USSR

UDC 577.154.3.03

KIYREND, E. and LIPPMAA, E., Institute of Cybernetics, Estonian Academy of Sciences

"Effect of a High-Frequency Electromagnetic Field on Hog Pancreatic Alpha Amylase Activity"

Tallinn, Izvestiya Akademii Nauk Estonskoy SSR, No 4, 1973, pp 302-308

Abstract: Hog pancreatic alpha amylase was irradiated with a ship microwave transmitter for 30 to 75 min at frequencies of 10, 11, 12, 22, and 25 mHz in the temperature range of 18 to 24°, at 10.9775 mHz in the range of 27.7 to 28.2°, and at 11.970 mHz and 35.3° in an apparatus with a thermostat-controlled cuvette. Although these conditions, according to S. A. Bach, normally ensure maximum inactivation of alpha amylase, the effect of the high-frequency electromagnetic fields on the activity of the enzyme was indistinguishable from the control.

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1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ADHESIVE BASE ON SKS 50K LATEX -U-

AUTHOR-(04)-KIZBER, S.A., KALMYKOVA, Z.P., PRYAKHINA, E.A., GONSOVSKAYA, T.B.

COUNTRY OF INFO--USSR

SOURCE--POLIGRAFIYA 1970, 1, 36-7

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ADHESIVE, LATEX, STYRENE/(U)SKS50K STYRENE RUBBER, (U)SKS30SHR STYRENE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0887 STEP NO--UR/0543/70/001/000/0036/0037

CIRC ACCESSION NO--AP0134616

UNCLASSIFIED

2/2 015 UNCLASSIFIED

CIRC ACCESSION NO--AP0134616 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTS. WITH ADHESIVES PREPD. FROM SKS 50K LATEX (I) INDICATED THAT THEY COULD BE USED FOR BOOK BINDING, AND THAT I IS A GOOD SUBSTITUTE FOR SKS 30SHR LATEX. THE PHYS. PROPERTIES OF SKS 50K ADHESIVES WERE DETD.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--CORRELATION OF THE LUMINESCENT AND SPECTROPIC PROPERTIES OF URANYL COMPOUNDS WITH THEIR STRUCTURES -U-

AUTHOR-(05)-BURKOV, V.I., KIZEL, V.A., KRASILOV, YU.I., MADIY, V.A., AKIKHANOVA, Z.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 572-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--LUMINESCENCE, URANIUM COMPOUND, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2013 STEP NO--UR/0048/70/034/003/0572/0575

CIRC ACCESSION NO--AP0125601

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125601

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ROTATION STRENGTH (RI), THE TRANSITION, THE DICHOISM (D), AND THE DEGREE OF CIRCULAR POLARIZATION (C) WERE STUDIED IN THE SERIES MEUO SUB2, (C SUB2 H SUB5 CO SUB2) SUB3 (ME EQUALS K, NH SUB4, RB, CS, AND NA). LINEAR RELATIONS WERE FOUND BETWEEN RI AND THE CATION DIMENSION AND BETWEEN RI AND C AND D. THE DEPOSITION OF ENERGY LEVELS IN UO SUB2 IS DISCUSSED. FACILITY: MOSK. FIZ. TEKH. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR UDC: 8.74

YEFIMOV, Yu., KIZEV, V., NEVRAYEV, V., SEDEL'NIKOV, P.

"Algorithm and Program for Compilation of an Operative Calendar Plan on the 'Ural-11' Computer"

V sb. Elektronno-vychisl. tekhn. i programmir. (Electronic Computer Technology and Computer Programming--collection of works), vyp. 4, Moscow, "Statistika", 1971, pp 80-85 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1062)

Translation: The described automated system for operative control of a machine building enterprise under conditions of small-series, series and large-series production is based on the theory of graphs and set-theory concepts and, in the authors' opinion, has advantages over a number of existing systems. Authors' abstract.

1/1

USSR UDC: 519.1

YEFIMOV, Yu. N., KIZEV, V. I., NEVRAYEV, V. I., SEDEL'NIKOV, P. A.

"Concerning a Graph Enlargement Algorithm"

Izv. Tomsk. politekhn. in-ta, 1972, 223, pp 15-17 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V391 by I. Sigal)

Translation: The paper deals with the problem of transformation of an oriented graph with a large number of arcs and vertices, retaining all main parameters and mutual relations of the initial graph (the problem of enlargement). In the given graph $G=(I, \Gamma)$, where I is the set of vertices, and Γ is its mapping, the author indicates the set of vertices $I' \subset I$ to be excluded. For each vertex $i' \in I'$ a set of vertices is designated with which this vertex is associated (connected), and characteristics are assigned for all vertices of the designated set. Then for each vertex $i' \in I'$ a vertex i_k is defined for which $i' \in \Gamma_{i_k}$, the connections of vertex i' are included in the connections of i_k, and the connections of vertex i' are deleted from the graph. The parameters of the vertices are recalculated accordingly.

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USSR

UDC: 519.1

YEFIMOV, Yu. N., KIZEV, V. I., MAROSHKIN, G. Yu., NEVRAYEV, V. I., SEDEL'-NIKOV, P. A.

"Using Graphs in Normative Calculation of the Production Cost of an Item"

Izv. Tomsk. politekhn. in-ta, 1972, 223, pp 10-11 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V390 by I. Sigal)

Translation: The paper deals with the problem of determining the production cost of a good. The problem consists in calculating indirect expenses, as well as expenses introduced by the elements which comprise the given product. The problem may be represented by an oriented graph, each vertex corresponding to some item i, while the arcs (i,j) of the graph correspond to the applicability of this item (good) i for obtaining product j into which these products i are incorporated as a component part. It is assumed that the vertices in this graph are broken up into layers (topologically ordered). To get the complete production cost, the expenses are calculated for each product j by adding the expenses with respect to the component products for all vertices of the graph from left to right.

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UDC: 621.372.851

USSR

MALANCHENKO, V. P., KIZEYEVA, G. M.

"Propagation Ratio of a Waveguide With Two Inhomogeneities"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 1, Jan 72, pp 1-6

Abstract: The authors consider two identical infinitely thin arbitrarily spaced plane-transverse inhomogeneitics in a waveguide. Solution of the electrodynamic problem by the Galerkin method in the single-parameter approximation gives the complex propagation ratio for the system of two homogeneities with regard to the interaction of the higher wave modes which arise on these inhomogeneities. A diaphragm of finite thickness in a waveguide is considered as a special case, and formulas are derived for calculating the parameters of its equivalent circuits. A study is made of the limits of applicability of the theory of long lines to the calculation of waveguide devices with closely spaced inhomogeneities. The expression found for the complex propagation ratio of

1/2

USSR

MALANCHENKO, V. P., KIZEYEVA, G. M., Radiotekhnika i Elektronika, Vol 17, No 1, Jan 72, pp 1-6

two inhomogeneities in a waveguide is more accurate than the analogous expression known from the theory of long lines. For instance, the expression found in this paper can be used for calculating the parameters of thick diaphragms. Although the formulas derived are approximate, they are valid for diaphragms of practically any thickness with openings in them of any singly connected configuration in waveguides of arbitrary cross section. A numerical example shows that a distance of $1/K_{min}$ between inhomogeneities ensures weak interaction between their fields, and for practical purposes may be taken as the minimum spacing at which the theory of long lines is still applicable to calculation of waveguide devices with closely spaced inhomogeneities. Four figures, bibliography of five titles.

2/2

Acc. Nr: AP0044476 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code: US0000

84789m Electron resonance spectrum of the magnetically ordered crystal $GaFeO_3$ in the presence of an external electric field. Petrov, M. P.; Kizhaev, S. A.; Smolenskii, G. A. (Inst. Semicond., Leningrad, USSR). *Solid State Commun.* 1970, 8(3), 195-6 (Eng). The electron resonance spectrum has been investigated in the ferrimagnet-piezoelec. crystal $Ga_{0.45}Fe_{1.55}O_3$. Lines shifts and line shape changes have been discovered in the presence of the external elec. field. RCYZ

REEL/FRAME
19771099

1/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--COMPLEXING OF PALLADIUM WITH 4,5,DIPHENYL,2,MERCAPTOIMIDAZOLE -U-

AUTHOR-(03)-MIKHAYLENKO, M.I., TSERKASEVICH, K.V., KIZHKO, P.O.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(4), 326-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PALLADIUM COMPOUND, COMPLEX COMPOUND, MERCAPTAN, IMIDAZOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0898 STEP NO--UR/0073/70/036/004/0326/0329

CIRC ACCESSION NO--AP0137926

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201330008-2"

2/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0137926
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PD FORMS A 1:2 COMPLEX, ABSORBANCE MAX. AT 440NM, WITH 4,5,DIPHENYL,2, MERCAPTOIMIDAZOLE. THE OPTIMUM ACIDITY IS 2-5N HCLO SUB4. THE APPARENT FORMATION CONSTS. AS DETD. BY ISOMOLAR SERIES AND BY HIGH FREQUENCY TITRN. ARE (2.7-2.9) TIMES 10 PRIME NEGATIVE11 IN AQ. ME SUB2 CO AND (1.46-2.7) TIMES 10 PRIME NEGATIVE11 IN AMYL ALC. FACILITY: ODESS. TEKHNOL. INST. PISHCH. KHOLOD. PROM., ODESSA, USSR.

UNCLASSIFIED

USSR

UDC: 681.3.06:51

KIZHNER, S. G., TOPORISHCHEVA, S. A., and EPSHTEYN, A. M.

"Program Control of Initial Data"

Tr. NII avtomob. prom-sti (Transactions of the Scientific Research Institute of the Automotive Industry) No 1(3), 1972, pp 3-6 (from RZh--Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1973, Abstract No 12B148)

Translation: Use of the electronic computer for solving problems connected with the processing of large masses of economics information requires effective control of the correct preparation of the initial data in the machine. One of the variants of initial data program control, designed for the class of documents in tabular form, is considered. One illustration. Resume.

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USSR

UDC: 621.311:681.142.2

KIZHNER, S. I., MANUSOV, V. Z., SIDORKIN, Yu. M., Novosibirsk Electrical Engineering Institute

"An ALGOL Program for Calculating the Steady-State Conditions of Electric Systems by the Method of Loop Currents"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, vyp. 3, No 13(193), Oct 71, pp 96-101

Abstract: Steady-state conditions in electric systems are calculated by splitting up the closed system into loops where the current divides. An algorithm is proposed for handling the problem on a digital computer using ODRA-ALGOL and ALPHA algorithmic languages for the description. The solution algorithm is presented in matrix form, and a block diagram of the program for calculation is given. A modified program can handle analysis of up to a total of 150 loops and junctions on the ODRA digital computer in 10-15 minutes.

USSR

UDC: 621-398

BENIN, V. L., KIZILOV, V. U., and MAKSIMOV, V. M.

"Broad-Pulsed Modulator"

USSR Authors Certificate No 296141, filed 26 May 69, published 9 Apr 71 (from RZh-Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1971, Abstract No 12A233P)

Translation: A broad-pulsed modulator contains a bistable transistorized d-c converter and is distinguished in that, for the purpose of broadening the functional possibilities of the device, it contains an additional magnetic core with a control winding, the collector and output windings of the converter both using the core.

