERIALS

TOPIC TAGS--ELECTRICAL CONDUCTIVITY, IRON POWDER, NICKEL POWDER, COPPER, TITANIUM, MAGNESIUM, EPOXY RESIN, COPOLYMER, PAINT, VARNISH, PROTECTIVE COATING, POLYVINYL CHLORIDE, CHEMICAL STABILITY

CENTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1989/0547

STEP NO--UR/0303/70/000/001/0049/0052

CIRC ACCESSION NO--APO107152

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

UNCLASSIFIED PROCESSING DATE--18SEP70 CIRC ACCESSION NO--APO107152
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. ELECTROLYTIC FE POWDER HAS 10 PRIME5-10 PRIME6 OHM CM ELEC. RESISTANCE AND CANNOT BE USED AS FILLER FOR ELECTROCUND. COATINGS. NI POWDER PRODUCED BY THE CARBONYL PROCESS HAS SIMILAR TO 10 PRIME NEGATIVE1 TO 10 PRIME NEGATIVE3 OHM CM RESISTANCE AND GLOBULAR PARTICLE SHAPE SIMILAR TO 3 MU IN DIAM. IT CONTAINS SMALL AMTS. OF CU, BE, ZR, TI, AND MG AND IT IS MORE RESISTANT TO AIR OXIDN. THAN ELECTROLYTIC NI, THE PARTICLES OF WHICH HAVE DENDRITE FORMS AND 10-30 MU DIAMS. AN EPOXY CRESOL LACQUER OR A PARTIALLY SAPOND. VINYL ACETATE VINYL CHLORIDE COPOLYMER FILLED WITH 35-40PERCENT CARBONYL NI POWDER AND HARDENED IN A MAGENTIC FIELD HAS 10 PRIME NEGATIVE3 TO 10 PRIME NEGATIVE4 OHM CM ELEC. RESISTANCE.

UNCLASSIFIED

Acc. Nr: Apro052527 Abstracting Service: CHEMICAL ABST. 5200

Ref. Code:

480459

101607v Kinetics of water absorption by vulcanizates of elastomers. Raevskii, V. G.; Zhivova, E. A.; Vasenin, R. M.; Gul, V. E.; Mosk, Tekhnol. Inst. Myas, Moloch. Prom., Moscow, USSR). Vysokomol. Soedin., Ser. A 1970, 12(1), 10-19 (Russ). The kinetics of H₂O absorption of natural rubber vulcanizates (I) (smoked sheets), contg. 35 parts SKB-35 rubber and a variable content of S, thiuram, calcined MgO, CaCO₃, TiO₂, and kaolin, was investigated in distd. H₂O at 20 ± 1°. The H₂O absorption occurred in the bulk of the I. Unlike swelling, H₂O absorption was a multistage process which obeyed Fick's law at each stage and was independent of the relaxation rate. The H₂O absorbed filled the minute cracks in the polymer, which increased in dimensions following the absorption at the 2nd and the successive stages. H₂O absorption did not involve plasticization. Thus, prepn. of materials having a high resistance to nonsolvents should employ procedures giving products of min. porosity.

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REEL/FRAME 19821170

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

PROCESSING DATE--230CT70 UNCLASSIFIED

TITLE--COLD RESISTANCE OF THERMALLY HARDENED LUN CARBON STEEL -U-

AUTHOR-(02)-GUL, YU.P., FRULKOV, A.S.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (3), 43-5

DATE PUBLISHED----70

SUBJECT AREAS -- MATERIALS

TOPIC TAGS--LOW CARBON STEEL, ALLOY DESIGNATION, ALLOY COMPOSITION, LOW TEMPERATURE METAL, LOW TEMPERATURE ALLOY, MATERIAL FRACTURE, CRYSTAL DISLOCATION, METAL HEAT TREATMENT, INTERNAL FRICTION/(U)A12 LOW CARBON STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1996/1716

STEP NO--UR/0129/70/000/003/0043/0045

SIPE 460ESSION NO--AP0118694

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

2/2 044 UNCLASSIFIED PROCESSING DATE--230CT70

CIRC ACCESSION NO--APOLI8694 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE STUDY WAS CARRIED OUT WITH STEEL A12 (C 0.09, MN 0.91, SI 0.28, P 0.142, S 0.165, N 0.006, CU 0.044PERCENT, AND CR AND NI TRACES). SPECIMENS, DIAM. 20 AND LENGTH 200 MW. WERE NORMALIZED AT 920DEGREES, THEN COOLED BY HOLDING IN STATIONARY WATER FOR 4-27 SEC. THE AV. COULING MATE WAS 35DEGREES-MIN. SPECIMENTS, DIAM. 1 MM, (FOR THE DEIN. OF INTEFRICTION) WERE PLACED IN A SMALE STAINLESS STEEL TUBE AND ALL PLACED INTO THE LARGER SPECIMEN AS ABOVE, SO THAT THE COOLING RATE OF WIRE SPECIMEN WAS NEARLY EXACTLY THE SAME AS THAT OF LARGER SPECIMEN CENTERS. THEREAFTER, THE INTERNAL FRICTION, IMPACT STRENGTH, HARDNESS, AND THE TEMP, OF COLD BRITTLENESS WERE DETD. THE TEMP. OF COLD BRITTLENESS AND PLASTICITY WAS CHANGING MONMONOTONICALLY WITH CHANGES IN THE LEVEL OF HARDENING. IN ALL CASES THE PLASTICITY IN THE EPACTURE WAS HIGHER THAN THAT OF NORMALIZED STEEL. INCREASED COULING PERIOD IN WATER (10-40 SEC.) CAUSED AN INCREASE OF THE HEIGHT OF THE PEAK OF INTERNAL FRICTION. DURING THERMAL HARDENING THE DEGREE OF SUPERSATH. OF K THE SOLID SOLN. WITH C. AS WELL AS THE DISLOCATION D. INCREASED. WHEN A CERTAIN C CONCN. AT DISLOCATIONS IS FEACHED, THEN FURTHER INCREASE OF DISLOCATION D. CAUSED AN INCREASE OF STEEL BRITTLENESS, SO THAT THE COLD BRITTLENESS TEMP. INCREASES AT HIGHER LEVELS OF HARDENING. THE TANGENT OF THE SLOPE OF THE INTERNAL EXICTION CURVE INCREASED INITIALLY WITH THE INCREASED PERIOD OF COOLING TW WATER. IT REACHED A MAK. AT A COOLING PERIOD OF 20 SEC. AND AT FACILITY: ONE PROPETROVSK. MET. LONGER PER 1005 IT DECREASED. INST., DUEPPOPE (ROYSK, USSE.

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USSR

UDC 621.785.797

BABICH, V. K., GUL', Yu. P., and DOLZHENKOV, I. Ye.

Deformatsionnoye Stareniye Stali (Strain Aging of Steel), Moscow, Metallurgiya,

Translation of Annotation: The features of strain aging of steel and thermally hardened rolled products of different designation are presented which in many cases predetermine the quality and reliability of such materials in operation. At the present time strain aging is used as a hardening thermomechanical treatment method for improving mechanical properties. Available information on aging and the latest achievements in this field are reported.

This book is intended for personnel of scientific research institutes and plant laboratories, technicians working in the fields of heat treatment and plastic deformation, and specialists in physical metallurgy. It may also be useful to teachers, undergraduates, and graduate students at metallurgical, machinebuilding, and polytechnical schools of higher education. 114 illustrations, 9 tables, 536 bibliographic references. Page

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BABICH, V. K., et al., Deformatsionnoye Stareniye Stali (Strain Aging	
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s welturn and High-Carbon Steels	121
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TITLE--RELATION BETWEEN DUCTILE BRITTLE TRANSITION TEMPERATURES DEFERMINED ACCORDING TO A CHANGE IN IMPACT TOUGHNESS AND THE TYPE OF FRACTURE -U-AUTHOR--GUL, YU.P. COUNTRY OF INFO--USSR SOURCE--ZAVOD. LAB. 1970 36(2) 217-20 DATE PUBLISHED---- 70 SUBJECT AREAS -- MATERIALS TOPIC TAGS--DUCTILITY, METAL BRITTLENESS, BRITTLE FRACTURE, IMPACT STRENGTH, TOUGHNESS, METAL HEAT FREATMENT, CARBON STEEL

UNCLASSIFIED

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1993/0347

STEP NO--US/0032/70/035/002/02/0217/0220

PROCESSING DATE--11SEP70

CIPC ACCESSION NO--APO113273 HMICLASSIFIED 1777711111177

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

2/2 030 UNCLASSIFIED PROCESSING DATE--115070.

