"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

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PROCESSING DATE--13NOV70

2/2 036

CIRC ACCESSION NO--AP0124011

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROBLEMS ARISING IN THE THERMAL FATIGUE TESTING OF REFRACTORY METALS AND ALLOYS UNDER VACUUM ARE DISCUSSED AND AN IMPROVED FORM OF APPARATUS FACILITATING THE CARRYING OUT OF SUCH TESTS IN A CONSISTENT MANNER UNDER CONTROLLED CONDITIONS IS DESCRIBED. THE APPARATUS INCLUDES SPECIAL ARRANGEMENTS FOR THE RELIABLE CLAMPING OF THE SAMPLE MATERIAL, A SYSTEM OF STRAIN GAUGES, A SPECIALIZED VACUUM PLANT, AND AN ELECTRONIC CIRCUIT FOR TEMP. CONTROL. THIS APPARATUS ENABLES REFRACTORY METAL PARTS TO BE TESTED UNDER A WIDE RANGE OF SERVICE CONDITIONS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

UDC: 621.315.592

USSR

SINYAVSKIY, E. P.

"Computing the Interzone Light Absorption Coefficient in Nonpolar Semiconductors With Many Phonons Participating"

Kishinev, Izvestiya Akad. Nauk MoldSSR, No 1, 1972, pp 48-54

Abstract: This paper computes the light absorption coefficient for a broad-zoned semiconductor in which the interaction of the charge carriers with the acoustical oscillations of the crystal lattice is the important phenomenon. The computation, in which the interaction of the carriers with phonons in the conductive as well as in the valence zone is taken into account, is based on an earlier article by the same author (FTT, 13, 1971, p 2089), in which that interaction is not considered. The analysis of the present paper begins with the Hamiltonian of the system of electrons and holes interacting with the phonons. An example of the computation of the absorption coefficient is given, and the transitions from the bottom of the valence zone to the bottom of the conductive zone are considered for the case of high temperatures. It is found that the absorption coefficient increases exponentially with the growth of the frequency of the light.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

UDC 537.533.3:621.385.6

USSR

SAVEL'YEV, V.S., SINYAVSKIY, G.P.

"The Propagation Of Space Charge Waves In A Radial Electron Stream (Summary Of Deposited Manuscript)"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue No 10, p 51 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A155)

Translation: The problem is considered of the characteristics of space charge waves in a radial electron stream on the basis of a common solution of the equations of the total current, continuity, movement, and convection current. Expressions are obtained in an approximation of the theory of small signals, which describe the alternating components of the current and velocity along the electron stream, the radial velocity of which is changed according to the power law. The transfer constant matrixes are obtained which makes it possible, with respect to the values of the current and velocity at the input of the radially divergent electron stream, to determine their values at an arbitrary point of the electron stream. Graphs are constructed characteristic of the behavior of the transfer constant matrixes from the radius with different types of change of the constant components of the velocity. The conditions are found for increase and decrease of

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SAVEL'YEV, V.S., et al. Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh, 1970, Issue No 10, p 51

the amplitude of the alternating components of the current and velocity along the electron stream. An analysis of the results obtained shows that in comparison with the ordinary linear electron stream, a faster suppression takes place of velocity modulation in the accelerated and faster increase of the current modulation in the decelerated radially divergent electron stream, caused by a decrease of the constant component of the space charge density along the electron stream. Summary.

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Ion Exchange

UDC 541.183.12+541.67

USSR

MOISEYEVA, N. P., SINYAVSKII, V. G. and ROMANKEVICH, M. Ya., Institute of Colloidal and Water Chemistry

"Magnetochemical Study of Amino Acetate Ion-Exchange Resins with Ions of Transition Metals"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 943-947

Abstract: The synthetic ion-exchange resins KhKA-1 and -2, the cationic resin KU-2, and their low-molecular analogues, aniline diacetic acid and phenyl glycerin were studied. The magnetic susceptibility and effective magnetic moment were determined for the resins using the ions Ca^{2+}, Cu^{2+}, Co^{2+}, Mn^{2+}, Ni^{2+}, Fe^{3+}, and Cr^{3+}. The results showed that the KhKA series formed coordination bonds between the resin and metal, while the bonding of the KU-2 resin was ionic in character. Conclusions concerning the 3-dimensional structure of the resin-metal complex were based on the magnitude of the effective magnetic moment. Finally, the capacity of the chelating ion-exchange resin to form different complexes was shown to be dependent on the nature of the ionite and the metal ion. This appears to be characteristic for the low-molecular complexes as well.