1/1

USSR

UDC 616.981.455-092.9:599.32

KHVESHCHENKO, Ye, N., and KIZILOVA, M. D., Primorskaya Antiplague Station

"Sensitivity of Some Primorskiy Kray Rodents to Tularemia Under Experimental Conditions"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 12, 1972, pp 70-73

Abstract: Tularemia susceptibility of 265 small rodents of three types, caught during winter and quarantined for 1 month, was tested by inoculating them subcutaneously with 0.5 ml of a suspension containing from 1 to 10^{10} cells of Fr. tularensis strain No 760. White mice used as controls died in 4-7 days after introduction of 1 microbial cell. Similarly, all 35 Mycromys minutus died in 3-7 days from acute infection. Necropsy revealed multiple hemorrhages in the liver and lungs, pulmonary hyperemia, and enlargement of the spleen. All tissue samples yielded abundant microbial growth. Of 120 Microtus fortis, 69 died in 5-19 days (LD_{50} was 5,600 bacteria) with similar pathology. Bacteriological investigations of the 51 survivors were positive in 5 cases, and the antibody titer was 1:1,600. Of 110 Apodemus agrarius Pall., 31 died in 3-9 days (LD_{50} was 31,620,000 bacteria) with similar pathological changes. Tularemia pathogen was isolated from two of the 79 surviving animals, and the antibody titer was 1:320. Thus, Mycromys minutus belongs to tularemia sensitivity group

USSR

KHVESHCHENKO, Ye. N. and KIZILOVA, M. D., Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 12, 1972, pp 70-73

I, while Microtus fortis and Apodemus agrarius Pall. belong to group II. The serological method is recommended in addition to the bacteriological method in the investigation of natural foci of tularemia.

USSR

UDC 624.072.2.04:539.376

KIZIRIYA, G. V., GVINCHIDZE, G. I., Tbilisi

"Determination of Forces in Statically Indeterminate Structures Considering Creep of Concrete"

Podol'sk, Stroitel'naya mekhanika i raschet sooruzheniy, No. 5, 1971, pp 46-50

Abstract: The change in forces in multiply statically indeterminate structures where the individual bearing elements are combined elements, i.e., made of concretes of different properties reinforced with ordinary and prestressed reinforcement rods, is determined. It is assumed that the spanning structures are erected in the following sequence: first fabricated and installed in place are prestressed rigidity beams and then the assembly plates are installed. The rigidity beam receives a deformation under the action of the prestress and the natural weight. If the rigidity beam were not strengthened with a girder, these deformations would develop freely without causing any additional forces as a result of the creep of concrete. However, the assembled girder in disturbing the free development of deformations of creep of the concrete in the rigidity beam will take up part of the forces acting in the beam and consequently unload it. Solutions based on the linear theory of an elastic-creep body and the

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USSR

KIZIRIYA, G. V., GVINCHIDZE, G. I., Stroitel'naya mekhanika i raschet sooruzheniy, No. 5, 1971, pp 46-50

theory of aging are given. It is assumed that there are no cracks in the structure. A program was compiled for the BESM-4 computer to determine forces considering the creep of concrete in experimental beams. The forces at the connections were calculated considering deformations of the creep of the concrete on the basis of the theory of an elastic-creep body, the modified theory of aging, and the theory of aging. The divergence between experiment and theory in the calculations were: 5% in calculations based on the theory of elastic-creep body, 20% in calculations based on the modified theory of aging, and 30% in calculations based on the theory of aging.

2/2

USSR UDC 542.91:547'1'118

AKAMSIV, V. D., YELISEYENKOVA, R. M., and KIZPOLOZHENSKIY, N. I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzova, Academy of Sciences USSR

"Esters of the Thioacids of Trivalent Phosphorus. Part 12. Esters of Ethyl(Phenyl-β-cyanalkylthiolphosphinic and Ethyl(Phenyl)-α-ketoalkylthiolphosphinic Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, 1, Jan 73, pp 80-84

Abstract: A study was made of the reaction of acyl chloride esters of thiophosphonic acids (I) with α,β-unsaturated nitriles of acrylic and methacrylic acids in the presence of thioacetic acid, acetic acid, and water result in the formation of the esters of the alkyl(aryl)-β-cyanalkylthiophosphinic acids (II); but with thioacetic acid as the proton donor, the products are the esters of the β-cyanalkyldithiophosphinic acids. The reaction of (I) with α,β-unsaturated ketones and acrylonitriles in the presence of water resulted in the formation of the esters of ethyl(phenyl)-α-ketoalkylthiolphosphinic acid or of (II).

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USSR

UDC 539.3

KIZYMA, Yu. M., Tarnopol'

"The Pressure of An Elastic Cylinder on an Elastic Layer of Finite Thickness"

Moscow, Izvestiya Akademii Nauk, Mekhanika Tverdogo Tela, No 3, May-Jun 72, pp 64-73

Abstract: Reference is made to author's previous publications on the contact interaction of an elastic cylinder and a half-space, where the effect of correlations of moduli of elasticity on the stress-deformed state of a body was investigated (Ibid., 1969, No 4, and Prikladnaja Mekhanika, 1967, Vol 3, No 2). The elastic equilibrium of a system consisting of a circular cylinder and a layer of finite thickness is analyzed by mutual contact and the effect of the thickness of the layer by different correlations of Young's moduli is investigated. Formulas are derived for the determination of all factors characterizing the stress-deformed condition of the system. Diagrams show for special cases the results of numerical calculations based on the solution of a system of linear algebraic equations with a symmetrical matrix the coefficients of which are functions of the dimensionless thickness of the layer and the height of the cylinder. The thickness of the layer was found to affect the magnitude of stresses and dislocations, but it does not affect their character, and its effect is negligible by Young's moduli < 0.25. Five illustr., nineteen formulas, four biblio. refs.

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USSR

UDC 621.9

KLABUKOV, Senior Instructor, KESTNER, O. Ye., Candidate of Engineering Sciences and Docent, and ZUYEV, A. M., Candidate of Physical and Mathematical Sciences and Docent, Kurgan Machine Building Institute

"Effect of Pressure on Friction and Wear of Alloy VT-14 and Steel 30KhGSA"

Moscow, IzVUZ--Mashinostroyeniye, No 12, 1972, pp 129-132

Abstract: The friction and wear between titanium alloy VT-14 and hardened steel 30KhGSA was studied with and without lubricants. Lubricants used were transformer oil, TSIATIM-201 and machine oil. A slip rate of 0.17 m/sec and pressures from 2.5 to 50 kg/cm^2 were used in the tests. It was determined that the use of lubricants does not particularly decrease friction and wear between the two metals. The specific wear of VT-14 was lower without the use of a lubricant than with it. The reason given for intensification of wear on alloy VT-14 when a lubricant was used was that the lubricant prevents oxygen and nitrogen from penetrating the friction surface which in turn prevents cold working of the surface; thus the metal never increases in microhardness at the surface layer. 4 figures, 1 table, 11 bibliographic references.

1/1

USSR

UDC 621.224(088.8)

KLABUKOV, V. M., LYUBITSKIY, K. A., OSTROUMOV, S. N.

"Hydroturbine Regulator"

USSR Author's Certificate No 261998, filed 3 Sep 68, published 25 May 70 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D-117 P)

Translation: A hydroturbine regulator (see the figure) containing an oil servodrive NA with a slide valve and choke installed on the oil drain after the slide valve is described. This regulator is distinguished by the fact that in order to insure optimal speed of closing the NA for each ratio of pressure and HA position on dropping the load, the choke is coupled via an arm to the pulley of a three-dimensional cam gear the cam shaft of which is connected to the HA, and the pulley arm is connected to the drive of the pressure meter.

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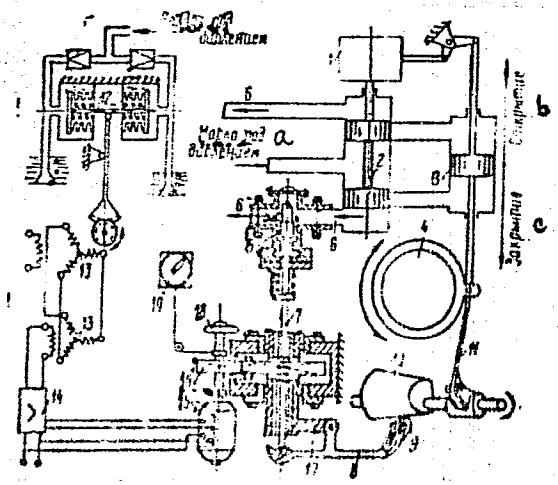
USSR

KLABUKOV, V. M., et al, USSR Author's Certificate No 261998, filed 3 September 1968, published 25 May 1970



Key: a. oil under pressure
b. open
c. closed
1 - regulator; 2 - slide valve; 3 - servomotor; 4 - NA; 5 - choke; 6 - overflow; 7 - connecting rod with spring; 8 - arm; 9 - pulley of the cam gear; 10 - cam shaft; 11 - pull rod; 12 - pressure meter; 13 - remote transmission; 14 - amplifier; 15 - electric motor; 16 - mechanical transmission; 17 - rotating bushing; 18 - manual drive; 19 - pressure indicator

2/2

USSR

UDC 629.7.036.54(536.246+536.9)001.2

ALEMASOV, V. YE., KLABUKOV, V. YA., SAGADEYEV, V. I., LUK'YANOV, YU. G., SHIGAPOV, A. B., and KUZ'MIN, V. A.

"Indicatrix of Oxide Particle Dissipation in Products of Combustion"

Kazan', Tr. Kazan. Aviats. In-ta (Works of Kazan' Aviation Institute), No 133, 1971, pp 20-29 (from Referativnyy Zhurnal-Aviatsionnyye i Raketnyye Dvigateli, No 2, Feb 72, Abstract No 2.34.118)

Translation: When studying the thermal radiation energy in combustion products containing solid and liquid particles of condensed aluminum, magnesium and other oxides we must know the angular distribution of dissipation radiation (dissipation indicatrix) as well as the absorption and dissipation coefficients. Presently available data on dissipation indicatrix apply basically to atmospheric physics problems. The article presents the algorithm developed by the authors for calculating the dissipation indicatrix by means of M-20, M-220 and BESM-4 computers. Indicatrix calculations with BESM-4 computers for wide range of temperatures and particle sizes of the products of combustion are also presented. 10 illustrations, 16 references.