CIRC ACCESSION NO--APO113273

ABSTRACT/EXTRACT--(U) GP-D- ABSTRACT. THE DIFFERENCE IN THE DUCTILE
BRITTLE TRANSITION TEMP. 95TD. BY THE IMPACT TOUGHNESS AND THE FRACTURE
BRITTLE TRANSITION TEMP. 95TD. BY THE IMPACT TOUGHNESS AND THE FRACTURE
CHAPACTFFISTICS WAS STUDIED FOR 3 VERY LOW C STEEL GRADES. THESE STEFLS
CHAPACTFFISTICS WAS STUDIED FOR 3 VERY LOW C STEEL GRADES. THE SENSITIVITIES TO COLD BRITTLENESS. THE DIFFERENCE BETWEEN THE TEMP. AT
SENSITIVITIES TO COLD BRITTLENESS. THE DIFFERENCE BRITHED, AND THE TEMP.
WHICH 50PERCENT OF THE MAX. IMPACT TOUGHNESS WAS OBTAINED, AND THE TEMP.
AT WHICH 50PERCENT OF THE FRACTURE SURFACE EXHIBITED A DUCTILE CHARACTER
AT WHICH 50PERCENT OF THE MAX. IMPACT TOUGHNESS WAS OBTAINED, AND THE TEMP.

INCREASE IN THE DUCTILE BRITTLE TRANSITION TEMP. OF SIMILAR TO
60DEGREES.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

UDC 539.171.12

BENGALI, N., GALAKHMATOVA, B. S., GULAMOV, I. R., KALACHEVA, Z. F., OMAR, M. P. and ROMANOVSKIY, Ye. A.

"Polarization of Protons as a Function of Energy during Elastic Scattering in $2^{l_1}_{Mg}$ "

Moscow, Izvestiya Akademii Nauk SSSR -- Seriya Fizicheskaya, Vol XXXV, No 8, 1971, pp 1695-1696

Abstract: The authors used the double-scattering method to measure the extent to which polarization of protons during elastic scattering in ²⁴Mg depends on energy. Their experiments were carried out for energies ranging from 5.9 to 6.5 million electron volts for 60° and 120° angles of scattering. While measuring the dependence of polarization on energy during elastic scattering, they also valuated it for the case of inelastic scattering of protons in ²⁴Mg with an excitation level of 1.37 million electron volts, borrowing some needed data from another work. They found that polarization of protons varied considerably as a function of their energy for both angles in both types of scattering. The authors emphasize that their results are merely preliminary. They are planning further experiments to obtain spectroscopic information and data on the mechanism by which polarization is initiated.

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Molecular Physics

.USSR

UDC 539.12

AZIMOV, S. A., Academician of the Uzbek SSR Academy of Sciences, GULAMOV, K. G., SVECHNIKOVA, L. N., CHERNOVA, P. L., and CHERNOV, G. M., Fhysical-Technical Institute imeni S. V. Starodubtsev, Uzbek SSR Academy of Sciences, Tashkent

"The Coherent Generation of Particles by Protons with an Energy of 50 Gev on the Nuclei of an Emulsion"

Moscow, Doklady Akademii Nauk SSSR, Vol 212, No 6, 1973, pp 1323-1325

Abstract: This article gives values of cross-sections in 1-, 3-, and 5-beam channels of proton coherent reactions with an intermediate energy of 50 GeV and traces the energy relationships of the cross-section of 3-beam channels. Inelastic coherent reactions were selected from a total of 2568 meters of primary tracks on the assumption that the longitudinal impulse transmitted to the target nucleus is less than or equal to $\frac{1}{2}$, where R_A is the radius of the

nucleus. These events thus yield a significantly stronger angular collimation of secondary particles than the pn-interactions among which they occur. Considering those events with one secondary charged particle in which the sine of the particle departure angle was greater than 0.015, values for $N_{\rm coh}$

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USSR

AZIMOV,S. A., et al., Doklady Akademii Nauk SSSR, Vol 212, No 6, 1973, pp 1323-1325

were found: $N_{coh}^{(3)} = 65 \pm 11$, $N_{coh}^{(5)} = 10 \pm 4$, $N_{coh}^{(1)} = 41 \pm 10$. Of course,

these are only lower bounds, since there are single-beam reactions among the events with a sine less than 0.015. Assuming roughly that the distribution of charged particles is the same in events with one and three particles, a value of N (1) approximately equal to 55 ± 15 is obtained. Comparison of the authors' results with those of other studies for 3-beam channels shows that the cross-section for proton coherent reactions increases significantly less rapidly than for ion reactions. This is of significant interest for verifying various theoretical models of diffraction coherent particle generation.

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1/2 012 UNCLASSIFIED PROCESSING DATE--L8SEP70
TITLE--POTENTIOMERIC ANALYSIS OF THE DYNAMICS OF SULPHIDE PHOTOOXIDATION
BY PHOTOSYNTHETIZING BACTERIA -U-

AUTHOR-(02)-GULANYAN, S.A., KURELLA, G.A.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 259-263

DATE PUBLISHED ---- 70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--POTENTIOMETER, SODIUM SULFIDE, BACTERIA, PHOTOSYNTHESIS, LEAD SULFIDE, ELECTRODE

CENTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1983/1412

STEP NO--UR/0220/70/039/002/0259/9263

CIRC ACCESSION NO--APO054275

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

2/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70 CIRC ACCESSION NOT-APOO54275
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. SULPHIDE CONTENT IN LIQUID MEDIA WAS DETERMINED WITH ELECTRODE BASED ON NATURAL PBS CRYSTAL. THE CONDITIONS FOR ELECTRODE CALIBRATION WITH SODIUM SULPHIDE SOLUTIONS WERE ESTABLISHED. NORMAL SULPHIDE FUNCTION (29 MV-PS AT ROOM TEMPERATURE) REQUIRED STATIC PH OF THE MEDIUM. THE ELECTRODE CAN BE USED FOR ESTIMATION OF SULPHIDE ACTIVITY AT PH IS GREATER THAN 5. THE AVAILABILITY AND ADVANTAGES OF THIS METHOD WERE DEMONSTRATED BY STUDYING THE KINETICS OF CHANGING ACTIVITY OF SUPHIDE SOLUTIONS DURING NA SUB2 S PHOTOOXIDATION BY THE GREEN SULPHUR BACTERIA.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--POTENTIOMERIC ANALYSIS OF THE DYNAMICS OF SULPHIDE PHOTOOXIDATION

BY PHOTOSYNTHETIZING BACTERIA -U-AUTHOR-(02)-GULANYAN, S.A., KURELLA, G.A.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 259-263

DATE PUBLISHED ---- 70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--POTENTIOMETER, SODIUM SULFIDE, BACTERIA, PHOTOSYNTHESIS, LEAD SULFIDE, ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

OCCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1983/1412

STEP NO--UR/0220/70/039/002/0259/9263

CIRC ACCESSION NO--AP0054275

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

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OIRC ACCESSION NO--APOO54275

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. SULPHIDE CONTENT IN LIQUID MEDIA
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THE KINETICS OF CHANGING ACTIVITY OF SUPHIDE SOLUTIONS DURING NA SUB2 S
PHOTOOXIDATION BY THE GREEN SULPHUR BACTERIA.

UNCLASSIFIED

2/2 006 UNCLASSIFIED PROCESSING DATE--13NOV70 CIRC ACCESSION NOT-APO124669 ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE DEFINITION OF THE LINEAR INFORMABILITY OF THE AGGREGATE OF ATTRIBUTES IS STATED. IT IS SHOWN THAT DESPITE THE FACT THAT UNDER CERTAIN CONDITIONS THE AGGREGATE OF LOW INFORMATIVE ATTRIBUTES MAY BE HIGHLY INFORMATIVE, THIS CONCLUSION IS INFAIR FOR THE CASE WHEN THE ATTRIBUTES ASSUME THE VALUE OF PLUS OF INFAIR FOR THE CASE WHEN THE LOWER AND THE UPPER ESTIMATIONS OF THE INFORMABILITY OF THE AGGREGATE OF TWO ATTRIBUTES, THE ESTIMATIONS EXPRESSED BY THE INFORMABILITY OF EACH OF THE TWO ATTRIBUTES.

UNCLASSIFIED

USSR

UDC 62-50

GUL CHUK, G. G., Kiev

"Absolute Stability Conditions of Automatic Control Systems With Many Non-linear Units"

Kiev, Avtomatyka, No 2, Mar-Apr 71, pp 3-9

Abstract: The article considers an automatic control system with many nonlinear elements. The equation for such a system can formally be written as

 $\sigma = -\chi(p)\varphi$.