V. N. TOLMACHEV and N. S. PIVNENKO collaberated in this work.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--SYNTHESIS OF OLIGOURETHANES WITH DISUBSTITUTED NITROGEN ATOMS IN THE MAIN CHAIN -U-

AUTHOR-(03)-MATYUSHOV, V.F., GIRTSENKO, T.M., SINYAVSKIY, V.G.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(3), 275-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ETHYL CARBAMATE, OLIGOMER, ORGANIC SYNTHESIS, ORGANIC NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0904 STEP NO--UR/0073/70/036/003/0275/0277

CIRC ACCESSION NO--AP0137932

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 009

CIRC ACCESSION NO--AP0137932

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF CLCH SUB2 ROCH SUB2 CL (R EQUALS CH SUB2 CH SUB2 OR (CH SUB2 CH SUB2) SUB2 O) WITH H SUB2 NCO SUB2 R PRIME (R PRIME IS ME OR ET) AT 200DEGREES GRADUALLY INCREASING TO 150DEGREES GAVE 96-9PERCENT LOW MOL. WT.(CH SUB2 CROCH SUB2 N(CO SUB2 R PRIME)) SUBN. SIMILARLY THE REACTION OF CLCH SUB2 NCO WITH R PRIME2 OLL (R PRIME2 IS ME OR BU) GAVE SMALLER THAN OR EQUAL TO 99PERCENT LOW MOL. WT. (CH SUB2 N(CO SUB2 R PRIME2)) SUBN.

FACILITY: INST. KHIM. VYSOKOMOL. SOEDIN., KIEV, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

UDC 669.715:620.193

USSR

UST'YANTSEV, V. U., and SINYAVSKIY, V. S., Kamenets-Podol'sk Agricultural Institute

"Corrosion-Fatigue Strength of Aluminum Alloys as a Function of Chlorine Ion Concentrations, pH, and Temperatures of the Medium"

Kiev, Fiziko-khimicheskaya mekhanika materialov, Vol 8, No 1, 1972, pp 62-66

Abstract: Discussed here are the results of a study on intergranular corrosion, corrosion cracking, and corrosion fatigue of alloys of the systems Al-Cu-Mg (D16), Al-Cu-Si (AK8), and an experimental Al-Zn-Mg alloy containing 9% zinc and magnesium as well as additions of manganese. The corrosion rates were determined by complete immersion of the specimens in stirred electrolytes for 1000 hrs at room temperatures and for 240 hrs at elevated temperatures. Tests conducted over a wide range of pH, NaCl concentration, and electrolyte temperatures indicate that Al-Zn-Mg alloys have the highest corrosion resistance under overstress. However, their resistance to corrosion cracking markedly drops with increasing temperature of the medium, which, in the final analysis, appears to minimize the advantages. It is suggested that a corrosion fatigue-pH (of solution) plot would provide a more accurate rating of aluminum alloys for resistance to this type of corrosion over a fairly wide range of pH. (3 illustrations, 1 table, 6 bibliographic references)

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UDC 669.715'5'721'3:620.193:620.192.46

USSR

VAL'KOV, V. D., SINYAVSKIY, V. S., YELAGIN, V. I., ALESHKINA, Ye. V., DZYUBENKO, M. I., and ROZENFEL'D, I. L.