1/1

1/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--SYNTHESIS OF OPTICALLY ACTIVE POLY(MENTHOXYALKYL) AND POLY (MENTHOXYCARBONYL) POLYSILOXANES -U-

AUTHOR-(04)-ANDRIANOV, K.A., VOLKOVA, L.M., KLABUNOVSKIY, E.I., MAMEDOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN, SER. B 1970, 12(1), 6-10

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SILOXANE, POLYCONDENSATION, OPTIC ACTIVITY, CHEMICAL SYNTHESIS, ORGANOSILICON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0924 STEP NO--UR/0460/70/012/001/0006/0010

CIRC ACCESSION NO--AP0055622

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0055622

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HYDROLYTIC POLYCONDENSATION OF MESI(OET) SUB2 CH SUB2 CH SUB2 OR (R IS MENTHYL) WITH 3PERCENT HCL SOLN. AT 50-60DEGREES GAVE (ROCH SUB2 CH SUB2 SIMEO) SUBN (HOCH SUB2 CH SUB2 SIMEO) SUBM. THE POLYCONDENSATION OF RO(CH SUB2) SUB3 SIMECL SUB2 IN THE PRESENCE OF NAHCO SUB3 AND A SMALL AMT. OF H SUB2 O GAVE 77.6PERCENT (RO(CH SUB2) SUB3 SIR PRIME1 O)' SUBN (I) (R PRIME1 EQUALS ME). SIMILARLY, O(SIME SUB2 CH SUB2 CH SUB2 CO SUB2 R) SUB2 (II) (OSIMECH SUB2 CHMECO SUB2 R) SUBN, (OSIMECH SUB2 CH SUB2 CO SUB2 R) SUBN, (OSIME (CHMECO SUB2 R) SUBN (III), I (R PRIME1 EQUALS ET. OR PH), (ROCH SUB2 CH SUB2 SIMEO)SUBN, (ROCH SUB2 CH SUB2) SIO SUB1.5)SUBN, (RO(CH SUB2) SUB3 SIO-SUB1.5) SUBN, (O SUB1.5 SICH SUB2 CHMECO SUB2 R) SUBN, AND O SUB1.5 SICH SUB2 CO SUB2 R) SUBN WERE PREPD. ALL THESE POLYSILOXANES ARE OPTICALLY ACTIVE AND (EXCEPT III) DO NOT DECOMPD. AT 200DEGREES-2 MM; II IS DISTILLABLE AT 205DEGREES-05 MM.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201330008-2"

1/2 029 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--POLYMERIZATION OF OPTICALLY ACTIVE ISOAMYL GLYCIDYL EHTER IN THE PRESENCE OF A DIETHYLZINC WATER CATALYTIC SYSTEM -U-

AUTHOR-(03)-IICHENKO, A.A., PONOMARENKO, V.A., KLABUNOVSKIY, YE.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970. (1), 70-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OPTIC PROPERTY, STEREO CHEMISTRY, POLYMERIZATION, ETHER, CHEMICAL REACTION RATE, ORGANOZINC COMPOUND, CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0731 STEP NO--UR/0062/70/000/001/0070/0073

CIRC ACCESSION NO--AP0113595

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0113595

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SP. OPTICAL ROTATION (ALPHA) AT 407.7 MU OF POLY (ISOAMYL GLYCIDYL ETHER) I, OBTAINED BY THE ANIONIC COORDINATION POLYMN. IN THE PRESENCE OF 1:1 ET SUB2 ZN-H SUB2 O, INCREASED TO A MAX. OF EQUIVALENT 60DEGREES WHEN THE CONVERSION REACHES 18PERCENT AND DECREASES SUBSEQUENTLY. THIS IS DUE TO THE EXISTENCE OF 4 OPTICAL ISOMERS OF ISOAMYL GLYCIDY ETHER WHICH HAVE DIFFERENT (ALPHA) AND DIFFERENT POLYMN. RATES. ("ISOAMYL" IN THIS CASE IS A MIXT. OF 3 METHYLBUTYL AND OPTICALLY ACTIVE 2 METHYLBUTYL.) THE INCREASE IN I (ALPHA) DETN. TEMP. FROM 20 TO 40DEGREES INCREASES (ALPHA) EQUIVALENT 2.5 TIMES. THE MOL. WT. OF I INCREASES WITH THE CONVERSION.

FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

USSR

BUDAGOV, YU. A., VINOGRADOV, V. B., VOLOD'KO, A. G., DZHELEPOV, V. P., KLADNITSKIY, V. S., KUTSIDI, N. K., Tbilisi State University, LOMAKIN, YU. F., MAKSIMENKO, V. A., MARTINSKA, G., FLYAGIN, V. B., KHARZHEYEV, YU. N., and SHANDOR, L.

"Possible Existence of $\pi^- \gamma$-Resonance With a Mass of 270 MeV"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 13, No 12, 20 Jun 71, pp 665-668

Abstract: The preliminary results of this experiment were presented in 1970 at the Fifteenth International Conference on High-Energy Physics in Kiev. The authors find experimental signs of the possible existence of a new meson resonance. They observe a narrow peak when M = 270 MeV in the spectrum of effective masses of the system $\pi^- \gamma$, which forms in the reaction $\pi^- p \rightarrow \pi^- p + (2.3)\gamma$ at 5 GeV/c. The authors study events of the type $\pi^- p \rightarrow \pi^- p + (2.3)\gamma$ which satisfy the following conditions: (1) the protons are identified by ionization and stopping in the camera, and the impulses of the protons do not exceed 900 MeV/c; (2) the length of the tracks of secondary charged particles from the star is no less then 2 cm, and the impulses of these particles are measured with an

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201330008-2"

USSR

BUDAGOV, YU. A., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 13, No 12, 20 Jun 71, pp 665-668

accuracy no worse than 30%; (3) the γ-quanta have impulses greater than 30 MeV/c, measured with an accuracy no worse than 25%; (4) the scattering angles between the two γ-quanta do not exceed 2°. As a result of the experiment, the authors find that the effect which they observed is caused by the existence of a new meson resonance. The figures depict the distribution by effective mass of quanta. The article contains 2 figures and a bibliography of 7 entries.

2/2

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USSR

BUDAGOV, YU. A., VINOGRADOV, V. B., VOLOD'KO, A. G., DZHELEPOV, V. P., KIRILLOV-UGRYUMOV, V. G., KLADNITSKIY, V. S., KUZNETSOV, A. A., LOMAKIN, YU. F., MEL'NIKOVA, N. N., PONOSOV, A. K., FLYAGIN, V. B., SHLYAPNIKOV, P. V., MARTINSKA, G.(1), BOLDEA, V. (2), MIKHUL, A. (2), MUMUYANU, D. (2), PONTA, T. (2), FELEA, S. (2), and CHADRAA, B. (3), Joint Institute of Nuclear Research; (1) University imeni P. I. Shafarik, Koshitse, Czechoslovak SSR; (2) Institute of Atomic Physics, Bucharest, Romania; (3) Physics Institute of the Academy of Sciences Mongolian People's Republic, Ulan-Bator

"Study of the Mass Spectrum of a ΛK-System in $\pi^- p$-Interactions at 4 and 5.1 Gev/c"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 11, No. 1, 5 Jan 70, pp 31-35

Abstract: The results of a study of the spectrum of the effective masses of a ΛK-system are reported. The spectrum was obtained in investigating $\pi^- p$-interactions in a 24-liter and a 1-meter propane bubble chamber irradiated in π-meson beams of the proton synchrotron of the Joint Institute of Nuclear Research with pulses of 4 and 5.1 Gev/c, respectively. An investigation of the structure of the effective mass spectrum of a ΛK-system was of interest from the viewpoint of observing new

USSR

BUDAGOV, YU. A., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 11, No. 1, 5 Jan 70, pp 31-35

resonances with zero strangeness and the decays of different isobars via the channel $N^* \to \Lambda + K$, to determine the relative probabilities of these decays. Approximately 230,000 photographs were analyzed for each bubble chamber. The effective mass spectra of ΛK^0 combinations for events in which the decays of a Λ-hyperon and a K^0-meson were simultaneously recorded in the chamber are graphed. The graphs show a considerable excess in the number of events above the background in the mass region 1.61-1.96 Gev/c^2. It is shown that this anomaly is not associated with the reflection of known resonances Y^* (1385) and K^* (890) in the ΛK^0-spectrum. The total excess in the number of events over the background in the mass interval 1.61-1.96 Gev/c^2 was 114 ± 13. The experimental data verify the existence of two resonances with masses about 1685 and 1935 Mev/c^2 and widths of the order of 150 Mev/c^2. It is concluded that the anomaly observed in the effective mass spectrum of ΛK can be explained only by the decay of the isobar S_{11} (1710), P_{11} (1750) via the channel $N^* \to \Lambda + K$ or by the existence of a new resonance with mass about 1685 Mev/c^2, as the data of R. Erbe et al indicate.

2/2

USSR

KLADOV, G. K.

"One Method of Decoding"

Vychisl. Mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Technology -- Collection of Works], No 3, Khar'kov, 1972, pp 119-125 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V477, by the author).

Translation: A generalization is suggested for a discrete Fourier transform, used by Rudolph for decoding of linear codes over a simple field. The generalized transform is suitable for any finite field. Its use has certain advantages even in the case of a simple field. Examples are studied, illustrating the use of the suggested transform for decoding of linear codes.

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USSR

KLADOV, G. K.

"One Generalization of the Korr Substitution"

Vychisl. mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Equipment -- Collection of Works], No 2, Khar'kov, 1971, pp 64-65 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V476 by S. Gel'fand).

Translation: The Korr substitution $g(x) \rightarrow g(x^l)$ allows a cyclical code correcting t individual errors to be transformed to a code correcting t packets of errors of length l. A generalization of this structure for the case of an arbitrary code generated by ideal V of group algebra FG of finite group G over finite field F is presented. It is demonstrated that this generalization is the well-known structure of an induced modulus from subgroup H into group G. The length of packets l is equal to the index of H in G in this case.

1/1

USSR

KLADOV, G. K.

"Cyclical Analogues of Radical Codes"

Vychisl. mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Equipment -- Collection of Works], No 2, Khar'kov, 1971, pp 62-63 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V474 by S. Gel'fand).

Translation: Let F be a finite field of characteristic p, G be a finite abelian p-group of type $(r_1, \ldots, r_s)$. Radical codes refer to codes corresponding to ideals I of group algebra FG of group G, which are the powers R^j of radical R of algebra FG. This work presents a structure allowing certain radical codes to be used to construct their cyclical analogues. This structure is as follows. Suppose $r_1 = r_2 = \ldots = r_s = 1$. In this (and only this) case, group G has automorphism π, cyclically representing all its elements. Let us assume further $V = R^{t-1}$, where t is the order of nilpotency of radical R. Then factor-code R^j/V will be a cyclical code for all $j = 1, \ldots, t - 2$, its dimensionality is one less than the dimensionality of code

USSR

KLADOV, G. K., Vychisl. mat. i Vychisl. Tekhn., No 2, Khar'kov, 1971, pp 62-63.

R^j, and the code distances correspond to the code distance of code R^j.

2/2

USSR

KLADOV, G. K.

"Linear Codes Over Semisimple Commutative Rings"

Vychisl. mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Equipment -- Collection of Works], No 2, Khar'kov, 1971, pp 66-67 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V475 by S. Gel'fand).

Translation: The ordinary method of information transmission in the algebraic theory of coding is that in which information is transmitted as a sequence of symbols from a certain finite alphabet A, which is divided by the structure of a finite field. In this case, the number of elements in A should be a power of a simple number.

This limitation is sometimes undesirable. This article analyzes a generalization of the ordinary situation, consisting in that set A is divided by the structure of a finite semisimple commutative ring. It is demonstrated that the standard expansion of unity to a sum of mutually orthogonal itempotents immediately reduces the codes in this case to a set of codes over fields. An example is presented, showing that the correcting capability of the new codes may be in some cases better than that of ordinary algebraic codes.

1/1

USSR UDC 621.791.72:669.195.001.5

GRUZDEV, B. L., Candidate of Technical Sciences, KLADOV, YE. I., Engineer, and BULGAKOV, I. YA., Engineer, Ufa Aviation Institute imeni Sergo Ordzhonikidze

"Some Features of Electron-Beam Welding of VT5-1 Alloy"

Moscow, Svarochnoye Proizvodstvo, No 2 (460), Feb 73, pp 19-21

Abstract: The advantages of electron-beam (EB) welding of VT5-1 alloy in vacuum, in comparison with manual argon-arc (AA) welding, are discussed. In EB welding, the part of initial and additional materials participating in the development of the joint decreases by 73 times and the content of hydrogen is 2.5 times lower than in AA welding. In a comparison of EB and AA thermal cycles, the volume of melting metal and the magnitude of the elastic-plastic deformation zone decreases considerably in EB welding. Mechanical test results demonstrate the much higher strength characteristics of EB welded joints. The application of EB welding for 10-11-mm-thick joints of VT5-1 titanium alloy is, from the standpoint of quality and economy, more expedient than AA welding. Four figures, four tables, five bibliographic references.