In the case of a system with one nonlinear element the equation is written as

 $\sigma = -\chi(p)\,\varphi(\sigma). \tag{1}$

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USSR

GUL'CHUK, G. G., Avtomatyka, No 2, Mar-Apr 71

The question of the absolute stability of equation (1) subject to certain additional constraints on the form of the nonlinearity of φ (σ) has been frequently considered. Frequency conditions for absolute stability of equation (1) have been obtained in the case where the nonlinear function φ (σ) is monotonic or monotonic and unpaired. A previous article by the author obtained analogous criteria for the case of certain other constraints on the characteristic of the nonlinear element. The present article extends these results to systems with many nonlinear elements. The general square criterion of V. A. Yakubovich is used to obtain the conditions for absolute stability of the system.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

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USSR

UDC 621.382.002

GARBER, R.I., GVERDTSITELI, I.G., GNAP, A.K., GULDAMASHVILI, A.I., MODLIN, A.A., FEDORENKO, A.I.

"Study Of Radiation Damage Of Single Crystals Of Silicon After Doping With Boron Ions With An Energy Up To 100 Kev"

V sb. Radiats. fiz. nemot. kristallov (Radiation Physics Of Nonmetallic Crystals-Collection Of Works), Vol. 5, Part 2, Kiev, "Nauk.dumka," 1971, pp 153-138 (from RZh-Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10825)

Translation: The extent of radiation damage in the depths of a doping layer was determined by the method of layered atomization [raspyleniye] by bombardment by a beam of Ag tions with an energy of 1 kev and a current density of 10 microsmp. cm⁻² with subsequent study of the pattern of the deposits on place collectors with a central 2-mm aperture for transmission of the beam of lone. 3 ill. 7 ref. I.M.

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USSR

UDC 621.382.002

AMIRKHANCVA, I.B., GVERDTSITELI, I.G., GULDAMASHVILI, A.J., GOLDERCV, V.B., DANSAMIDZE, E.M., ZASLAVSKIY, S.A., KARPENKO, T.T.

"Doping Of Silicon By Ion Bombardment"

V sb. Redists. fiz. nemet kristallov (Redistion Physics Of Nonmetallic Crystals--Collection Of Works), Vol 5, Part 2, Kiev, "Nauk.dumka." 1971, pp 111-122 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 103436)

Translation: Doping of n-silicon with a resistivity of 0.035-150 ohm.cm was conducted by polyenergetic beams of boron ions with a current density of 10 ma.cm², and maximum energy of 300 plus or minus 0.150 kev with doses of 1.10¹⁷ -1.10¹⁷ cm². The uniformity of doping was attained by scanning and amounted to 10 percent. Annealing of the doped specimens was conducted in a vacuum at a temperature of 500-700° C during the course of 30 min. The method of studying the specimens and the results obtained are described. 7 ill. 8 ref. I.M.

1/1

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wc 669.713.7

USSR

KARNAUKHOV, YE. N., GUL'DIN, I. T., SOBOL', I. I., and USHAKOV, D. I.

"On the Selection of Optimum Electrolyte Composition for Aluminum Production"

Moscow, Tsvetnaya Metally, No 1, Jan 74, pp 35-38

Abstract: The most effective way of intensifying the production of aluminum is to change the electrolyte composition by introducing different calt additions. The electrolyte guaranteeing the lowest temperature of the process is considered optimum, as its temperature in the final analysis determines the current efficiency as well as the yield of energy and the efficiency of the electrolyzer. Factors which determine the overheating of the electrolyte and, therefore, the temperature of the process, are discussed and ways to decrease the ohmic resistance on the anode-metal section are indicated. A readily fusible electrolyte with raised electroconductivity and fluidity must be used to decrease the temperature of the process. The most effective addition is LiF; all other additions affect the properties of the cryolite-alumina melt in very different ways. The selection of optimum compositions of the multicomponent electrolyte for aluminum production must be based on experimental studies of the physico-chemical properties of melts and their industrial tests.

- 3 -

JISSR

KARNAUKHOV, YE. N., et al., Tsvetnyye Metally, No 1, Jan 74, pp 35-38

Chlorides of alkaline earth metals have the greatest effect on electroconductivity, viscosity, and fusibility of the melt. The quantity of additions of the multicomponent electrolyte must not exceed 8-10%. Eight bibliographic references.

2/2

Magnesium

USSR

UDC 669.721

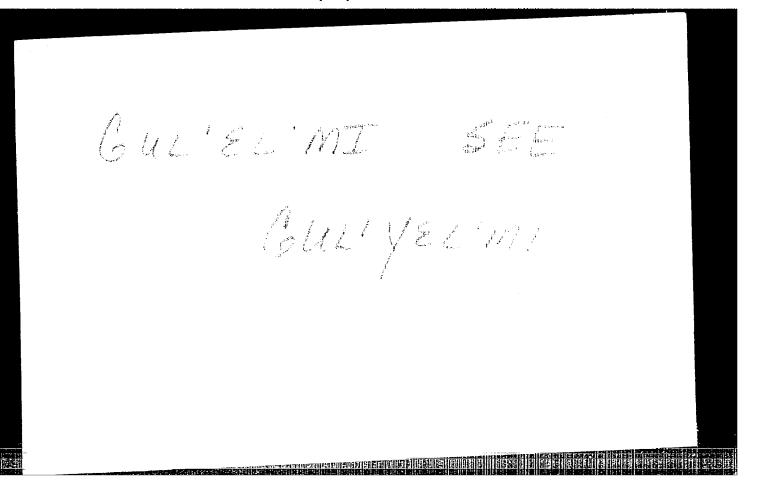
ANOSOV, V. F. and GUL'DIN, I. T.

"Fusibility and Electric Conductivity of Electrolytes for Refining Magnesium"

Moscow, Tsvetnyye metally, No 2, Feb 72, pp 42-43

Abstract: The study on the fusibility and electric conductivity of electrolytes for refining magnesium involved two systems of electrolytes comprising (wt. %) 33-53 NaCl, 22-33 KCl, 11-17 MgCl₂, 8-12 BaCl₂, comprising (wt. %) 33-53 NaCl, 22-33 KCl, 11-17 MgCl₂, 8-12 BaCl₂, 8-12 BaCl₂, for the first system and 32-50 NaCl, 21-32 KCl, 11-17 MgCl₂, 2-6 LiF, 2 CaF₂ for the second system. The optimum electrolyte 8-12 BaCl₂, 2-6 LiCl, 1 CaF₂ for the second system.

compositions with liquidus temperatures within 600-650°C show maximum specific electric conductivity from 2.65 to 2.93 ohm⁻¹ cm⁻¹ for system I and from 2.41 to 2.61 ohm⁻¹ cm⁻¹ for system II. It was found that 6% (wt.) lithium fluoride and chloride additions increase the specific conductivity of the compositions under study by 20 and 15%, respectively, as compared to identical systems without lithium salt addition. The increment of specific conductivity per 1°C for systems I and II is 0.00355 and 0.0032 (ohm⁻¹.cm⁻¹) deg, respectively. (1 table, 9 bibliographic references)



PROCESSING DATE--300C170 UNCLASSIFIED TITLE-RESULTS OF BENCH AND INDUSTRIAL TESTING OF NEW TYPES OF COATING RUBBERS FOR CONVEYER BELTS -U-AUTHOR-(04)-GORBACHEV, B.G., POLUNIN, V.T., GULENKO, G.N., FROLOV, V.I.