"Study of the Corrosion Cracking of Al-Zn-Mg-Cu Alloys"

V sb. Korroziya i zashchita met. (Metal Corrosion and Protection -- Collection of Works), Moscow, "Nauka," 1970, pp 75-83 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1796 by authors)

Translation: A study was made of the resistance to corrosion cracking of Al-Zn-Mg-Cu alloy sheet as a function of chemical composition, heat-treatment procedures, and production process. Under low-temperature aging procedures (140°, 16 hr; 100°, 4 Hr + 160°, 8 hr) the addition of Cr to a greater extent than Zr increases resistance to corrosion cracking. The employment of a two-stage aging procedure with high temperature in the second stage (100°, 4 hr + 180°, 4-6 hr) makes it possible to obtain high resistance to corrosion cracking for alloys doped with Zr. Additions of Ti and Mn have no favorable effect on resistance to corrosion cracking. It rises with a decline in the degree of recrystallization of sheet. The production of a fibrous recrystallized structure is promoted by additions of Cr and, to a greater degree, Zr,

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

VAL'KOV, V. D., et al, Korroziya i zashchita met. (Metal Corrosion and Protection -- Collection of Works), Moscow, "Nauka," 1970, pp 75-83 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1796 by authors)

as well as by a number of technological factors: high cooling rates during casting, manufacture of sheet from extruded strips, rolling after hardening (up ~50%). Four illustrations. One table. Bibliography of 26 titles.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 669.71.017:539.3/5.01

YELAGIN, V. I., SINYAVSKIY, V. S., PETROVA, A. A., and VAL'KOV, V. D.

"The Effect of Methods of the Homogenization of Ingots on the Structure and Mechanical and Corrosion Properties of Semifinished Products of Alloys of the System Al-Zn-Mg"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970, pp 5-10, resume

Translation: The effect of the method of homogenization on the structure, mechanical properties, and corrosion resistance of shapes and sheets of alloy 01911 was investigated. Optimum homogenization methods are recommended. Five figures, fifteen bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC: 681.128.82

TYAN, Kh. S., SINYAVSKIY, Yu. P., KRIVTSANOVA, L. I., Kirgiz Scientific Research Institute of Water Management

"An Acoustic Liquid-Level Indicator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329397, Division G, filed 29 Jul 70, published 9 Feb 72, pp 157-178

Translation: This Author's Certificate introduces an acoustic liquid-level indicator which contains a measurement tube with intermediate partial reflection, a tank circuit, electroacoustic transducers and transceiver subassemblies with a communications line. As a distinguishing feature of the patent, the device is designed for single reflection of a sonic pulse from the reflector, and for a stable autocirculation mode of operation. The fixed partial intermediate reflector is made in the form of a lateral reflector with adjustable length, for instance in the form of a threaded piston. The feedback circuit includes a symmetric flip-flop connected at the input to a square pulse shaper, and at the output to a probing pulse shaper.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 681.888

KONOVALOV, Ye. G., SINYAYEV, V. A., and KOVALEV, S. I.

"Variation of the Mechanical Characteristics of M1 Copper as a Function of Duration of the Preliminary Cyclic Loading with Bending Vibrations of Ultrasonic Frequency"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Tekhnicheskikh Nauk, No 4, 1970, pp 9-12

Abstract: This article contains a study of the effect of ultrasonic bending vibrations on the mechanical characteristics of M1 copper. The graphs for the yield point $\sigma_{0.2}$, ultimate strength σ_b, elongation per unit length δ, and reduction of area ψ as a function of the duration of the preliminary cyclic loading with ultrasonic bending vibrations are presented. An acoustic system permitting effective excitation of bending vibrations is the specimen and fast multiple changing of specimens is described. Results are tabulated showing that the ultrasonic bending vibrations have great effect on the mechanical properties of M1 copper (in the delivered state), and in the final analysis, destroy samples made of it. Under the effect of ultrasonic bending vibrations the mechanical characteristics $\sigma_{0.2}$, σ_b, δ, and ψ of M1 copper

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

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KONOVALOV, Ye. G., et al, Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Tekhnicheskikh Nauk, No 4, 1970, pp 9-12

drop as the number of loading cycles increases. The higher the amplitude of the ultrasonic bending vibrations, the faster the mechanical characteristics drop.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR UDC 629.78.002

BASHKATOV, A. F., SINYAYEV, V. I., OREKHOV, V. B.