1/1

USSR UDC 628.35

KARYUKHINA, T. A., KLEYN, S. A., SHANGINA, G. A., YANGOLENKO, L. V., and KRZHAPOL'SKAYA, L. Z., Moscow Construction Engineering Institute imeni V. V. Kuybyshev

"Biological Methods of Purifying Sewage From Chemical and Pharmaceutical Plants"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 11, 1971, pp 30-35

Abstract: The 1960-1969 literature on the subject is reviewed and the most effective methods discussed. In some instances, when the sewage contains no toxic compounds, it may be used directly for irrigation of fields. In most cases, a combined method yields the best results. Sewage containing large amounts of hormones must first be treated anaerobically. It is then aerated (waterfalls, air turbines, or other systems) for several hours up to 2 weeks, depending on what substances it contains. This aeration reduces the biological oxygen requirement by 90-98%. Neutralizers are added and the sewage is stirred until its pH becomes close to 7 (initial pH ranges from 2 to 10). Next, the sewage is kept standing in reservoirs. Harmless bacteria may be grown in it and later precipitated with chlorine. After adequate sedimentation of suspensoids, the sewage is run through sand and gravel filters,

USSR

KARYUKHINA, T. A., et al., Khimiko-Farmatsevticheskiy Zhurnal, No 11, 1971, pp 30-35

floating matter and deposits are collected, burned, and used as fertilizers or admixture to feeds. This treatment removes up to 95% of suspensoids. The filtrate may be drained into rivers and lakes, or it may be stored in reservoirs and be utilized during summer. Theoretical data indicate that practically any sewage can be purified adequately at reasonable cost.

2/2

USSR UDC: 681.332.65

KALASHNIK, L. I., KLADOV, G. K., LYAKHOVITSKIY, Ye. M., SHPIL'BERG, A. Ya.

"Random Number Generator Based on Shift Register"

Sb. Nauchn. Tr. Fiz-Tekhn. In-t Nizk. Temperatur AN USSR [Collected Scientific Works of Physics-Technical Low Temperature Institute, Academy of Sciences Uk SSR], No 1, 1969, pp 101-116 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, 1970, Abstract No 10B128, by T. Ya.)

Translation: A random number generator (RNG) is described which is based on two shift registers with linear feedback. The device consists of three functional elements: an invertor, flip-flop and shaper; the first register generates a sequence of 28-digit numbers, the feedback function being determined by the polonomial 2000000011, and the second register generates a 29-digit number with the polonomial 4000000005; the feedback is realized using half adders. The device contains a control system designed to provide access of the digital computer to the RNG based on M-20 computer units: tubes, amplifiers-shapers, and dynamic flip-flops. The generator has two modes: in the write mode the initial constants are recorded in the registers; in the read mode the random sequence is output. A test is performed to check the RNG, modeling operation

1/2

USSR

KALASHNIK. L. I., et al, Sb. Nauchn. Tr. Fiz-Tekhn. In-t Nizk. Temperature AN USSR [Collected Scientific Works of Physics-Technical Low Temperature Institute, Academy of Sciences Uk SSR], No 1, 1969, pp 101-116 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, 1970, Abstract No 10B128, by T. Ya.)

of the RNG on a digital computer, and comparing the outputs of the RNG and the computer. Results are presented of an experimental check of the statistical characteristics of sequences generated by the RNG, namely: frequency with which numbers fall into certain intervals, frequency of output of numbers with definite numbers of ones, regularity of output of series, etc. Four illustrations; five tables; six biblio. refs.

2/2

1/2 034 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--VAPOR PHASE RADIATION THERMAL OXIDATION OF BENZENE BY MOLECULAR OXYGEN DURING IRRADIATION BY FAST ELECTRONS -U-

AUTHOR-(04)-TIMOFEYEV, V.D., YURYEV, Z.N., KLAPISHEVSKAYA, Z.B., BORISOV, YE.A.

COUNTRY OF INFO--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(1), 42-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ELECTRON ACCELERATOR, THERMAL OXIDATION, PHENOL, CRESOL, CARBON MONOXIDE, CARBON DIOXIDE, BENZENE, ELECTRON RADIATION, ACTIVATION ENERGY, OXYGEN/(U)RUP400 ELECTRON ACCELERATOR, (U)U16 ELECTRON ACCELERATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0574 STEP NO--UR/0204/70/010/001/0042/0047

CIRC ACCESSION NO--AP0119492

UNCLASSIFIED

2/2 034 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119492

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TITLE PROCESS WAS STUDIED UNDER DYNAMIC CONDITIONS OF 1 ATM AND 50-3000 ML-HR AT SMALLER THAN OR EQUAL TO 800DEGREES USING ELECTRON ACCELERATORS RUP-400 AND U-16 (1.5 TIMES 10 PRIME15 AND 1.6 TIMES 10 PRIME17 EV-CM PRIME3-SEC, RESP.) FOLLOWED BY THE CHROMATOGRAPHIC ANAL. OF THE PRODUCTS PHOH, PH SUB2, CRESOLS, CO AND CO SUB2. IN RADIATION THERMAL OXIDN. (RTO), THE DEPENDENCE OF PHOH YIELD ON TEMP., C SUB6 H SUB6: O SUB2 RATIO, TIME OF CONTACT, AND CONCN. OF ADDED CYCLOHEXANE WAS STUDIED AND COMPARED WITH THERMAL OXIDN. (TO) UNDER THE SAME CONDITIONS. THE YIELD OF PHOH IN RTO WAS ALWAYS HIGHER THAN IN TO, THE MAX. PHOH CONCN. BEING 4 WT.PERCENT. THE QUANTUM YIELD WAS 40 MOLS.-100 EV AT MAX. CONCN. EFFECTIVE ACTIVATION ENERGY OF PHOH FORMATION WAS 70 AND 49 KCAL-MOLE FOR RTO AND TO, RESP. (MEASURED IN TEMP. INTERVAL 700-80DEGREES). FACILITY: NAUCH.-ISSLED. FIZ.-KHIM. INST. IM. KARPOVA, MOSCOW, USSR. .

UNCLASSIFIED

USSR UDC 547.532-13:542.943:66.085.5

TIMOFEYEV, V. D., YUR'YEV, Z. N., KLAPISHEVSKAYA, Z. B., and BORISOV, YE. A., Scientific Research Physico-Chemical Institute imeni L. Ya. Karpov, Moscow, State Committee for Chemistry

"Vapor Phase Radiation-Thermal Oxidation of Benzene With Molecular Oxygen Under Fast Electron Irradiation"

Moscow, Neftekhimiya, Vol 10, No 1, Jan-Feb 70, pp 42-47

Abstract: The authors studied the radiation-thermal oxidation of benzene with molecular oxygen in terms of the effect of temperature on the yield of phenol -- the yield increases with temperature increase; the effect of the ratio benzene:oxygen -- a trend towards higher yields with more oxygen was observed; effect of the contact time -- inverse relationship of the yield to contact time. The yield of phenol in this reaction was found to be always higher than in the thermal reaction, maximal yield being 4 weight-%. The radiation-chemical yield of phenol at maximal concentration was 40 molecules per 100 ev of the absorbed radiation energy. The effective energy of activation for the formation of phenol was found to be 70 Kcal/mole for the thermal process and 49 Kcal/mole for the radiation-thermal process at 700-780°.

1/1

USSR

UDC: 620.193.2:669.717

MIKHAYLOVSKIY, Yu. N., KLARK, G. B., SHUVAKHINA, L. A., AGAFONOV, V. V., ZHURAVLEVA, N. I., Institute of Physical Chemistry, Academy of Sciences of the USSR

"Calculating the Rate of Atmospheric Corrosion of Aluminum and its Alloys in Different Climatic Zones With Respect to Meteorological Parameters"

Moscow, Zashchita Metallov, Vol 9, No 3, May/Jun 73, pp 264-269

Abstract: The purpose of the paper was to study the influence of meteorological parameters (humidity and air temperature, time of saturation of the metal surface by phase layers of moisture, chemical composition of the atmosphere) on the rate of corrosion of aluminum and its alloys under natural conditions, and to develop engineering methods of calculating the corrosion effects to be expected on these materials in any climatic zone. The research procedure is described in a previous paper (Yu. N. Mikhaylovskiy et al., Zashchita Metallov, 1971, Vol 7, p 154). The specimens were aluminum and alloys D16T, AMG-6 and 01915. The studies were done in rural and industrial regions in the central zone, and in the coastal regions of the North and South. The results of previous tests in tropical zones with

1/2

USSR

MIKHAYLOVSKIY, Yu. N. et al., Zashchita Metallov, Vol 9, No 3, May/Jun 73, pp 264-269

known meteorological characteristics were also used. The specimens and instrumentation were exposed in an open area and in a louvered enclosure where phase layers of moisture settled on the metal surface due to precipitation, dew, and drop condensation. In the open atmosphere, the specimens and sensors were exposed on stands turned toward the south at an angle of 45° to the horizontal. In the louvered booths, the specimens were held vertically. An analysis of the results of the corrosion sensors shows that in spite of the complex influence of temperature, aluminum corrosion can be calculated with respect to averaged quantities, yielding satisfactory agreement with natural tests. The average rate of aluminum corrosion under "clean" atmospheric conditions is nearly independent of the nature of the moisture film, which is typical of metals which retain their passive state under atmospheric conditions. Corrosion parameters were determined which are necessary for calculating the rate of corrosion of aluminum and its alloys in any climatic zone from meteorological data.

2/2

USSR

UDC 620.193.2

MIKHAYLOVSKIY, YU. N., SHUVAKHINA, L. A., KLARK, G. B., and AGAFONOV, V. V., Academy of Sciences USSR, Institute of Physical Chemistry

"Method of Studying the Influence of Climatic Parameters on the Rate of Atmosphere Corrosion of Metals"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 154-158

Abstract: A method is suggested allowing continuous recording of the rate of atmospheric corrosion of metals. The method is based on measurement of the electrical resistance of a thin layer of the metal (vacuum condensate or thin foil) during the process of corrosion. The design of sensors for the method is described and illustrated.

1/1

KLARK, G. B.

JPRS 55554

28 March 1972

CORROSIVE STABILITY OF METALS AND METAL COATINGS UNDER ATMOSPHERIC CONDITIONS

UDC 669+626.193:2.001.5

[Foreword to book by G. K. Burkhanis and G. B. Klark, Moscow, Korrozionnaya Ustoychivost' Metallov i Metallicheskikh Pokrytiy v Atmosfernykh Usloviyakh, Russian, 1971, signed to press 6 July 1971, pp 3-4]

Atmospheric corrosion is one of the most widespread forms of corrosive destruction of metals. Approximately 80 percent of the total amount of metal in the form of structures, machines, and devices are used under atmospheric conditions. The national economy sustains great losses because of the premature breakdown of a series of metal items caused by corrosion. Occasionally even insignificant corrosive destruction can cause a costly construction, device, or mechanism to become inoperative. Thus, for example, a layer of corrosion products on the contacts of electrical circuits can change their contact resistance and disrupt the proper operation of the entire system. A hardly noticeable tarnishing on mirror surfaces, resulting from corrosion, sharply diminishes the parameters of different optical devices, and lasers especially.

The rate of corrosive destruction of various metal items in the atmosphere is determined by ambient conditions, that is, meteorological factors and pollution of the air with corrosive active gases and saline admixtures.