COUNTRY OF INFO-USSR

SGURCE--KAUCH. REZINA 1970, 29(3), 44-5

DATE PUBLISHED ----- 70

SUBJECT AREAS-MATERIALS. NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS-ELASTOMER, MINING MACHINERY, ABRASIVE RESISTANCE, RADIOACTIVE TRACER, THALLIUM ISOTOPE, SYNTHETIC RUBBER, TEST METHOD POLYISOPRENE/(U) SKO SYNTHETIC RUBBER, (U) SKI3 ISOPRENE RUBBER, (U) 8 SK SYNTHETIC RUBBER

CONTROL MARKING-NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--2000/0834

STEP NO--UR/0138/70/029/003/0044/0045

CIRC ACCESSION NO--AP0124501

UNCLASSIFIED

PROCESSING DATE-300CT70 UNCLASSIFIED 016 2/2 CIRC ACCESSION NO--APO124501 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEVERAL BRANDS OF ELASTOMER LININGS FOR CONVEYER BELTS (USED IN THE MINING INDUSTRY) WERE TESTED FOR ABRASIVE WEAR BY A RADIOACTIVE METHOD USING PRIME204 TL AS A POINT TRACER. THE EXPTL. PROCEDURE WAS DESCRIBED. BENCH AND INDUSTRIAL TESTS INDICATED THAT BSK PLUS SKD AND SKI 3 PLUS SKD ELASTOMERS HAD THE LOWEST FACILITY: MOSK. GORN. INST., MOSCOW, USSR. ABRASIVE WEAR.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

HACLASSIFIED

USSR

UDC 616.21-057:797.22

SHAPARENKO, B. A., CULER, S. A., ZHURBA, A. N., and URKIN, A. A., Chair of Otorhinolaryngology, Donetsk Medical Institute, and Donetsk Department, Central Experimental Design Bureau for Special Equipment

"Functional State of the Otorhinolaryngological Organs in Aquanauts and Scuba Divers During the 'Ikhtiandr 68' Underwater Experiment"

Moscow, Vestnik Otorinolaringologii, No 6, Nov/Dec 70, p 93

Translation: Examination of the condition of the ear, nose, and throat of four aquanauts (group 1) and 13 scuba divers (group 2) who remained under water at a depth of 13 to 15 m for a long time under conditions of high pressure (2.2 atm), high humidity (92 to 96%), and decreases in temperature revealed that during the first 24 hours the first group of subjects had a "full and stuffy" feeling in the ears. No objective changes were noted in the otorhinolaryngological organs. On the next day they developed swelling and hyperemia of the mucosa of the upper respiratory tract, retraction and cloudiness of the tympanic membranes, and lowering of the barofunction of the middle ear to the second degree. On the 3rd day they exhibited signs of infiltration of the mucosa and lymphoid tissue of the respiratory tract, hyperemia of the tympanic membranes, hoarseness, and closure of the vocal

CIA-RDP86-00513R002201030002-1 "APPROVED FOR RELEASE: 09/01/2001

USSR

SHAPARENKO, B. A., et al, Vestnik Otorinolaringologii, No 6, Nov/Dec 70, p 93

chords. On the 4th day all members of the underwater laboratory showed inflammatory changes in the mucosa and lymphoid tissue of the upper respiratory tract, infiltration of Gerlach's tonsils, and early indications of eustachitis.

During their stay under water, the 13 scuba divers (group 2) experienced the same changes in the otorhinolaryngological organs as those in group 1. The changes were indistinct, and their condition returned to normal within 2 days after the men left the water. Increased time under water resulted in the development of incipient signs of catarrhal inflammation of the organs studied.

2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

UNCLASSIFIED PROCESSING DATE--230CT70

TITLE--CATALYTIC DEHYDROCHLORINATION OF CHLOROETHANES. I. CATALYTIC

DEHYDROCHLORINATION OF 1,2,DICHLORDETHANE -UAUTHOR-(03)-GULEYA. A.A., ANTONOV, V.N., FLID, R.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 249-52

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATION, CHLOROETHANE, CATALYST ACTIVITY, ACTIVATED CARBON/(U)AG2 ACTIVATED CARBON, (U)AG3 ACTIVATED CARBON, (U)AG5 ACTIVATED CARBON, (U)AR3 ACTIVATED CARBON, (U)BAU ACTIVATED CARBON, (U)SKT ACTIVATED CARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1995/1404

STEP NO--UR/0076/70/044/301/0249/0252

CIRC ACCESSION NO--APOLI6851

UNCLASSIFIED

2/2 008
CIRC ACCESSION NO--APOII6851
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE CATALYTIC ACTIVITY OF
ACTIVATED C OF AG-2, AG-3, AG-5, AR-3, BAR, SKT TYPES WAS INVESTIGATED.
ACTIVATED C OF AG-2, AG-3, AG-5, THE KINETICS OF
THE MOST ACTIVE WAS THE AG-2 TYPE (SIMILIAR TO SBPERCENT CONVERSION OF
C SUB2 H SUB4 CL SUB2 AT 320DEGREES). THE KINETICS OF
DEHYDROCHLORINATION OF 1,2,DICHLOROETHANE ON THE GIVEN CARBONS TREATED
WITH HCL SOLN. WAS STUDIED, AND WAS A 1ST ORDER REACTION WITH RESPECT TO
WITH HCL SOLN. WAS STUDIED, AND WAS A 1ST ORDER REACTION WERE
C SUB2 H SUB4 CL SUB2. THE KINETIC PARAMETERS OF THE REACTION WERE
C SUB2 H SUB4 CL SUB2. THE KINETIC PARAMETERS OF THE REACTION WERE
DETD. THE ACTIVATION ENERGY FOR CARBONS AG-2, AG-5, AG-3, AR-3, BAU WAS
21000, 19000, 18000, 17000 AND 8000 KCAL-MOLE, RESP., AND THE COEFF. WAS
21000, 19000, 18000, 17000 AND 8000 KCAL-MOLE, RESP., AND THE COEFF. WAS
21000 TIMES 10 PRIME9, 3.16 TIMES 10 PRIME9, 4.17 TIMES 10 PRIME8, 4.08
TIMES 10 PRIME8, 1.41 TIMES 10 PRIME5.
TIMES 10 PRIME8, 1.41 TIMES 10 PRIME5.
TONKOI KHIM. TEKHNOL. IM, LOMONOSOVA, MOSCOW, USSR.

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Television

USSR

UDC: 621.317:621.397.132

GULEVICH, V. L., NATAFENKO, V. G., Taganrog Radio Engineering Institute

"A Device for Checking the Tuning Accuracy of a Coding Module and Measuring the Frequencies of Subcarriers of the Color Signal in the 'SECAM-III' System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 3, Jan 71, Author's Certificate No 291373, Division E, filed 23 May 69, published 6 Jan 71, p 161

Translation: This Author's Certificate introduces a device for checking the tuning accuracy of a coding module and measuring the frequencies of subcarriers of the color signal in the "SECAM-III" system with transmission of a vertical test bar color signal. The device contains a frequency meter, high-frequency oscillator with phase AFC, time selector, and module for shaping selector pulses with a switch for selecting the color bar to be studied. As a distinguishing feature of the patent, the accuracy of subcarrier frequency measurements is improved by connecting the time selector to the phase AFC circuit of the high-frequency oscillator through a commutator which eliminates the sign alternation of the phase.

1/1

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ELECTRON MICROSCOPIC STUDY OF RICKETTSIA PROWAZEKI (IN THE LUNGS OF ALBINC MICE) -U-

AUTHOR-(02)-GULEVSKAYA, S.A., BALAYEVA, N.M.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 3, PP 82-85
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RICKETTSIA PROWAZEKI, WHITE MOUSE, TISSUE CULTURE, CYTOPLASM, ELECTRON MICROSCOPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1990/1476

STEP NO--UR/0016/70/000/003/0082/0085

CIRC ACCESSION NO--AP0109536

UNCLASSIFIED

PROCESSING DATE--13NOV70 UNCLASSIFIED 2/2 022 CIRC ACCESSION NO--APO109536 ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE AUTHORS STUDIED THE ULTRA STRUCTURE OF RICKETTSIA PROWAZEKI BY CULTURING THEM IN THE LUNGS OF ALBINO MICE. IT WAS SHOWN THAT RICKETISIA PENETRATED INTO THE CELL BY PHAGOCYTOSIS AND AFFECTED THE ALVEDLAR EPITHELIUM ENDOTHELIUM OF CAPILLARIES AND HISTOCYTES OF THE LUNGS. RICKETTSIA COULD REPRODUCE IN THE HISTIGCYTES, BUT WERE MUSTLY SUBJECTED TO LYSIS IN THE VACUOLES. OTHER CELLS RICKETTSIA FORMED LARGE COLONIES WHICH REPLACED CELULAR RICKETTSIA IN THE COLONIES WERE HOMOGENEOUS BY SIZE AND SHAPE. ULTRASTRUCTURE OF RICKETTSIA PROWAZEKI WAS SIMILAR TO THAT OF THE MAJORITY OF GRAM NEGATIVE BACTERIA. RICKETTSIA CELL IS COVERED WITH A MICROCAPSULAR LAYER 100 TG 150 ANGSTROM IN THICKNESS. THIS LAYER LAY NEXT TO THE THREE LAYER MEMBRANE OF THE CELLULAR WALL, WHICH HAD SMOOTH CONTOURS AND A SIZE UP TO 120 ANGSTROM. THE THREE LAYER CYTOPLASMATIC MEMBRANE SURROUNDED THE CYTOPLASM. THE LATTER CONSISTED OF GRANULES WHICH WERE IDENTICAL TO RIBOSOMES BY SIZE AND SHAPE. THE NUCLEUS WAS FORMED BY DNA FILAMENTS. DATA ON APPLICATION OF VARIOUS METHODS OF FIXATION ARE PRESENTED.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