"Influence of Seated Structural Elements of Circular Parts on Coaxial Error in a Joint"

Tr. Ufim. Aviats. In-t. [Works of Ufim Aviation Institute], No 21, 1971, pp 7-13, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 2, 1972, Abstract No 2.41.224 from the Resume).

Translation: This work states the problem of determining the influence of basic errors in the manufacture of parts (eccentricity of seated surfaces, radial clearance Δ and end skew) on bending of axes with certain assembly plans. Evaluation of the these plans from the standpoint of maximum possible skew of the axes is of significant interest for designers in selecting plans for joints and assigning tolerances for their manufacture. 4 Figures.

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USSR

UDC 669.295

SINYAYEVA, N. P., VASSERMAN, A. M., and OLESOV, YU. G.

"Determination of Oxygen in Powdered Titanium Materials"

Moscow, Tsvetnyye Metally, No 6, 1972, p 80

Abstract: A method for determination of the oxygen in titanium powders, alloys, carbides, and hydrides is based on a pulsed heating principle developed at the Institute of Geochemistry and Analytical Chemical imeni V. I. Vernadskiy of the Academy of Sciences USSR. Details of the method were published in the Journal of Analytical Chemistry, Vol 20, 1965, p 1359. The lower limit for determination of the oxygen concentration is 10^{-2} weight %. The variation coefficient for powdered Ti, its alloys, and carbides is 10%, for titanium hydrides 20%, and cast titanium 5%. The hole procedure takes approximately 10 min. The concentration of oxygen in powdered titanium materials depends on granulometric composition. In powders with large particles (500-80 μ) the concentration of oxygen varies between 0.03-0.15 weight %, and in powders consisting of particles smaller than 80 μ it is 0.15-0.70 weight %. The latter is attributed to a larger specific surface of particles and to the presence of adsorbed moisture. This moisture can be eliminated by drying the powders under a vacuum of not less than $1 \cdot 10^{-2}$ mm Hg.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 546.21:546.821:543.25.062

SINYAYEVA, N. P., KUNIN, L. L., OLESOV, Yu. G., and VASSERMAN, A. M.

"Determination of Oxygen in Electrolytic Powders of Titanium and Titanate Alloys by Impulsive Heating"

Moscow, Zavodskaya Laboratoriya, Vol 37, No 12, 1971, pp 1419—1420

Abstract : The possibility of using the quick method of impulsive heating for solving certain technological problems of powders of titanium and titanate alloys is investigated. The method consists in heating the specimen in a closed graphite capsule up to 3,000 °C for 3 sec. in argon atmosphere. Carbon monoxide, separated from specimens, mixes with argon and is determined by infrared absorption. The duration of a single determination is 7-10 min., the sensitivity is 10^{-2}% by wt. by a weighed amount of 100 μg. The impulsive heating method was applied for the investigation of oxygen distribution in powders of titanium and titanium-aluminum alloy, depending on the size of powder particles. Tabulated investigation results show the dependence of oxygen content in powder of

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SINYAYEVA, N. P., et al., Zavodskaya Laboratoriya, Vol 37, No 12, 1971, pp 1419-1420

unalloyed electrolytic titanium and in titanium-aluminum alloy and of mechanical properties on the fraction size. The mechanical properties measured on specimens produced by vacuum caking at 1,200-1,500°C are also shown. Four tables, ten biblio. refs.

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USSR

S 2

UDC: 621.762.274:669.295.5'71

OLESOV, YU.G., MEYERSON, G.A., USTINOV, V.S., ZAPADNYA, V.I., SINYAYEVA, N.P., and CHERKASHIN, V.I.