At the present time, the theory of atmospheric corrosion applicable to actual conditions, is in a formative stage and there is no practical scientifically sound method for strict quantitative computation of the corrosion rate of metals for any climatic area. In other words, from purely theoretical concepts, one cannot numerically forecast what the rate and distribution of corrosion will be in one metal or another under different atmospheric conditions. The latter creates the need for prolonged corrosion testing at corrosion stations especially established for this goal.

Hundreds of corrosion stations are at work in the USSR and abroad at which various metallic systems and protective means are tested.

USSR

UDC 620.193.2

MIKHAYLOVSKIY, YU. N., KLARK, G. B., SHUVAKHINA, L. A., SAN'KO, A. P., GLADKIKH, YU. P., and AGFONOV, V. V., Insitute of Physical Chemistry, Academy of Sciences USSR

"Calculation of the Atmospheric Corrosion Rate of Zinc and Cadmium Coatings in Different Climatic Areas"

Moscow, Zashchita Metallov, Vol 7, No 5, 1971, pp 534-539

Abstract: Zinc and cadmium are taken as examples in developing a general method of calculatingthe rate of atmospheric corrosion for any climatic zone in which corrosion related both to adsorption and phase moisture layers is taken into account. The meteorological factors involved included relative humidity, air temperature, the time during which the metal was wetted with phase mositure layers, and the content of corrosive admixturos in the atmosphere. Artificial climate chamber studies confirmed the linear dependence of the rate of zinc and cadmium corrosion on the SO_2 concentration (within the range 0.18-5 mg/m^3). The maximum rate of zinc and cadmium corrosion in rural areas in any climatic zone cannot exceed $\sim$10 g/m^2 · year in closed quarters and $\sim$ 30-40 g/m^2 · year out in the open. These values climb sharply when SO_2 is present in the

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USSR

MIKHAYLOVSKIY, YU. N., et al., Zashchita Metallov, Vol 7, No 5, 1971, pp 534-539

atmosphere. For example, in an industrial atmosphere containing 0.2-0.3 mg/m^3 SO_2, the rate of zinc and cadmium corrosion increases by an order of magnitude and in a heavily contaminated atmopshere with high humidity can reach a level of 100-200 $g/m^2 \cdot year$. The difference between the corrosion rates of relatively thick ($\geq$ 20-30 microns) zinc and cadmium coatings and pure zinc and cadmium is not great, generally.

2/2

USSR

UDC: 669:620.193.2.001.5

BERUKSHTIS, G. K. and KLARK, G. B.

Corrosion Resistance of Metals and Metal Surface Coatings Under Atmospheric Conditions (Korrozionnaya ustoychivost' metallov i metallicheskikh pokrytiy v atmosfernykh usloviyakh), Moscow, "Nauka" Press, 1971, 160 p., 127 illustrations, 47 tables, 217 bibliographic references.

The book correlates the results of corrosion tests performed on metals and metal surface coatings over a period of years in various climatic zones of the USSR, explaining the role of meteorological factors and aggressive air contaminants (SO_2, Cl and others) in the corrosion of metals. Data on the physicochemical properties of atmospheric corrosion products are cited and an analysis of the effect of metal dissolution products on corrosion rates is presented. Much consideration is given to problems of scientific substantiation of predicting atmospheric corrosion rates on the basis of meteorological characteristics with allowance for contamination by industrial gases and sea water aerosols. The edition is intended for a wide circle of specialists associated with branch institutes, manufacturing establishments, and corrosion laboratories; it may also serve as an educational aid for students and those doing graduate work in various types of corrosion and metal protection techniques.

1/3

USSR

BERUKSHTIS, G. K., and KLARK, G. B., Corrosion Resistance of Metals and Metal Surface Coatings Under Atmospheric Conditions, Moscow, "Nauka" Press, 1971, 160 page

TABLE OF CONTENTS (Abriged):

2/3

USSR

BERUKSHTIS, G. K., and KLARK, G. B., Corrosion Resistance of Metals and Metal Surface Coatings Under Atmospheric Conditions, Moscow, "Nauka" Press, 1971 160 page

3/3

USSR

UDC 620.193.2

MIKHAYLOVSKIY, YU. N., SHUVAKHINA, L. A., KLARK, G. B., and AGAPONOV, V. V., Academy of Sciences USSR, Institute of Physical Chemistry

"Method of Studying the Influence of Climatic Parameters on the Rate of Atmosphere Corrosion of Metals"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 154-158

Abstract: A method is suggested allowing continuous recording of the rate of atmospheric corrosion of metals. The method is based on measurement of the electrical resistance of a thin layer of the metal (vacuum condensate or thin foil) during the process of corrosion. The design of sensors for the method is described and illustrated.

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1/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EFFECT OF IRRADIATION ON THE PRECIPITATION OF SLURRIES -U-

AUTHOR-(03)-KLASSEN, V.I., MALYSHEVA, N.G., STARCHICK, L.P.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(11), 82-4

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SLIME, SEDIMENTATION, MINERAL, BAUXITE, FLUORITE, IRRADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0876 STEP NO--UR/0136/70/043/011/0082/0084

CIRC ACCESSION NO--AP0102837
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70

2/2 011
CIRC ACCESSION NO--AP0102837
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SEDIMENTATION RATES OF GALENA, PYRITE, QUARTZ, CALCITE, ABLITE, FLUORITE, AND BAUXITE WERE STUDIED. THE SIZE OF THE MINERAL PARTICLES WAS SMALLER THAN OR EQUAL TO 10 MU. THE CHANGE IN THE SEDIMENTATION RATE WAS DETD. PHOTOMETRICALLY. THE SUSPENSION WAS IRRADIATED BY USING A SPECIALLY DEVISED APP. AS SOURCES, PRIME90 SR PLUS PRIME90 Y AND PRIME144 CE PLUS PRIME144 PR WERE USED. THE TIME OF IRRADN. OF THE SUSPENSION (I.E., THE DOSAGE) VARIED FROM 30 MIN TO 6 HR. THE OPTIMUM IRRADN. TIME WAS 1-1.5 HR. ON IRRADN., THE RATE OF COAGULATION OF THE SLURRIES INCREASES BY 2.5 TIMES FOR CALCITE, AND BY 1.5 TIMES FOR ALBITE. IN THE PRESENCE OF COAGULANTS, SUCH AS H SUB2 SO SUB4 AND POLYACRYLAMIDE, THE COAGULATING ACTION OF THE IRRADN. IS PRESERVED AND EVEN INCREASES. THE MECHANISM OF THE EFFECT OF IRRADN. ON THE SEDIMENTATION OF SLURRY PARTICLES CAN POSSIBLY BE EXPLAINED BY THE FACT THAT THE WATER MOLS., UNDER THE INFLUENCE OF IONIZING RADIATION, ECOMP. INTO FREE H, OH, AND HO SUB2 RADICALS. BY REACTING, THEY CAN FORM H SUB2, O SUB2, AND H SUB2 O SUB2, AND CAN EVEN RECOMBINE TO AGAIN FORM H SUB2 O; IN ALL CASES, THE PH OF THE WATER IS ALTERED. AN ESP. LARGE EFFECT ON THE COAGULATION PROCESS OF THE SLURRIES IS EXERTED BY THE H AND OH RADICALS PRESENT IN THE SUSPENSION AS A RESULT OF RADIOLYSIS OF WATER. THE TIME WHICH HAS PASSED AFTER THE IRRADN. OF THE WATER ALSO HAS A SIGNIFICANT EFFECT ON THE SEDIMENTATION OF THE SUSPENSION.

UNCLASSIFIED

Acc. Nr: AT0107996 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code: UR0020

K

124952t Effect of the magnetic treatment of water on the concentration of dissolved oxygen. Klassen, V. I.; Shafeev, R. Sh.; Khazhinskaya, G. N.; Koryukin, B. M.; Stetskaya, S. A. (Inst. Gorvuch. Iskop., Moscow, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190(6), 1391-2 [Phys Chem] (Russ). The effect of passing H_2O through 10 magnetic fields on the effective concn. of O, C_o, in soln. was detd. After 5 min, C_o increased. This increase was most pronounced when the initial C_o was lowered by bubbling N through the H_2O. Increasing the period between the end of the magnetic treatment and the addn. of pyrogallol lowered C_o. GBJR

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REEL/FRAME
19891576

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--IMPROVEMENT OF THE BACTERIAL LEACHING OF COPPER -U-

AUTHOR-(03)-AGAFONOVA, G.S., KLASSEN, V.I., MARTYANOV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(5), 89-91

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--LEACHING, COPPER ORE, EXTRACTIVE METALLURGY, BACTERIA, MAGNETIC FIELD, HYDROMETALLURGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0131 STEP NO--UR/0136/70/043/005/0089/0091

CIRC ACCESSION NO--AP0132424

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132424

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY USING THIOBACILLUS FERROOXIDANS, THE TITLE EFFECT WAS PRODUCED BY THE APPLICATION OF A MAGNETIC FIELD TO A BACTERIAL SUBSPENSION OR TO A SOLN. OF FESO SUB4 (1.5 G.-L.) ACIDIFIED WITH H SUB2 SO SUB4 (TO PH 2.4-2.5) AND INOCULATED WITH BACTERIAL CULTURE. THE MAGNETIC FIELD WAS 150 OE AND WAS APPLIED FOR 10 SEC, AND THE BACTERIAL PROPAGATION INCREASED BY GREATER THAN 1.5 TIMES (AS COMPARED TO CONTROLS). SIMILARLY, THE REGENERATION OF FE PRIME3 POSITIVE FROM FE PRIME2 POSITIVE AFTER INOCULATION AND MAGNETIC FIELD TREATMENT PROCEEDED 1.6-1.7 TIMES FASTER THAN WHEN NO MAGNETIC FIELD WAS APPLIED.

UNCLASSIFIED

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UDC 622.7:621.039.8

USSR

KLASSEN, V. I., MALYSHEVA, N. G., and STARCHIK, L. P.

"Effect of Radioactive Radiation on the Process of Slurry Precipitation"

Moscow, Tsvetnyye Metally, No 1, Jan 70, pp 82-84

Abstract: In a study of the effect of radioactive radiation on the process of slurry precipitation, a special device was used for irradiating the suspension by means of an $Sr^{90} + Y^{90}$ source. The optimum irradiation time was 1-1.5 hrs. A study was made of the rate of precipitation of galenite, pyrite, quartz, calcite, albite, fluorite, and bauxite. The size of the mineral particles was 10 microns. The rate of precipitation of the suspension was determined photometrically. It was established that the rate of slurry precipitation under the effect of radioactive irradiation was increased for calcite 2.5 times, albite 1.5 times, etc. The mechanism of the effect of irradiation on slurry precipitation is explained.