PROCESSING DATE-- L3NGV70 UNCLASSIFIED 017 2/2 CIRC ACCESSION NO--AP0109591 ABSTRACT. A COMPARATIVE STUDY OF ETHER AND ABSTRACT/EXTRACT--(U) GP-0-NONETHER SULUBLE ANTIGENS DEMONSTRATED THAT TREATMENT WITH ETHER OF SUSPENSION OF TISSUE INFECTED WITH RICKETTSIA PROWAZEKI AIDED IN EXTRACTION OF ADDITIONAL ANTIGENS INTO THE SOLUTION; THESE ANTIGENS DIFFERED FROM THE UNES IN THE SUSPENSION BY A LESSER SPECIFIVITY IN THE COMPLEMENT FIXATION REACTION WITH THE SERUM AGAINST RICKETTSIA MODSERI AND A GREATER CONTENT OF HEMAGGLUTINATING SUBSTANCES. TREATMENT THE COMPLEMENT FIXATING TITRE OF THE ANTIGEN WITH A HOMOLOGOUS IMMUNE SERUM REMAINED UNCHANGED IN THE MAJORITY OF THE EXPERIMENTS, OR PRECIPATING AND IMMUNDGENIC PROPERTIES OF ETHER AND NONETHER ANTIGENS WERE THE SAME. IT WAS FOUND BY ELECTRON MICROSCOPIC STUDIES THAT DETECTION OF A SOLUBLE ANTIGEN IN THE SUSPENSION OF RICKETTSIA IN PHYSIOLOGICAL SOLUTION WAS ACCOMPANIED BY THE CHANGES IN RICKETTSIA STRUCTURE CONSISTING OF PARTIAL DETACHMENT OF THE MICROCAPSULE FROM THE CELL. TREATMENT WITH ETHER LED TO FURTHER SEPARATION OF THE MICROCAPSULE, RUPTURE OF THE CELL WALL, CONSIDERABLE LOSS OF CELLULAR CONTENTS, LOSS OF INTACTNES OF CYTOPLASMATIC MEMBRANE AND THE APPEARANCE OF MEMBRANOUS FORMATIONS IN THE CYTOPLASM OF RICKETISIA.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

USSR



UDC 576.851.71.097.2:576.851.71.094

BALAYEVA, N. M. and GULEVSKAYA, S. A., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Soluble Rickettsia prowazeki Antigens in Suspension Before and After Treatment With Ether"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1970, pp 110-114

Abstract: Soluble R. prowazeki antigens treated with ether differed from untreated antigens because they had less serological specificity (complement-fixation reaction) and a larger content of hemagglutinating substances. The precipitating properties of the antigens were not affected by ether treatment. Electron-microscope study of soluble antigens in a rickettsial suspension in physiological saline (before treatment with ether) revealed partial separation of the microcapsule from the cell wall. Treatment of the suspension with ether resulted in complete separation of the microcapsule, rupture of the cell wall, substantial loss of the cellular contents, and appearance of membranous structures in the cytoplasm (apparently caused by the specific reaction of the microcorganism to the chemical agent).

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"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002201030002-1

Acc. Nr: AP0036831

GULEVSKAVA SA

PRIMARY SOURCE:

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Zhurnal Mikrobiologii, Epidemiologii, T

Immunobiologii, 1970, Nr 1, pp/33 -/37

A STUDY OF THE ANTIGENIC STRUCTURE OF RICKETTSIA BURNETI,
PHASES I AND II, BY THE METHOD OF ELECTRON
MICROSCOPIC IMMUNOCYTOCHEMISTRY

A. A. Avakyan, S. M. Kulagin, R. I. Kudelina, S. A. Gulevskaya, V. M. Kushnarev

The authors carried out investigations for localization of the antigens in Rickettsia burneti, phases I and II, with the aid of ferritin-labeled gamma-globulins obtained from the early and elate sers. There were revealed differences in the character of adsorption of minute gamma-globulins pointing to superficial and deep localization of antigenic substances of phases I and II. In rickettsia of phase II there was noted the presence of two antigenic determinants which reacted with both phasic components.

D.W.

6

REEL/FRAME

USSR

UDC: 621.374.32

ARTYUKH YU. N., GULEVSKIY, E.K., ZAGURSKIY, V. YA., Institute of Electronics and Computer Technology, Academy of Sciences of the Latvian SSR.

"The Dynamic State of a Flipflop with Digital Input Based on Tunnel Diodes and Transistors"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, No 2, 1970, pp 103-103

Abstract: After a brief introduction to the mathematical description of flipflop circuits, a particular circuit is described and its schematic diagram is given. The circuit involves two diodes, two tunnel diodes, and three transistors. The threshold apparatus is a diode resistive impulse voltage comparison element, loaded on an amplifier discriminator. The discriminator is a delay relaxer with a reactive transistor as energy accumulator.

The circuit is described in mathematical terms, showing that the threshold of operation to place the flipflop in the 1 state is equal to the operational charge accumulated, while to place it in the 0 state, it is equal to this charge minus the integral value of the input current over one cycle.

The circuit was constructed and tested experimentally, and was also simulated on a digital computer. Parasitic inductive parameters were not considered in the analysis. The results of the simulation were reasonably close 1/3

USSR

ARTYUKH, YU. N, et al, Izvestiya Akademii Nauk Latviyskoy SSR, No 2, 1970, pp 103-108

to the experimental values.

The authors draw the following conclusions:

- 1) The inertia necessary in a signal discrimination circuit for a counter input flipflop is provided by the accumulation and discharge of charges in the base of a diode in the comparison circuit and by the modulation of the operational threshold value of the relaxer; appropriate choice of circuit parameters makes the circuit operational over a wide range of input impulse frequencies;
- 2) Characteristics of relaxer operation in the circuit considered ensure a small delay of the output signal (on the order of a few nanoseconds) and its standardization in amplitude and duration;
- 3) The use of a transistor as an inverting input bypass element on the O setting of the flipflop ensures the necessary coordination of the timing states in the circuit without significantly worsening its frequency. characteristics; 2/3

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

USSR

ARTYUKH, YU. N., et al, Izvestiya Akademii Nauk Latviyskoy SSR, No 2, 1970, pp 103-108

- 4) The utilization of well known digital models of FP elements, as described by Ashar, Ghach, Aldridge, and Patterson in the IBM Journal of Research and Development, Volume 7, No. 3, 1963, for a large signal is satisfactory for a qualitative investigation of transient processes in the circuit, but does not provide the necessary accuracy for quantitative evaluation;
- 5) The speed of operation of the circuit is basically determined by the characteristics of the PP elements used; using a type 1T308, the limiting frequency of flipflop operation in a binary multiposition counter is 70 megahertz, while with a type 1T313 this frequency limit could be approximately doubled.

There are four references, two Soviet and two American. 5214

3/3

USSR

UDC: 621.373.431.3

GULEYKOV, Yu. M.

"A High-Voltage Sawtooth Generator"

Elektron. tekhnika. Nauchno-tekhn. sb. Kontrol'no-izmerit. apraratura (Electronic Technology. Scientific and Technical Collection. Monitoring and Measuring Equipment), 1970, vyp. 2 (20), pp 72-75 (from EZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G276)

Translation: The described low-power sawtooth voltage oscillator consists of a high-frequency high-voltage transformer with a semiconductor switching diode, resistor and capacitor connected in the primary winding, and a vacuum tube rectifying diode, load resistor and filter capacitor connected in the secondary (step-up) winding. The requirements for the high-frequency transformer are discussed. A practical circuit is presented for a generator with output voltage amplitude of 3 kV and repetition frequency of 800-1000 Hz. Bibliography of five titles. N. S.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

USSR UDC: 621.385.623

GULGAMARYAN, M. A. and BAROYAN, Yu. N., W. Hark Institute, Yemevon

"Light Sensor with a High-Q Resonator"

Yerevan, <u>Izvestiva Akademii nauk armyanskov SSR--Jeriya tekhni-</u> cheskikh nauk, vol 25, ko 4, 1972, pp 25-31

Abstract: Although the most sensitive light sensors are those equipped with a photomultiplier, the introduction of the photomultiplier into the device has the effect of reducing the Q of the resonator due to the resistance of the semitransparent photocathode. This article proposes and considers a method for increasing the resonator Q for a sensor with a photomultiplier, and discusses some practical applications of such a device. Through an analysis of the basic factor reducing the Q, the authors find that the resonator Q with a photomultiplier can be improved by reducing the coupling between the two devices. This is done by increasing the distance between the resonator's inner red and the photocathode. An analysis of this arrangement is node through its equivalent circuit, and its application to the design of optical reage finders is deconstrated.