"Electrolytic Derivation of Titanium-Based Alloy Powders"

Moscow, Tsvetnyye Metally, No 5, May 70, pp 79-81

Abstract: Investigations were made of the possibility of obtaining titanium-alloy powders by electrolysis of melts with a soluble anode. Titanium-aluminum alloys were used as examples. The first experiments were conducted on a large laboratory electrolyzer (current up to 300 amps). A mixture of A5-aluminum and ChM-titanium sponge wastes was used as the anode material. Aluminum content in the charge was varied from 10 to 40%. The cathodic deposits were processed by a hydrometallurgical method, separated into four fractions: +0.56, -0.56 + 0.14, -0.14 + 0.07 and -0.07 mm, and analyzed for Al, Fe, Si, C, N, and O content. On the basis literature data and the investigations conducted, optimum conditions were determined: anode current density of 0.1-0.15 amp/cm^2, cathode current density of 0.8-1 amp/cm^2, and electrolyte composed of 40% $MgCl_2$, 35% KCl, and 25% NaCl containing 1-1.5% dissolved titanium in the form of lower chlorides. Subsequent investigations were conducted under plant conditions. After hydrometallurgical processing and drying, the cathode material was separated into +0.5, -0.5 + 0.08, and -0.08 mm fractions. It was established that with a rise in the aluminum

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USSR

OLESOV, YU.G., et al, Tsvetnyye Metally, No 5, May 70, pp 79-81

content in the starting material, the yield of fine particles grows. As a result of the experiments conducted, the basic technological parameters of obtaining titanium-aluminum powders in existing electrolyzers were determined: cell current of 3-3.5 kiloamperes, anode current density of 0.2-0.25 amp/cm^2, 1-1.5% soluble titanium concentration in an $MgCl_2$ -- KCl -- NaCl -- $TiCl_x$ electrolyte, working temperature of the melt at 550-580°C, and unit electrolysis time at 2-3 hours. These parameters ensure a stable current efficiency of 0.45-0.50 g/amp·hr and an 80-85% yield of metal powder fractions after disintegration. The data obtained from the experiments indicate that by electrolysis of melts with a soluble anode, it is possible to obtain powders from titanium-aluminum alloys of determined composition which possess adequately high mechanical properties in the baked state.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 615.214.32.033

SINYUKHIN, V. N., Pharmacology Laboratory, USSR Chemical-Pharmaceutical Institute imeni S. Ordzhonikidze

"Absorption and Distribution Among Organs of a New Antidepressant Azaphen"

Moscow, Farmakologiya i Toksikologiya, Vol 36, No 4, Jul/Aug 73, pp 409-411

Abstract: The absorption, the distribution among organs and the secretion from urine of azaphen 2-(4-methyl-piperazinyl-1)-10-methyl-3,4-diazaphenoxasine dihydrochloride, a tricyclic antidepressant, at its injection into 18 hour starved rats (150-180 gm) was investigated. Azaphen is quickly absorbed into the gastrointestinal tract at internal injection (120 mg/kg) into the stomach attaining maximum concentration 30 minutes to one hour after the injection and at intravenous injection (12.5 mg/kg) into the tail vein attaining maximum concentration 5 minutes after the injection. In both types of injections of azaphen maximum concentrations of the drug were recovered from the kidney (55-60 mcg/gm) and liver (33-65 mcg/gm) and smaller concentrations from the heart (20-25 mcg/gm) and brain (7.6-8.0 mcg/gm). The maximum azaphen content of plasma was 18 mcg/gm. The rate of disappearance of azaphen from the organs tested was much faster when the drug was injected intravenously than when injected internally.

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USSR

SINYUKHIN, V. N., Farmakologiya i Toksikologiya, Vol 36, No 4, Jul/Aug 73, pp 409-411

Azaphen was eliminated from the urine of the rats in significant amounts (39% of original, 6 hrs. after injection and 25%, 18 hrs. after injection).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC:537.226+537.311.33]:539.16.04

ARIFOV, U. A., MIKHAELYAN, V. M., SINYUKOV, V. A., KOROSTELEV, Yu. A., LYUTOVICH, A. S.