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1/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--EFFECT OF HEAT TREATMENT ON THE STRENGTH OF MECHANICALLY TREATED CORUNDUM CRYSTALS -U-

AUTHOR-(05)-AKULENOK, YE.M., BAGDASAROV, KH.S., GOVORKOV, V.G., KLASSENNEKLYUDOVA, M.V., KHAIMOVMALKOV, V.YA.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 158-9

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MECHANICAL STRENGTH, THERMAL EFFECT, CORUNDUM, ABRASIVE, ALUMINUM OXIDE, CHROMIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0614 STEP NO--UR/0363/70/006/001/0158/0159

CIRC ACCESSION NO--AP0105597

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105597

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING RECENT YEARS THE AREA OF PRACTICAL APPLICATION OF CORUNDUM CRYSTALS HAS BEEN BROADENED CONSIDERABLY. THE EFFECT WAS STUDIED OF HEAT TREATMENT ON STRENGTH CHARACTERISTICS OF ARTICLES MADE FROM CORUNDUM CRYSTALS AND TREATED BY ABRASIVE MATERIAL. THE CIRCULAR FLEXURE METHOD WAS USED. THE STRENGTH DETN. WAS DONE FROM THE FRACTURE STRESS VALUE OF THE SAMPLES, AT ROOM TEMP. AND AT A DEFORMATION RATE OF 0.15MM-MIN. THE SAMPLES TESTED WERE GROWN IN FORM OF BOULES BY THE VERNEUIL METHOD. THE NORMAL TO THE SURFACE OF THE PLATES FORMED AN ANGLE OF 16DEGREES WITH THE MEAN VALUE OF 1120 DIRECTION. THE CR IMPURITY CONTENT IN THE AL SUB2 O SUB3 BATCH WAS 0.04 AT. PERCENT. IN ORDER TO REMOVE RESIDUAL STRESSES, THE SAMPLES WERE ANNEALED. THE INCREASE (2.5-3 TIMES) IN THE STRENGTH OF THE SAMPLES ACHIEVED AS A RESULT OF HEAT TREATMENT AT 1200DEGREES FOR 1 HR REMAINS UNCHANGED DURING THE SUBSEQUENT INCREASE IN THE ANNEALING TEMP. TESTS FURTHER SHOWED THAT INCREASING THE ANNEALING TIME 1-48 HR AT 1200-1700DEGREES DID NOT RESULT IN FURTHER INCREASE IN THE STRENGTH OF THE SAMPLES. THE RESULTS OBTAINED ARE INTERPRETED AS ELIMINATION OF THE EFFECT OF THE DEFECTS FORMING AT THE SURFACE OF THE SAMPLES DURING THEIR MECH. TREATMENT. THE RELATIVE HIGH SCATTER IN THE STRENGTH VALUES CAN BE EXPLAINED BOTH BY THE PRESENCE OF VARIOUS BULK DEFECTS IN THE SAMPLES AND BY THE DIFFERENCE IN THE DEGREE OF POLISHING OF THEIR SURFACES.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 037

TITLE--PLASTIC DEFORMATION OF CORUNDUM SINGLE CRYSTALS -U-

AUTHOR-(05)-KLASSENNEKLYUDOVA, M.V., GOVORKOV, V.G., URUSOVSKAYA, A.A., VOINOVA, N.N., KOZLOVSKAYA, E.P.

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 39, NR 2, PP 679-688

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--PLASTIC DEFORMATION, SINGLE CRYSTAL, CORUNDUM, RUBY, SAPPHIRE, CRYSTALLOGRAPHY, RESEARCH FACILITY, CHROMIUM IMPURITY, CRYSTAL IMPURITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0337 STEP NO--GE/0030/70/039/002/0679/0688

CIRC ACCESSION NO--AP0124094

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 037

CIRC ACCESSION NO--AP0124094

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRESS STRAIN CURVES AND THE DEFECT STRUCTURE OF CORUNDUM SINGLE CRYSTALS (SAPPHIRE AND RUBY) WERE STUDIED. THE INFLUENCE OF IMPURITY (CR) PRESENCE, CRYSTALLOGRAPHIC ORIENTATION, TEMPERATURE, AND DEFORMATION RATE WAS INVESTIGATED. CHROMIUM MAKES CORUNDUM HARDER AND CAUSES A YIELD POINT PHENOMENON. THE YIELD POINT WAS ALSO INCREASED BY THE TRANSITION FROM 60DEGREES TO 90DEGREES ORIENTATION OF THE SPEICIMENS, BY LOWERING THE TEMPERATURE, AND BY AN INCREASE IN THE DEFORMATION RATE. IN 60DEGREES SPECIMENS THE DEFORMATION OCCURS BY MEANS OF GLIDING ON BASAL PLANES IN (1120) AND (1010) DIRECTIONS. IN 90DEGREES SAMPLES BESIDE THIS ONE GLIDING IN (1010), (1011), (2021) AND (2243) IS FOUND. FACILITY: INSTITUTE OF CRYSTALLOGRAPHY OF THE ACADEMY OF SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

USSR

UDC 911.3.616.981.452

KLASSOVSKIY, L. N., and PETROV, V. S.

"Classification of the Variation Phenomenon in Plague Bacteria From an Ecological Basis"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of works) Vyp. 5(15), Saratov, 1970, pp 5-11, (From RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.90)

Translation: The following classification scheme is advanced for the emergence of variation in plague bacteria: A. Non-hereditary variation: 1. Phenotype variation within limits of reaction norm. 2. Variation outside reaction norm limits (pathological). B. Hereditary variation: 1. Geographic-ecological variation. 2. Variation leading to the emergence of atypical strains in natural conditions. 3. Variation leading to the emergence of stable drug-resistant forms. 4. Variation in laboratory populations. 5. Atavism and Dissociation. Variation in plague bacteria in nature has the character of population adaptation occurring in the process of host transfer. The emergence of atypical strains is seem as a phenomenon of adaptive order within the framework of the micropopulation.
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USSR

UDC 669.14.018.198.3.001.6

KIAUSTING, YE. A., and NIKOL'SKIY, O. I.

"Industrial Testing of High-Strength Deeply Hardenable Steels"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 214-222

Translation: Results are presented from industrial testing of types 14Kh2GMR and 14KhMNDFR high-strength steel. It is demonstrated that these steels are characterized by deep hardenability and after quenching in water and high-temperature annealing, sheets up to 60 mm thick have $\sigma_{0.2} \geq 600$ Mn/m^2 (60 kg/mm^2) and a_H at -40°C $\geq$ 400 kj/m^2 (4 kg·m/mm^2).

Type 14Kh2GMR and 14KhMNDFR steels are recommended for broad industrial testing and for the manufacture of experimental structures. 3 figures; 4 tables; 2 biblio refs.

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USSR UDC 541.15

SOBOLEV, V. S., ZAIDES, A. L., and KLAUZEN, N. A., Scientific Research Institute of Tire Industry, Moscow

"The Effect of Radiation Temperature on the Nature of Radiation Induced Structuralization of cis-Polybutadiene"

Moscow, Khimiya Vysokikh Energiy, Vol 7, No 4, Jul-Aug 73, pp 358-361

Abstract: An increase in the temperature of γ-irradiation of the stereoregular polybutadiene in the range 20-160° leads to considerable increase in the rate of crosslinking. At the same time the strength of unfilled vulcanizates is decreased, as well as the maximum degree of crystallization and intensity of crystal formation during the stretching. It has been assumed that these changes are connected with the polymerization processes taking place, leading to the formation of polyfunctional nuclei.

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UNCLASSIFIED PROCESSING DATE--18SEP70

1/2 014

TITLE--SOLUBILITY OF BORAX IN SODIUM CHLORIDE SOLUTIONS AT 25DEGREES -U-

AUTHOR-(02)-GODE, H., KLAVINA, L.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KHIM. SER. 1970, (1) 116-17

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SODIUM CHLORIDE, AQUEOUS SOLUTION, SOLUBILITY, BORON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0601 STEP NO--UR/0464/70/000/001/0116/0117

CIRC ACCESSION NO--AP0105584

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70

2/2 014
CIRC ACCESSION NO--AP0105584
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. OF NA SUB2 B SUB4 O SUB7 WAS 2.90PERCENT IN A SOLN. CONTG. NO NACL. IN A SOLN. CONTG. 26.46PERCENT NACL THE SOLY. OF NA SUB2 B SUB4 O SUB7 WAS NIL. BETWEEN THESE 2 LIMITS, THE PH WENT FROM 9.26 TO 6.70, AND THE N OF THE LIQ. PHASE WENT FROM 1.3388 TO 1.3790.

UNCLASSIFIED

USSR

UDC: 8.74

SELIVANOV, Yu., KLEANDROV, D.

"Prediction Method and Program Utilizing a Procedure of Generalized Exponential Smoothing"

V sb. Elektronno-vychisl. tekhn. i programmir. (Electronic Computer Technology and Computer Programming--collection of works), vyp. 4, Moscow, "Statistika", 1971, pp 40-49 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1056)

Translation: On the stage of compilation of a preliminary national economic plan, it is necessary to study the plan by the economic planning methods described in this article. Authors' abstract.

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1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--INDUSTRIAL ADOPTION OF THE FLUIDIZED BED ROASTING OF MERCURY ANTIMONY FLOTATION CONCENTRATES -U-

AUTHOR-(02)-TILGA, V.A., KLEANDROV, T.N.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL 1970, 43(3), 18-22

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--FLUIDIZED BED, MERCURY, ANTIMONY, FLOTATION, ROASTING FURNACE, ORE BENEFICIATION, SULFUR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1414 STEP NO--UR/0136/70/043/003/0018/0022

CIRC ACCESSION NO--AP0126952

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126952

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN IMPROVED FLUIDIZED BED FURNACE AND AUXILIARY APP. ARE DESCRIBED FOR THE ROASTING OF SULFIDE CONCS. CONTG. HG 0.6-0.9 AND SB 27-9PERCENT. ROASTING WAS AUTOGENOUS AND REQUIRED LITTLE FUEL. TO PREVENT SINTERING OF THE CHARGE AND VOLATILIZATION OF SB WITH HG, THE TEMP. UNDER THE FURNACE ROOF WAS HELD AT 480-500DEGREES. THE FURNACE COULD BE MECHANIZED AND CONTROLLED AUTOMATICALLY. THE EXTN. WAS SIMILAR TO 91PERCENT HG AS A LIQ. AND SB SOMEWHAT HIGHER IN A CALCINE CONTG. 29-31PERCENT SB. INCOMPLETE S ELIMINATION GAVE BETTER RESULTS THAN DEAD ROASTING.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--REMOVAL OF DUST FROM MERCURY CONTAINING GASES FROM TUBE FURNACES BY DRY ELECTROSTATIC PRECIPITATORS -U-

AUTHOR-(04)-SHEBZUKHOV, D.A., DENISOV, V.F., KLEANDROV, T.N., GUDIN, B.S.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(1), 35-9

DATE PUBLISHED--------70

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

TOPIC TAGS--INDUSTRIAL FURNACE, MERCURY, AIR POLLUTION, ELECTROSTATIC PRECIPITATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0749 STEP NO--UR/0136/70/043/001/0035/0039

CIRC ACCESSION NO--AP0107291

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--020CT70

2/2 011

CIRC ACCESSION NO--AP0107291

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INPRINCIPLE POSSIBILITY OF EMPLOYING AN ELECTROSTATIC PRECIPITATOR FOR REMOVAL OF DUST FORM HG CONTG. GASES FROM TUBE FURNACES IS DEMONSTRATED. THE INSTALLATION OF ELECTROSTATIC PRECIPITATORS MAKES IT POSSIBLE TO REDUCE GREATLY THE VOL. OF REPROCESSED STUPP, AND TO INCREASE THE DIRECT EXTN. OF HG FROM IT. ELECTROSTATIC PRECIPITATORS ALSO HAVE A DEFINITE ECONOMIC ADVANTAGE.

UNCLASSIFIED

USSR UDC: 551.062:536.531.087.6

KLEBAN, L. S., SHENDEROVICH, I. M.