Photoelectric Effect

USSR UDC: 621.383.2

GULGAZARYAN, K. A.

"A Coordinate-Sensing Photoelectric Device"

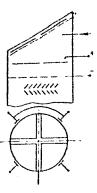
Moscow, Otkrytiva, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331450, Division H, filed 1 Jul 67, published 7 Feb 72, p 170

Translation: This Author's Certificate introduces a coordinate-sensing device which contains a photoelectronic device with side input having four electrically insulated electrodes located beneath its photocathode. These electrodes are connected to AC voltage sources. As a distinguishing feature of the patent, the device is simplified by applying the electrodes in such a way that the gaps between them form two mutually perpendicular slits. Two adjacent electrodes are connected to a single source, while each of the two others is connected to a separate source, the voltage frequency of each source being different.

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GULGAZARYAN, K. A., USSR Author's Certificate No 331450



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Photoelectric Effect

USSR

upo 621.;65:557.5;3.8

GULGAZARYAN, A.A.

"Photoelectron Device"

USSR Author's Obriblicate No 248094, Filed 6 Feb 67, Published + May 71 (from RZh-Elektronike i yeye primeneniye, No 10, Cotober 1970, Abstract No 10, 2087)

Translation: The construction is proposed of a photoelectron device intended for reception of optical signals modulated by microwave oscillations. It represents a photoelectron device coupled with a resonant devity and the photocathede is applied directly to one of the faces of the resonant devity. The proposed construction makes it possible to reduce the necessary power for the heterodyne substantially and to reduce the size of the entire device. S.D.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

USSR

C. A.

100 621.372.061

GULGAZARYAN, K. A.

"Transient Processes in the Penervation of Thin Films by a Field"

Kiev, Izvestiya VVX -- Radioelektronika, Vol 13, No 7, 1973, pp 759-e94

Abstract: A mathematical analysis is presented of a device used in optical heterodyne receivers and for improving the noise immunity of optical receivers in which the receiver is switched by strobe pulses. In this device, a thin conducting film is the source of an electron beam, and the beam is controlled by electrodes eutside the vacuum envelope. The electrode symmetric considered to be a line with distributed parameters, and the equivalent circuit of the device indicates that there are two lines will variable characteristic impedances connected by the film as the common cheatrode. For simplicity of computation, it is assumed that the film is purely resistive and that only a capacitive effect exists between the electrodes, which are shaped as rings. Expressions are obtained for the controlling voltage with a sinusoidal signal and for the transfer characteristics of the instrument. Finally, the case in which the input voltage is a square pulse is considered, and it is found that for pulses of large duration, the system is differentiating.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

MADO43578 - GULGAZARYARO482K.A.

Soviet Inventions Illustrated, Section II Electrical, Derwent,

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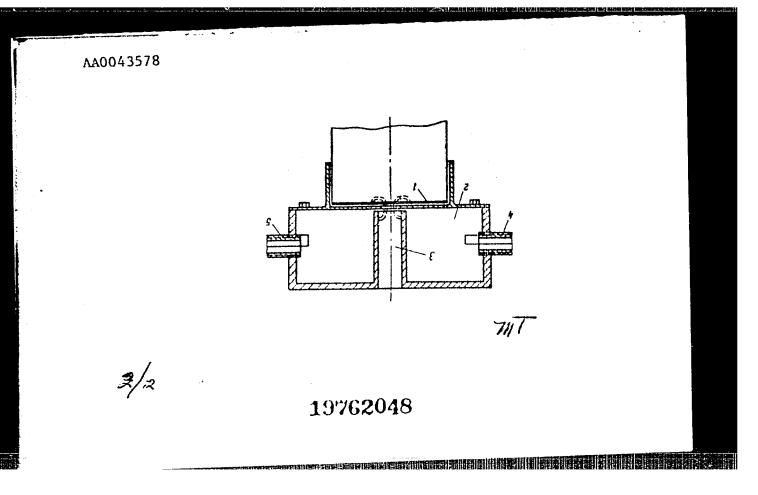
243036 PHOTOMULTIPLIER for the reception of optical signals which are modulated by an SHF signal has photocathode (1) which lies in the action range of the field of resonator (2). The resonator has aperture (3) for light transmission and an input and output for the SHF-energy.
21.12.64 as 934696/26-25. A.P.SKIBARKO & K.A.

21.12.64 as 934696/26-25. <u>A.P.SKIBARKO</u> & <u>K.A.</u> <u>GULGAZARYAN</u> (18.9.69) Bul 16/5.5.69. Class 2lg. Int.Cl.H 01 j.

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USSR UDC: 621.8.03-562

GULIA, N. V., LINKIN, L. D.

"The Accumulating Capacities of Super Flywheels"

Moscow, Vestnik Mashinostroyeniya, No 12, 1972, pp 11-12.

Abstract: Super flywheels, with recent developments in materials, vacuum chamber mountings and special bearings, can effectively replace existing power sources in motor vehicles, boats, submarines, tractors, cranes, trains, airplanes, space systems, interplanetary probes, hand tools, agricultural machines, etc. This article analyzes the accumulating capacities of wheel, bar and wedge-type super flywheels. From the standpoint of specific power capacity, all three types are equivalent; however, wheel types have the advantages of simplicity of manufacture, lower rotating speeds, ease of balancing and availability of space at the center of the wheel for mounting of suspension and transmission elements. Rod and wedge-type super flywheels have the advantage that the direction of the material fibers is the same as the direction of the applied stresses. Super flywheels in general have the advantage of being rupture-safe.

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Microbiology

USSR

UDC 576.851.45.077.3:576.8.073.4

GULIDA, M. M.

"The Effectiveness of the Immunoluminescent Method of Detecting Tularemia Microorganisms With the Use of Laboratory Animals as the Medium for Pathogen Accumulation"

Moscow, Laboratormoye Delo, No 1, 1973, pp 25-28

Abstract: One-ml portions containing 10 to 10 million cells of a 2-day old culture of F. tularensis strain No 128 were injected subcutaneously into guinea pigs and white mice. Six to 24 hours later, tissue samples were withdrawn by puncture at the site of infection, and smears were made and treated with rabbit puncture at tularemia serum. In guinea pig smears, luminescent cells were luminescent tularemia serum. In guinea pig smears, luminescent cells were observed in 2 out of 2 smears 6 hrs after injection of 1 million bacteria, 18 hrs after injection of 100,000 bacteria, and 24 hrs after injection of 1,000 bacteria. In mouse slides, positive results were obtained in all smears 6 hrs after injection of 1 million bacteria, 10 hrs after injection of 100,000 bacteria, 12 hrs after injection of 10,000 bacteria, and 18 hrs after smaller doses, of 100 bacteria. The first luminescent bodies were detected after smaller doses, of 100 bacteria. The first luminescent bodies were detected after smaller doses, of 100 bacteria. The first luminescent bodies were detected after smaller doses, of 100 smears 10 hrs after injection of 10,000 bacteria, in 3 out of 5 smears out of 10 smears 10 hrs after injection of 10,000 bacteria, in 3 out of 5 smears

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

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GULIDA, M. M., Laboratornove Delo, No 1, 1973, pp 25-28

12 hrs after injection of 1,000 bacteria, and in 2 out of 5 smears 18 hrs after injection of 10 bacteria. All control smears (noninfected and infected with plague and brucellosis pathogens) yielded negative results. Thus, the immunoluminescent method with the use of white mice for proliferation of the bacteria makes it possible to establish the diagnosis within a shorter period than can be accomplished by the bacteriological method.

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USSR UDC: 539.4:621.81

GULIDOV, A. I., DUDOLADOV, A. S., NIKIFORCVSKIY, V. S., SERYAKOV, V. M.