"Alloying of Silicon by Bombardment With Thermal Neutrons"

Kristalliz. Tonkikh Plenok [Crystallization of Thin Films -- Collection of Works], Tashkent, Fan Press, 1970, pp. 136-139 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Ye 1100 by T. B. Karashev)

Abstract: Specimens of p-type Si with specific impedence approximately 1200 ohm·cm were bombarded by a stream of reactor neutrons $1.8 \cdot 10^{13}$ $cm^{-2} \cdot sec^{-1}$ for one hour. After annealing at 800°C for four hours, the bombarded specimens had n-type conductivity and $\rho = 600$ ohm·cm. Analysis of the variation, with temperature of concentrations and mobilities of carriers showed that the conductivity resulted from the donor impurity, giving a fine level. The alloying effect is related to the phosphorus formed as

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR UDC:537.226+537.211.33]:539.16.04

ARIFOV, U. A., MIKHAELYAN, V. M., SINYUKOV, V. A., KOROSTELEV, Yu. A., LYUTOVICH. A. S., Kristalliz. Tonkikh Plenok [Crystallization of Thin Films -- Collection of Works], Tashkent, Fan Press, 1970, pp. 136-139 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Ye 1100 by T. B. Karashev)

a result of nuclear transformation. The possibility of producing high-resistance n-type Si crystals with even volumetric properties by this method is noted; this is difficult to achieve by other methods.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

UDC 541.138

USSR

LEVINSKAS, A. L., SINYUS, Ya. Yu., and INGAUNITE, B. I., Vilnyus State University

"Electrode Processes in Ether-Hydride Electrolyte Used in Aluminum Plating"

Moscow, Elektrokhimiya, Vol 6, No 10, Oct 70, pp 1505-1508

Abstract: A study of the electrode processes in the "hydride mixture" was performed by the classical polarization curve method, and also by gas chromatography and gas volumetric methods. The systematic study of the current yield under gas separation conditions confirmed the complexity of the mechanism of cathode and anode gas liberation in the ether-hydride electrolyte. The gas volumetric data indicated that the cathode and anode hydrogen in the ether-hydride electrolyte can hardly be related to the various types of ionization of compounds in the "hydride mixture." It is possible that gas separation on the cathode and anode may be a result of spontaneous separation of hydrogen under the indluence of the freshly formed aluminum surface, which catalyzes the process of decomposition of complexes in the "hydride mixture."

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

1/2 033 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EFFECT OF ANODE TEMPERATURE ON THE OPERATION OF A CESIUM THERMIONIC ENERGY CONVERTER IN AN ARC SYSTEM -U-

AUTHOR-(02)-KONDRATYEV, F.V., SINYUTIN, G.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. TEKH. FIZ. 1970, 40(4), 839-42

DATE PUBLISHED----------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--THERMIONIC ENERGY CONVERSION, CESIUM, VOLT AMPERE CHARACTERISTIC, ELECTRODE PROPERTY, TEMPERATURE DEPENDENCE, ELECTRIC ARC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1197 STEP NO--UR/0057/70/040/004/0839/0842

CIRC ACCESSION NO--AP0124851

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

2/2 033 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124851

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF EXPTL. DATA INCLUDING THOSE OF THE AUTHORS (1967), THE PROBLEM OF THE EXISTENCE OF 1 MAX. IN THE CURVES OF THE CURRENT AND POWER DEPENDENCES ON ANODE TEMP. WAS STUDIED WITH THE USE OF THE PHENOMENOL. THEORY OF N. S. RASOR (1965) FOR THE ANAL. OF THE EXPTL. CURRENT VOLTAGE CHARACTERISTICS OF A CS THERMIONIC ENERGY CONVERTER OPERATING IN THE ARC MODE. FROM THE CURVES TAKEN FOR VARIOUS ANODE TEMPS., A RELATION BETWEEN THE NEAR ANODE POTENTIAL FALL AND ELECTRON TEMP. NEAR THE ANODE WAS CALCD. A MIN. WAS FOUND FOR THIS QUANTITY. THIS SUGGESTS THAT, BESIDES OTHERS, THE NEAR ANODE POTENTIAL BARRIER IS RESPONSIBLE FOR THE MAX. ON THE POWER VS. TEMP. CURVES.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--STUDY OF THE WORKING SPACE AND OF THE WORKING CONDITIONS OF A 16.5 MVA FURNANCE MAKING SILICOMANGANESE -U-

AUTHOR-(04)-ZHERDEV, I.T., CHKHEYDZE, Z.A., SIORIDZE, G.YA., YASKOV, YE.S.