"The UATGMS Water Temperature Gage"

Tr. NII gidrometeorol. priborostr. (Works of the Scientific Research Institute of Hydrometeorological Instrument Building), 1972, vyp. 26, pp 53-58 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 6, Jun 72, Abstract No 6.32.692)

Translation: A system for measuring water temperature is considered which is designed for use in UATGMS automatic hydrometeorological stations. The sensitive element is a platinum resistance thermometer which is hermetically sealed in a casing. The resistance thermometer is protected on the outside by a metal jacket, which at the same time increases the coefficient of inertia of the thermometer. The overall instrumental error of the resistance thermometer is no greater than 0.1°. During tests of two resistance thermometers, limiting errors were calculated by the 3σ law. They were equal to 0.21 and 0.32 degree respectively. Maximum difference of readings is no greater than 0.15°C. The coefficient of inertia as determined during tests ranged from 25 to 104.5 s. Two illustrations, one table, bibliography of two titles. V. S. K.

1/1

USSR

UDC: 533.697

MAMAYEV, B. I., KLEBANOV, A. G.

"Evaluating Foil Losses in Subsonic Turbine Blading"

Tr. Kuybyshev. aviats. in-t (Works. Kuybyshev Aviation Institute), 1970, vyp. 45, pp 209-219 (from RZh-Mekhanika, No 5, May 72, Abstract No 5B458)

Translation: The authors find the relation between the coefficient of losses ζ_{tb} and the angles of flow in turbine blading with optimum pitch for the case of shockless influx. Empirical relations are found which account for the influence of relative pitch and the reduced velocity λ on coefficient ζ_{tb}. A method is developed which can be used in turbine design for high-accuracy evaluation of foil losses in the blading on aerodynamically perfect blades under conditions with $\lambda \leq 0.8$. Bibliography of 13 titles. Resumé.

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USSR

UDC 621.438.001.24

MAMAYEV, B. I., KLEBANOV, A. G.

"Evaluating Profile Losses in Subsonic Turbine Grids"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, No. 45, pp 209-219 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 4, Apr 72, Abstract No 4.34.50)

Translation: The loss coefficient ζ_{tr} was obtained by a semi-empirical method as a function of the angles of flow in a turbine grid with an optimal step and shockless inflow. Empirical relationships were found taking into account the effect of the relative step and the reduced velocity λ on the coefficient ζ_{tr}. A technique was developed for evaluating with high accuracy in turbine design the profile losses in grids of aerodynamically perfect profiles at regimes with $\lambda \leq 0.8$. 9 ill., 13 ref. Resume.

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1/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--PULSED NQR NUCLEAR QUADRUPOLE RESONANCES RADIO SPECTROMETER RALAXOMETER FOR THE 2-70 MEV RANGE -U-

AUTHOR-(03)-KLEBANOV, A.N., BONDARENKO, I.S., PAVLOV, B.N.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 150-2

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NUCLEAR RESONANCE, QUADRUPOLE MOMENT, NUCLEAR SPINE, SPIN RELAXATION, SPECTROMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1480 STEP NO--UR/0120/70/001/000/0150/0152

CIRC ACCESSION NO--AP0106236

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106236

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DESCRIBED DEVICE PERMITS OBSERVATION OF SIGNALS OF NUCLEAR INDUCTION AND SPIN ECHO AND THE MEASUREMENT OF THE RELAXATION TIME IN THE FREQUENCY RANGE 2-70 MEHZ. THE MECH. COUPLING, THE AUTOMATIC ALIGNMENT OF THE HETERODYNE FREQUENCY, AND THE BLOCK OF SIGNAL ACCUMULATION MAKES IT POSSIBLE TO SEARCH AUTOMATICALLY FOR WEAK SIGANLS OF NQR WITH RECORDING OF THE SPECTRUM ON A TAPE. FACILITY: INST. RADIOTEKH. ELEKTRON., MOSCOW, USSR.

UNCLASSIFIED

Pharmacology and Toxicology

USSR

UDC 615.357.631.015.45:
612.123

KLEBANOV, B. M., Laboratory of Special Pharmacology, Scientific Research Institute of Pharmacology and Toxicology, Kiev

"Derivatives of p-Chlorophenoxyisobutyric Acid as Hypocholesterolemic Agents"

Moscow, Farmakologiya i Toksikologiya, Vol 33, No 3, May-Jun 70, pp 324-327

Abstract: The activity of the p-chlorophenoxyisobutyric acid derivatives $R_1CMe_2COOR_2$ (R_1 = $pClC_6H_4O$-) with R_2 = Et (F-1), R_2 = $NH_3CH_2CH_2SH$ (F-3), and R_2 = $NH_3CH_2CH_2OH$ (F-4); p-chlorophenoxyisobutyric acid (F-2); and their analogs $R_1CMe_2COOR_2$ with R_1 = p-ClC_6H_4S- and R_2 = H (F-7) or NH_3CH_2. CH_2OH (F-9) and R_1 = 2-hydroxy-6-carboxymethyl-4-pyrimidinyloxy, R_2 = H (F-22) as hypocholesterolemic agents was studied in animal experiments. F-1 was introduced in England as a hypocholesterolemic drug under the name of Atromid. All compounds tested had a low toxicity. F-1, F-2, and F-4 reduced the cholesterol level in the blood of normal rats. F-2, F-3, F-4, and F-7 increased the content of total lipids in the liver of rats, while F-22 showed a similar tendency. F-1 and F-2 reduced the cholesterol content in the liver; this indicated

USSR

KLEBANOV, B. M., Farmakologiya i Toksikologiya, Vol 33, No 3, May-Jun 70, pp 324-327

inhibition of the synthesis of this substance. F-2 counteracted endogenous hypercholesterolemia produced in roosters under the effect of diethylstibestrol. All compounds studied except F-22 were ineffective in inhibiting endogenous hypercholesterolemia produced in mice by the surface-active agent Triton WR-1339. F-1 was the most effective hypocholesterolemic agent among the compounds studied. It was well tolerated by rats on prolonged administration and did not cause any undesirable side effects.

USSR

UDC 547.962

KLEBANOV, G. I., SOROKOVOY, V. I., and VLADIMIROV, YU. A., Chair of Biophysics of the Second Moscow State Medical Institute imeni N. I. Pirogov

"An Investigation of the Conformational Properties of Biological Membranes by the Protein Luminescence Method"

Moscow, Molekulyarnaya Biologiya, Vol 6, No 2, Mar/Apr 72, pp 189-195

Abstract: This article is a study of the changes which occur in the luminescence spectrum of proteins in a biological membrane when the conformation of the proteins is modified as a result of changes in the Ph and temperature of the surrounding medium.

In acid media (pH $\leq$ 3) and alkaline media (pH $\geq$ 10), when the surfaces of the membranes were positively and negatively charged, respectively, it was discovered that diffusion of light by the membranes decreased, indicating a reduction in their clustering properties. Eventually, the static repulsion of like charges caused the membranes to disintegrate. In the extreme pH ranges, a long-wave shift in the maximum of the luminescence spectrum was also observed.

When the pH of the suspensions was lowered from 7 to 4.5, the diffusion of light increased steadily, reaching a maximum at pH 4.5-5.0; this was the result of a greater clustering of the membrane particles due

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USSR

KLEBANOV, G. I., et al., Molekulyarnaya Biologiya, Vol 6, No 2, Mar/Apr 72, pp 189-198

to the equal number of positive and negative charges. This change in light diffusion was not accompanied by any change in the position of the maximum of the luminescence spectrum, indicating that the conformation of the proteins in the membranes did not change.

Suspensions of all three types of membranes used in the experiment (mitochondria and stroma of erythrocytes from rats and the membranes from the fat globules found in milk) were heated from 10° to 95°. In all cases there was a gradual long-wave shift in the maximum of luminescence, which was most pronounced in the 50°-80° interval.

2/2

KLEBANOV G N

METALLURGY

JPRS 61321, 26 Feb. 74

(3)

SEMI-SELF MAINTAINED ELECTRICAL DISCHARGE IN METAL VAPORS AND ITS APPLICATION IN THE PRODUCTION OF COATINGS AND CONDENSATES IN A VACUUM

[Article by M. Kh. Shorshorov, G. N. Klebanov and A. N. Chaadov; Moscow, Plazmennyye Protsessy v Metallurgii i Tekhnologii Neorganicheskikh Materialov, Russian, 1973, pp 33-37]

The processes by which thin films are produced are based on physical phenomena that are used extensively in the development of refractory, wear-resistant, optical, protective coatings, and also of various components of electronic circuitry.

The operating conditions of film circuits and coatings impose rigid requirements on their properties (density, electrical conductivity, purity, strength of bond with substrate). These properties are determined by the mechanism of formation of condensation nuclei and conditions of nucleation of the first layers and depend not only on the physical condition of the substrate surface (temperature, presence of oxide films, perfection of the crystal structure etc.), but also on the method and parameters of the coating application process, such as pressure and composition of the residual gas medium, kinetic energy and degree of ionization of precipitating atoms, rate of precipitation.

Thermal evaporation and cathode sputtering are the methods most frequently used for producing coatings and condensates. The use of electron-beam heating in thermal evaporation made it possible to greatly expand the range of materials that can be evaporated and to increase the productivity of the process in comparison with inductive and resistive heating. However the effectiveness of the electron beam method is limited by the very features of the process. As the rate of evaporation increases the number of collisions between electrons and atoms of the evaporated metal also increases. This results in energy loss and angular scattering [1,2]. The feasibility of using electron-beam evaporators is limited to a maximum pressure of 10^{-4} torr [3]. As a result of collisions the number of excited and ionized atoms increases. As the rate of evaporation increases the conductivity of the electrode gap increases and conditions are created that are favorable

to the development of uncontrolled electrical discharge. The excessive increase of current destroys the working parts of the electron gun and poses a danger of failure of the high-voltage power source, designed for small currents. The development of the discharge makes the evaporation process unstable. Consequently the operation of electron-beam evaporators is possible only when ionization processes are limited [4].

At the same time the use of electrical discharge greatly increases the productivity of the evaporation process and improves the quality of the applied films [5,6]. The evaporation of materials by means of an excited arc in a vacuum insures the attainment of high precipitation rates. But the arc, possessing high efficiency in comparison with an electron beam, is characterized by instability of the evaporated flow in time. The operation of such an evaporator at low evaporation rates, which do not produce in the electrode gap the vapor with the density corresponding to arc excitation, is impossible [7].

This problem was solved for evaporation of zinc and cadmium [8]. By means of radiative heating between a molybdenum crucible, containing the metal to be evaporated, and an incandescent tungsten electrode, the required pressure is achieved and discharge occurs in the metal vapors. This method can be used only for evaporating metals with a low melting point.

An electron beam-plasma source design, during the operation of which the required vapor density between the electrode is achieved and maintained by means of electron-beam heating, was developed for the purpose of increasing the number of materials that can be evaporated and for improving evaporation process conditions [9].

The discharge in the metal vapors is stationary, since it can last for a rather long time at the given currents and voltages. The stability of discharge and the stability of the evaporation process depend both on the physical conditions of the discharge and on the properties and parameters of the power source.

Stabilization of a discharge with a falling volt-ampere characteristic can be achieved either through an auxiliary stabilizing resistance, or as a result of the corresponding external characteristic of a power source [10].

Since the energy and the number of particles that bombard the thermoelectronic cathode are not sufficient for developing secondary electron emission, capable of supporting independent arc discharge, the electrical discharge in metal vapors is semi-self supporting.

The flow of vapor that comes from the evaporator during discharge contains positive ions, electrons and neutral atoms. The ion and electron current of this plasma and the degree of ionization of the precipitated atoms were measured by the probe characteristics method [11].