"Effect of a One-Dimensional Slit in the Walls of Multilayered Cylindrical Structures on the Thermal State and on the Stressed and Deformed State"

V st. Chisl. metody mekh. splosh. sredy. T. 2. No 5 (Numerical Methods of the Mechanics of a Continuous Medium-collection of works, Vol 2, No 5), Novosibirsk, 1971, pp 78-84 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7V871)

Translation: The paper discusses rossibilities of a slit developing in an infinite two-layer tube, and the influence of the slit on the thermal and stressed state. The materials of the layers are isotropic, homogeneous and elastic. At time zero the tube has a given temperature and is free from stresses. Then the temperature of the medium inside the tube rises abruptly while the outside temperature remains at the initial value, and convective exchange takes place with constant heat-transfer coefficients. If the temperature expansion of the outside layer is greater than that of the inner layer, then radial tensile stresses arise and the layers may separate in the area of the joining. In the reverse

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GULIDOV, A. I. et al., Chisl. metody mekh. splosh. sredy. T. 2. No 5, Novosibirsk, 1971, pp 78-84

situation a slit develops due to loss of stability of the inner shell from compressive stresses. The problem is numerically solved in the approximation of unconnected quasistatic thermoelasticity. Ideal thermal and tight mechanical contact is assumed on the boundary of the layers without a crack. The thermal resistance of the air gap is introduced at the crack, and its borders are freed from stresses. Examples of three pairs are considered: 1) W-steel, 2) W-copper, 3) W-graphite, where W is the inner layer. In examples 1 and 2 the compressive stresses rapidly change to tensile stresses and a slit (0.01-0.1 mm) appears due to separation of layers in the sixth second (in example 1). In example 3, a slit (up to 2 mm) is formed by the abrupt change from loss of stability in the fifth second, and the inner layer quickly heats up. In example 1, inside, middle and outside radii of 100, 103 and 106 mm are assumed with the temperature inside the tube 103 °C, and the coefficient of heat transfer from the tube $10^3 \text{ kcal} \cdot \text{m}^{-2} \cdot \text{hr}^{-1} \cdot \text{deg}^{-1}$ (1.16·10³ W·m⁻²·K⁻¹). M. S. Povernitsyn.

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UDC 631.954:631.811:633.63:632.51

KOROLEV, L. I., GULIDOV, A. M., ZIMOVSKAYA, A. T., and NEPOCHATOV, A. P., Scientific Research Institute of Fertilizers and Insectofungicides, Moscow USSR

"Herbicidal Activity and Selectivity of Preparations on Sugar Beets and Weeds as a Function of the Conditions of Mineral Supply"

Moscow, Agrokhimiya, No 4, Apr 73, pp 114-121

Abstract: Experimental results are reported from the study of the phytotoxicity of herbicides as a function of the nutritional conditions in sugar beets and weeds. Both greenhouse and field trials have shown a change in the reaction of sugar beets and various weeds towards the dichlorourea, eptam (S-ethyl N,N-dipropylthiocarbamate), tillam (S-propyl N-butyl-N-ethylthiocarbamate), pyramine (1-phenyl-4-amino-5-chloropyridazone-6) and murbetol, depending on the amounts of mineral fertilizers added. Significant differences in the content and breakdown of nutritional agents have been noticed in case of bristly foxtail grass treated with dichlorourea, directly related to the level of fertilizers. It has been shown possible to increase herbicidal effectiveness by regulating the supply of minerals.

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CIA-RDP86-00513R002201030002-1" APPROVED FOR RELEASE: 09/01/2001

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UDC: 632.954

KOROLEV, L. I., GULIDOV A., NEPOCHATOV, A. P., Laboratory of Herbicides and Defoliants, Moscow Scientific Research Institute of Fertilizers, Insecticides and Fungicides imeni Ya. V.

"Investigation of the Herbicidal Properties of Lenacyl and

Moscow, Agrokhimiya, No 6, Jun 72, pp 114-118

Abstract: The article is a report on studies conducted at the Moscow Institute of Fertilizers, Insecticides and Fungicides on the herbicidal properties of Lenacyl (uracyl 634, Venzal, 3-cyclohexyl-5,6-trimethyleneuracyl) in the form of an 80% moist powder, and Ronite (S-ethyl cyclohexylthiocarbamate) in the form of a 72% emulsion concentrate. It was found that in heavy chernozem Lenacyl is most effective as a weed killer in a dose of 3 km/heetare; however, in view of its destructive effect on sugar beets and on cats (and possibly on other grain crops), it is not advisable to use the herbicide in a done of more than 2 kg/hectare. Lenacyl is preferably used in even lower dones (0.5-1 kg/hectare) in combination with standard narrow-leaf heroicides. Ronite has excellent herbicidal properties and selectivity when used on sugar

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KOROLEV, L. I., et al., Agrokhimiya, No 6, Jun 72, pp 114-118

beets. It should be used in doses of 4-10 kg/hectare, depending on the type of weeds being controlled. A dose of 4 kg/hectare is highly effective against provide and annual hedge nettle. When weeds more resistant to the herbicide (field mustard, etc.) are present together with those which are sensitive to Ronite, a dose of 8-10 kg/hectare should be used.

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UDC 632.954:631.531:633.63

CULIDOV. A. M. and KOROLEV, L. I., Moscow Scientific-Research Institute for

"A Study of the Herbicidal Characteristics of Simple and Mixed Preparations for Sugar Beet Crops"

Moscow, Agrokhimiya, Nov, No 11, 1970, pp 136-143

Abstract: Most simple herbicides used with sugar beet crops show decided weaknesses, such as short-range action, toxicity for the beet, and so on. The authors conducted field and vegetation tests in connection with sugar beet growing in a thick chernozem soil, to determine the herbicidal effects of six simple herbicides and of pairs of several of them (Epthama, Tillama, dichlora-

Herbicidal effects were somewhat uneven, depending on the type of weed. Lenacil and Ronite were promising against nonperennial dicotyledons and yellow foxtail, respectively. Epthama-phenazone was very effective, but not more so

All of these substances are recommended for further study.

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UDO 621.315.592:546.28

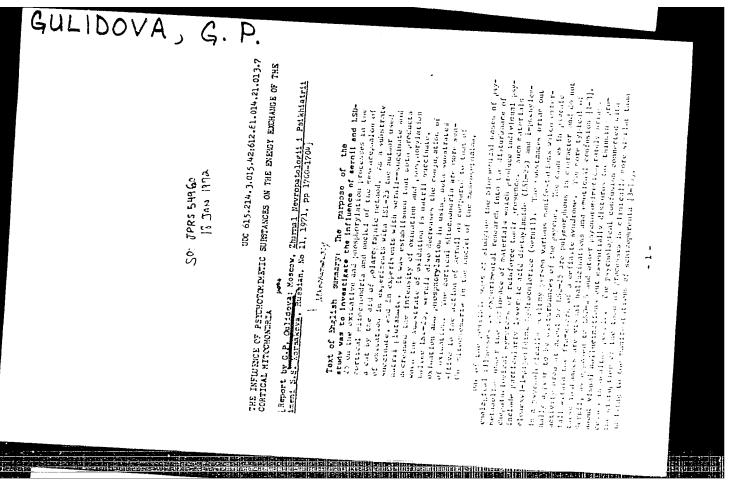
CHISTYAKOV, YU.D., PALIYENKO, A.N., GULIDOV, D.N., SECHENOV, D.A.

"Some Features Of The Growth Of Autoepitaxial Layers Of Silicon During Application Of Exterior Electrical Field"

Sb. nauch.tr. po probl. mikroelektron. Mosk.in-t elektron.tekhn. (Collection Of Scientific Works On Problems Of Microelectronics. Moscow Institute Of Electronics Technology), 1972, Issue 8, pp 161-164 (from RZh:Elektroniks i yeye primen-

Translation: Consideration is given to the effect of an electrical field on the rate of flow of a chemical reaction at the surface of an increasing autoepitexial layer (AEL) and on the controlled introduction of impurities into the AEL. Experimental data are presented on the growth rate of an AEL from a vapor-gas mixture (SiOl, + H2) during application of an exterior electrical field with an intensity of 1: 3kB/cm. 6 ref. Summary.

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PROCESSING DATE--11SEP70

PITLE--THE CONTENT AND ACTIVITY OF BASIC COMPONENTS OF KININ SYSTEM PROCESSING DATE--11SEP70

BLOOD SERUM OF PATIENTS WITH PHEUMATISM -UTRAPEZNIKOVA, S.S., YAROVAYA, G.A., LAUFER, A.L., GULIKOVA, J.M.,

COUNTRY OF INFO--USSR

SOUPCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 2, PP 152-161

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RHEUMATIC DISEASE, BLOOD CHEMISTRY, CHROMATOGRAPHY, ENZYME

COMITED MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REFL/FRAME--1986/0766