COUNTRY OF INFO--USSR

5

SOURCE--STAL' 1970, 30(2), 137

DATE PUBLISHED--------70

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

TOPIC TAGS--FERROALLOY, ELECTRIC FURNACE, CURRENT DENSITY, ELECTRODE PROPERTY, TEMPERATURE DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1869 STEP NO--UR/0133/70/030/002/0137/0137

CIRC ACCESSION NO--AP0115688

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

2/2 016 UNCLASSIFIED

CIRC ACCESSION NO--AP0115688 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHARGE COMPN., TEMP., C.D., AND POWER DISTRIBUTION IN THE CHARGE OF A 7-M DIAM., 3-M DEEP, 3 ELECTRODE FURNACE WERE DETD. RADIAL CURRENT DISTRIBUTION FROM ELECTRODES WAS VERY NONUNIFORM, AND C.D. INCREASED DOWNWARDS, NONE BEING OBSD. IN THE UPPER LAYERS OF THE CHARGE AND UNDER FEEDER SPOUTS TO THE DEPTH OF 2-2.3 M. A SMALL ARC WAS PRESENT IN THE CIRCUIT OF EACH PHASE. POWER DISTRIBUTION PER PHASE WAS SUBSTANTIALLY UNIFORM.

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Dec 72

The solution is applicable to a variety of physical problems which can be described by parabolic equations with movable boundaries. Extension of the solution to more complex bodies (an ellipsoid, a paraboloid, and a hyperboloid) is planned.

Georg, E. B., Yu. K. Rulev, G. F. Sipachev, and M. I. Yakushin. Experimental study of ablation boundary layer in specimens under simultaneous action of convective and radiative heat fluxes. MZhiG, no. 2, 1972, 25-29.

The ablation boundary layer in asbestos-reinforced plastic cylindrical specimens with a spherically blunted nose was studied in an air plasma jet produced by a high-frequency electrodeless discharge. The discharge generated a 37 mm diameter plasma jet at 1 kg/cm^2 pressure with Reynolds number of 100 and a 30 m/sec velocity. The plasma, boundary layer, and specimen emission spectra were recorded simultaneously on a photographic plate by means of an optical system including an ISP-51 prismatic spectrograph. Plasma jet interaction with the studied material was recorded by motion picture camera at a speed of one frame/second. A sharp boundary was detected between the specimen and the boundary layer. The visible emission spectrum of the latter exhibited characteristic lines of the elementary constituents of the original material. The boundary layer emission intensity in the 3838-6483Å spectral range was comparable to or higher than that of the plasma. The temperature profile across the boundary layer (Fig. 1) was determined near the

SIPACHEV, G.F.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 546.45

SIPACHEV, V. A., GRIGOR'YEV, A. I., and NOVOSELOVA, A. V., Academician

"The Properties of Beryllium Ethoxyacetate with the Composition $Be_7O_2(Ch_3COO)_6(OC_2H_5)_4$ and a Method of Obtaining It"