As the rate of evaporation and discharge current increases the degree of ionization of the precipitated atoms of the vapor increases, reaching 30% for the investigated discharge parameters (a current of 1-3A and a voltage

UDC 519.281

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"Unbiased Estimates and Matrix Loss Functions"

Moscow, DAN SSSR, Vol 200, No 5, Oct 71, pp 1024-1025

Abstract: Let $(\mathfrak{X}, \mathfrak{A}, P_\theta)$, $\theta \in \Theta$ be a probability space with a family of probability distributions on it. It is assumed that from the results of observations $x \in \mathfrak{X}$ conforming to one of the laws P_θ, an estimate must be made of the value of the given function $\gamma(\theta): \Theta \to \mathfrak{R}_m$, where $\mathfrak{R}_m$ designates the set of all square matrices of dimensionality $m \times m$ with real elements. If γ^* is assumed as an estimate of the unknown value $\gamma = \gamma(\theta)$, then losses are assigned by the matrix-value function $w(\gamma^*, \gamma) \in \mathfrak{R}_m$ assuming a relation of order in set $\mathfrak{R}_m$ generated by the positive definiteness of the matrix difference. The authors consider only functions $w(\gamma^*, \gamma)$ which are convex with respect to γ^* at each value of γ. If $g(x)$ is an estimate for $\gamma(\theta)$ i. e., a measurable mapping $\mathfrak{X} \to \mathfrak{R}_m$ then its risk, corresponding to the loss

USSR

KLEBANOV, L. B. et al, DAN SSSR, Vol 200, No 5, Oct 71, pp 1024-1025

function $w(\gamma^*, \gamma)$, is

$$R_\theta(g) = E_\theta w(g(x), \gamma(\theta)).$$

The estimate $f(x)$ is said to be *better* than $g(x)$ if for all $\theta \in \Theta$ the matrix $R_\theta(g) - R_\theta(f)$ is nonnegatively defined, and *rigorously better* than $g(x)$ if the given matrix differs from the zero matrix for at least one θ. The estimate $f(x)$ belonging to some class K of estimates of the function $\gamma(\theta)$ is said to be *optimum in this class* if it is better than any estimate $g \in K$. The authors consider the class K of all unbiased estimates with finite covariation matrix: i. e., estimates $f(x)$ for which

$$E_\theta f(x) = \gamma(\theta), \quad E_\theta f(x) f^\tau(x) < \infty$$

for all $\theta \in \Theta$ (here τ designates the sign of transposition). The estimate $f(x)$ which is optimum in the given class K is called an *unbiased estimate with minimum risk*. The unbiased estimate with minimum risk corresponding to the measure of quality generated by the loss function

$$w_1(\gamma^*, \gamma) = (\gamma^* - \gamma)(\gamma^* - \gamma)^\tau$$

2/3

USSR

KLEBANOV, L. B. et al, DAN SSSR, Vol 200, No 5, Oct 71, pp 1024-1025

(covariation matrix) is said to be an *unbiased estimate with minimum covariation matrix*. The authors investigate the interrelation between unbiased estimates with minimum covariation matrix and those with minimum risk corresponding to the given loss functions $w(\gamma', \gamma)$. Bibliography of five titles.

3/3

1/2 015 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--THE EFFECT OF THE ALIGNMENT, LUBRICATION, AND LOCATION OF THE SPINDLE BEARINGS OF A COORDINATE BORING MACHINE UPON MACHINING PRECISION

AUTHOR--MURZAKOV, KH.YE., TABUNSHCHIKOV, M.YA., KLEBANOV, M.K.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, STANKI I INSTRUMENT, NO 3, 1970, PP 10-12

DATE PUBLISHED-------70

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

TOPIC TAGS--BORING MACHINE, MACHINE TOOL PLANT, METAL MACHINING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/1567 STEP NO--UR/0121/70/000/003/0010/0012

CIRC ACCESSION NO--AP0114155
UNCLASSIFIED
ZZZZZZZZZZZZ

UNCLASSIFIED PROCESSING DATE--11SEP70

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CIRC ACCESSION NO--AP0114155

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN INVESTIGATION OF THREE DESIGN VARIANTS OF THE SPINDLE SUB ASSEMBLY OF A COORDINATE BORING MACHINE WAS MADE AT THE KUYBYSHEV COORDINATE BORING MACHINE PLANT. THE TEST FACILITIES ARE DESCRIBED, AS WELL AS THE EXPERIMENTAL PROCEDURE, AND THE RESULTS OF THE TESTS ARE PRESENTED.

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UDC 542.938:541.127.1:546.289.4'151

KNYAZEV, YE. A., and KLEBANOV, M. S., Krasnodar' Polytechnical Institute, Krasnodar, Ministry of Higher and Secondary Specialized Education RSFSR

"Kinetics of Hydrolysis of Germanium (IV) Iodide"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 15, No 1, 1970, pp 20-22

Abstract: Hydrolysis of GeI_4 consists of two stages: hydrolysis proper, $GeI_4 + 3H_2O = H_2GeO_3 + 4H^+ + 4I^-$, and crystallization of the dioxide, $H_2GeO_3 = GeO_2 + H_2O$. A study was made of the kinetic correlations of the hydrolysis reactions using the rotating disk method, which allows for the hydrodynamic characteristics of a heterogenous process. It was found that hydrolysis of GeI_4 occurs in a diffusion regime. As the rate of rotation of the disk sample is increased, the rate of the process rises to $3.7 \cdot 10^{-7}$ gram-mole/cm^2·second (at 18.3 rps), then drops off. Up to 18.3 rps, the rate of hydrolysis was determined by the diffusion of the reaction products containing germanium. The apparent energy of activation in the range studied (up to 33.3 rps) is 2.32 ± 0.08 kcal/mole.

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Acc. Nr: AP0034108 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code: UR 0078

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71109q Kinetics of germanium(IV) iodide hydrolysis. Knyazev, E. A.; Klebanov, M. S. (Krasnodar. Politekh. Inst., Krasnodar, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 20–2 (Russ). The hydrolysis of GeI$_4$ is a diffusion controlled reaction and its rate increases with stirring of reaction mixt. up to a max. of 3.7×10^{-7} g mole/cm^2 sec at 18.3 revolutions per sec. At up to 18.3 revolutions per sec, the rate depends on the diffusion of the hydrolysis products. The apparent activation energy at ≤33 revolutions per sec is 2.32 kcal/mole. HMJR

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18

REEL/FRAME
19710751

USSR UDC: 621.317.33

KROTKOV, I. N., KLEBANOV, M. Ya., GUR'YANOV, V. S., MCHELIDZE, G. V.

"Methods and Equipment for Precision Measurements of the Parameters of Resistors on Alternating Current"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 33-37 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A359)

Translation: The paper discusses briefly the problems which arise in precision measurements of the parameters of resistors on alternating current: "absolute" reproduction of the unit dimension of resistance (the ohm), retention and transmission of the unit dimension on alternating current, and determination of the residual parameters of resistors. It is pointed out that it would be advisable to develop a set of equipment for measuring the parameters of resistors with fairly high precision over a wide range of frequencies and resistances. Bibliography of 7 titles. E. L.

1/1

KLEBANOV, V. M.

JPRS 65341
6 Jan 76

UDC: 611.127:611.831.014.477-019

THE EFFECT OF TRANSVERSE G FORCES ON ATRIAL NERVE CELLS (EXPERIMENTAL MORPHOLOGICAL INVESTIGATION)

[Article by S.S. Mikhaylov, V.M. Klebanov, S.I. Yevlyayev, Chair of Normal and Topographic Anatomy (headed by Professor S.S. Mikhaylov), Moscow Medical Stomatological Institute, and Chair of Operative Surgery (headed by Docent V.M. Klebanov), Leningrad Medical Institute; Leningrad, Arkhiv Anatomii, Gistologii i Embriologii, Russian, No 11, 1971, submitted 28 January 1971, pp 37-47]

In view of the successful development of space medicine in the last decade, one of its special directions, space morphology, is beginning to form. A great achievement in this direction consisted of the numerous investigations of changes in the vascular system occurring under the influence of gravitational stress performed under the supervision of M.G. Prives (1963-1976). Some interesting studies were made of the effect of G forces on cells and organs (V.G. Yelisayev, 1956, 1966; Yu.N. Kopayev, 1963, 1967; V.G. Petrukhin, 1962, 1963; L.S. Sutulov, 1970, and others).

However, to date, there have been relatively few studies of changes in the nervous system following accelerations, the possibility of developing tolerance and adaptation to gravitational stress, as well as cumulation of gravitational factors.

It was shown in some investigations (V.P. Kurkovskiy, 1957; V.G. Petrukhin, 1962; B.S. Glushkov, 1965; D.I. Medvedev, 1963, 1965, and others) that dystrophic and degenerative changes, consisting of swelling, wrinkling of cells, chromatolysis, vacuolization of neuronal cytoplasm, etc occur under the influence of moderate gravitational stress. Under the influence of single (negative) accelerations (Beckmann and Ratcliffe, 1956) many nerve cells perish. M.G. Prives, V.V. Stepantsov, and A.V. Yeremin (1970) demonstrated changes in the nerve endings.

There have been practically no studies of changes in cardiac nerve cells under the influence of accelerations, and this was the objective of the study whose results are submitted herein.

USSR

UDC 519.2

KLEBANOVA, G. B.

"Meromorphic Random Processes"

Vestn. Khar'kov. un-ta (Khar'kov University Vestnik), 1972, No 83, mat. i mekh. (Mathematics and Mechanics), vyp. 37, pp 62-67 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V68)

Translation: It is pointed out that meromorphic random processes exhibit themselves when studying stochastic differential-difference equations. The representation of the sample functions in the form of a series is presented for the class of processes with covariance functions of the type

$$\int f(t, \lambda) f(s, \mu)\ F\ (d\lambda, d\mu),$$

where $f(t,\lambda)\ (t - a_0) \prod_{k=1}^{r} (1 - t/a_k)$, $a_k \neq a_j$, $k \neq j$ can be defined to the integral function t of finite degree bounded with respect to λ and t; $-\infty < t < +\infty$.

1/1

UDC: 519.2

USSR

KLEBANOVA, G. B., YANTSEVICH, A. A.

"Concerning a Problem of Interpolation of Random Fields"

V sb. Mat. fiz. i funkts. analiz (Mathematical Physics and Functional Analysis—collection of works), vyp. 2, 1971, pp 41-44 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V90)

Translation: A formula is derived for restoring realizations of a homogeneous random field with analytical covariation function with respect to the values at the intersections of a periodic lattice. This formula is used to evaluate the probability of an overswing of the field beyond a certain fixed level in terms of the probabilities of overswing at lattice intersections. Authors' abstract.

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1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ALLO AND ISOALLOXAZINES. XXIV. SYNTHESIS OF 6,7,DIAMINOALLOXAZINE AND NEW TETRACYCLIC SYSTEMS -U-

AUTHOR-(05)-TULCHINSKAYA, L.S., KLEBANOVA, V.D., POLYAKOVA, N.A., DVORYANTSEVA, G.G., BEREZOVSKIY, V.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 868-73

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--HETEROCYCLIC NITROGEN COMPOUND, POLYNUCLEAR HYDROCARBON, AMINE, FLUORESCENCE, UV LIGHT, IMIDAZOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1183 STEP NO--UR/0079/70/040/004/0868/0873

CIRC ACCESSION NO--AP0128603

UNCLASSIFIED