STEP NO--UR/0301/70/015/032/2152/ 1721

CIRC ACCESSION NO--AP0102730

UNCLASSIFIED

2/2 . 024 CIRC ACCESSION NO--APOID2730 UNCLASSIFIED ABSTRACT/EXTRACT--(III) GP-0-PROCESSING DATE--1138970 COMPONENTS OF KININ SYSTEM KININGSEN, KALLIKREIN, KININASE AND TOTAL BASE ESTERASE AND ANTITRYPTIC ACTIVITY IN BLOOD SERUM OF 30 HEALTHY AND 17 PATIENTS WITH RHEUMATISM HAS BEEN STUDIED. THE ACTIVITY OF KALLIKREIN IN BLOOD SERUM WAS DETERMINED BY MEANS OF COIGINAL CHROMATOGRAPHIC METHOD AND WAS AMOUNTED TO 30 PLUS OF MINJS & MKT-ME IN THE CONTROL, I. E. 6,2 PLUS OF MINUS 1, TPERCENT FROM TOTAL SAME ESTATAS THE ACTIVITY OF THIS ENZYME IN BLOOD SERUM OF PATIENTS WITH RHEUMATISM IN ACUTE STAGE OF THE DISEASE IS ELEVATED AT AVERAGE BY 5-7 TIMES. THE TOTAL BASE ESTERASE ACTIVITY OF BLOOD SERUM REFLECTIVE THE ACTIVITY OF PROTEINASES OF TRYPSIN TYPE (AND KALLIKREIV) TENOS TO INCREASE IN PATIENTS WITH RHEUMATISM. BLOOD SERUM KININGEN CONTENT IN PATIENTS WITH RHEUMATISM (II AND III STAGES OF RHEUMATIC PROCESS) WAS DIMINISHED FROM 4.6 (CONTROL) TO 3.5 MUS OF BRADYKININ PER ML. T. ACTIVITY OF KININASE (CARBOXYPEPTIDASE N) WAS UNCHANGED. ANTITPYPTIC ACTIVITY OF BLOOD SERUM OF PATIENTS WAS DECREASED DUFING THE 111 PG STAGE OF THE PROCESS ONLY: IN PATIENTS WITH I AND IT STAGES THE ACTIVITY WAS AT THE NORMAL LEVEL OR EVEN SLIGHTLY INCREASED. THE AVALYSTS OF RESULTS INDICATES TO SOME COPALIATION BETWEEN CHANGES IN CHAPACTERISTICS OF KININ SYSTEM COMPONENTS AND THE EXTENT OF PHEUMATIC PROCESS ACTIVITY. THE FALL IN KININGEN CONTENT AND INCREASE IN KALLIKSEIN ACTIVITY 30TH TESTIFY TO THE ACTIVATION OF KININ SYSTEM AT RHEUMATISM.

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UDC 621.039.5.16.25

BAT', G. A., GULIMOV, V. N., ZARUBIN, YU. V., OBUKHOV, V. K., and USHAKOV, YU.V.

"Temperature Effect in the Range of 20-250° C for Several Strictly Regular Heterogeneous U-H20 Critical Assemblies

Moscow, Atomnaya Energiya, Vol 30, No 4, Apr 71, pp 354-358

Abstract: A good description of the function $N_{CT}(T)$ is a sufficiently reliable proof of the adequacy of the computational method and the judiciousness of the simplifications employed in it for describing the design of a reactor. Unfortunately, however, there are few experimental data on the effects of reactivity in reactors, and it is usually assumed that about a 20% accuracy in predicting the temperature effect of the reactivity is adequate. The integral nature of the critical experiments makes it possible to obtain only minimal data on each specific assembly. However, if enough such experiments are carried out, it may be possible to supplement these data on the microparameters or even perhaps to change them considerably.

The authors describe the fuel elements and the test stands and provide a table showing the composition of the fuel in weight %. They include a section on the experimental procedure and cite the results from the tests.

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BAT', G. A., et al., Atomnaya Energiya, Vol 30, No 4, Apr 71, pp 354-358

Five graphs are given which show the critical mass versus other factors. The computational and the measured results agree satisfactorily. The article contains 1 table, 5 figures, and a bibliography of 3

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UDC 669.715'725'721(088.8)

FRIDLYANDER, I. N., GULIN, A. N., SANDLER, V. S., YATSENKO, K. P., KOLESNIKOVA, V. I., POLYAKOV, YE. S., YUDIN, A. F.

"Deformable Alloy Based on Aluminum"

USSR Author's Certificate No 310946, filed 24 Mar 70, published 1 Oct 71 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 41627P)

Translation: A deformable alloy based on aluminum is proposed with the following composition: 15-40% Be, 1.5-8% Mg, 0.2-2.5% Li, and Al for the rest. In order to increase the corrosion strength, 0.1-0.6% Si can be introduced into the alloy. In order to increase the strength and plasticity, up to 0.2% Zr, Mn, Cr, and Ti introduced separately or jointly can be added. The proposed alloy permits variation of the properties within broad limits: $\sigma_{\rm B}$ 40-65 kg/km², δ 9-12%, γ

8-13% (the pressed ingots after quenching and aging). The alloy containing 24.4% Be, 4.3% Mg, 1.9% Li, and the rest Al after heat treatment has γ 2.3 g/cm³, E 13,650 kg/mm², σ_B 59.5 kg/mm², δ 11.3%, ψ 11.5%. The heat treatment conditions are as follows: quenching from 450°, 40 minutes and aging at 120°, 24 hours. The proposed alloy is obtained by the method of melting and casting in a vacuum and in an inert environment with subsequent deformations. Obtaining the intermediate products is possible by the powder metallurgy methods. The material can 1/2

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FRIDLYANDER, I. N., et al., <u>USSR Author's Certificate No 310946</u>, filed 24 Mar 70, published 1 Oct 71

be used in rigid structural elements in which the defining factors are a combination of lightness, high rigidity with high strength at operating temperatures to 120-150° and under short-term effects, to 400°.

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FRIDLYANDER, I. N., YATSENKO, K. P., NEKRASOVA, G. A., SANDLER, V. S., SEMENCVA, Z. G., and GULIN, A. N.

"Laws of Variation of the Structure and Properties of Eeryllium-Aluminum Alloys"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 7, 1970, pp 50-55

Abstract: This article contains a discussion of the laws of variation of the structure and properties of beryllium-aluminum hypereutectic alloys. Various amounts of magnesium were added to the alloy to produce various changes. By generalizing the results of x-ray micrography a diagram is constructed for the decomposition of a solid solution of aluminum-beryllium alloy with 30% Be and 5% Mg. The variation in mechanical properties of the same alloy is plotted for aging at 200°C and at 250°C. The strength of aluminum-berllium alloys as a function of the distance between the B-phase particles (the distance between the beryllium particles) is also plotted for Al-Be and Al-Be-Mg. The mechanisms of all these variations in structure and properties are discussed in detail.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201030002-1"

UDC: 518:517.944/.947

GULIN, A. V., SAMARSKIY, A. A., Corresponding Member of the Academy of Sciences of the USSR, Institute of Applied Mathematics, Academy of Sciences of the USSR, Moscow

"Stability of Difference Schemes With Non-Self-Adjoint Operators"

Moscow, Doklady Akademii Nauk SSSR, Vol 206, No 6, 21 Oct 72, pp 1280-1283

Abstract: Let H be a finite-dimensional Hilbert space (real or complex), A and B — linear operators acting on H, $\omega_t = \{t_n = n\tau, n = 0, 1, \ldots\}$ — a grid on segment $0 \le t \le T$, $y_n = y(t_n) \in H$ — functions with values in H. The authors consider a two-layer difference scheme (A. A. Samarskiy, Vvedeniye v teoriyu raznostnykh skhem [Introduction to the Theory of Difference Schemes], "Nauka", Moscow, 1971).

$$B\frac{y_{n+1}-y_n}{\tau} + Ay_n = 0, \quad n = 0, 1, \dots, y_0 \text{ is given}$$
 (1)

in which A and B are independence of n, and the inverse of B exists.

It is assumed that the self-adjoint positive operator D ((Dx, x) > 0) for all $0 \neq x \in H$ and the space H_D is formed which consists of elements $y, v, \ldots \in H$

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GULIN, A. V., SAMARSKIY, A. A., Doklady Akademii Nauk SSSR, Vol 206, No 6, 21 Oct 72, pp 1280-1283

with scalar product $(y, v)_D = (Dy, v)$ and norm $\|y\|_D = \sqrt{(Dy, y)}$. Scheme (1) is called stable in space H_D if the inequality

$$||y_{n+1}||_{D} \le ||y_{n}||_{D}, \quad n = 0, 1, \dots$$
 (2)

is satisfied at any $y_n \in H$ for solution y_{n+1} of problem (1).

Previous papers by the authors (DAN v. 181 No 4 p 808, 1968; v. 181
No 5 p 1042, 1968) gave necessary and sufficient conditions for stability of scheme (1) in spaces H_A and H_B if at least one of the operators (A or B) is self-adjoint and positive. The stability conditions were formulated as an inequality between A and B. For instance, if $A^* = A > 0$, then the necessary and sufficient condition for stability in H_A takes the form

$$B_{\bullet} \geqslant 0.5 \, \tau A_{\bullet} - B_{\bullet} = 0.5 (B + B^{*}).$$

In this paper the authors consider difference schemes in which both operators (A and B) are non-self-adjoint.

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