Moscow, Doklady Akademii Nauk SSR, Vol 196, No 4, 1971, pp 834-835

Abstract: This article contains a discussion of the properties of beryllium ethoxyacetate with the composition $Be_7O_2(CH_3COO)_6(OC_2H_5)_4$ and a method of obtaining it by recrystallization of the mother liquor left after separation of $Be_4O(CH_3COO)_5(OC_2H_5)$ from the sublimate resulting from thermal decomposition of $Be(CH_3COO)\cdot(OC_2H_5)$ in a vacuum after recrystallization from hot n-octane or extraction by n-pentane. X-rays of the powder and infrared adsorption spectra of crystalline forms of the compounds are presented. In the infrared spectra of $Be_4O(CH_3COO)_6$, $Be_4O(CH_3COO)_5\cdot(OC_2H_5)$, $Be_7O_2(CH_3COO)_6(OC_2H_5)_4$ and $Be(CH_3COO)(OC_2H_5)$ special attention is brought to the variation in relative intensity and position of the bands caused by vibrations of the aloxyl groups on transition from the beryllium oxymonoethoxypentaacetate to "normal" beryllium ethoxyacetate. The most characteristic changes in the spectra are observed in the 850-200 cm^{-1} range.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 532.516.2

SIPENKOV, I. Ye., GRIGOR'YEV, B. S.

"Determination of the Axial Load-Bearing Capability of Shaped Spherical Bearings with Gas Lubrication"

Probl. Razvitiya Gaz. Smazki. Ch. 1 [Problems of Development of Gas Lubrication, Part 1 -- Collection of Works], Moscow, Nauka Press, 1972, pp 87-107, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B627 by A. I. Snopov).

Translation: The axial load-bearing ability of spherical bearings with gas lubrication with two symmetrical bands of spiral channels cut into the non-moving sphere is studied in the limiting cases of large and small compressibility numbers λ. Where $\lambda \to \infty$, the asymptotic solution of Ya. M. Kotlyar is used and the reaction of the lubricant film is calculated with slight eccentricities. In the case of small λ, the Reynolds equation is used for incompressible lubricant and an equation is composed on the basis of the assumptions of the "narrow channel" theory of Wipple for the average pressures. The rigidity of the lubricant layer is calculated analytically for concentric placement of the journal in the bearing. Graphs are presented, reflecting the dependence of axial rigidity on various parameters of the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 532.516.2

SIPENKOV, I. Ye., GRIGOR'YEV, B. S., Probl. Razvitiya Gaz. Smazki. Ch. 1 Moscow, Nauka Press, 1972, pp 87-107.

problem (width of band, angle of spirals to slipping direction, dimensions of channels, etc.). Also presented for comparison are certain results of numerical solution of the Reynolds equation with a finite number of channels and for sector bearings.

It is noted that although the "narrow channel" theory does lead to slightly elevated values of axial rigidity, it is suitable for engineering practice with a sufficiently large number of channels ($N > 4$-6) and small λ ($\lambda \leq 50$), in particular for determination of the optimal parameters of the bearing and corresponding rigidity. 9 Biblio. Refs.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

OSEPYAN, L. S., SIPENKOV, I. YE.

UDC 621.822-72

"Determining the Angular Rigidity of a Cylindrical Gas Suspension Device"

Trudy Leningradskogo Politekhnicheskogo Instituta, Aerotermodinamika (Works of the Leningrad Polytechnical Institute, Aerothermodynamics), No 313, 1970, pp 110-116

Translation: This article contains a study of a radial air suspension device with two blowing lines to which a misalignment moment is applied. The pressure distribution in the lubricating layer is found by the perturbation method. The relative misalignment angle is taken as the small parameter. On the basis of the solution obtained, a formula is presented for calculating the angular aerodynamic rigidity of the suspension device which is valid with accuracy to second-order small values. It is demonstrated that if a misalignment moment and a radial load causing relatively small angular and linear displacements act on the suspension device simultaneously, then with accuracy to second-order small values, the linear displacements have no effect on the angular rigidity of the suspension device, and the angular displacements, on the linear rigidity.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

OSEPYAN, L. S., et al., Trudy Leningradskogo Politekhnicheskogo Instituta, Aerotermodinamika (Works of the Leningrad Polytechnical Institute, Aerothermodynamics), No 313, 1970, pp 110-116

The results of calculating the angular (and, by the way, the linear) rigidities are presented for various values of physical and geometric parameters of the suspension device. There are 4 illustrations and a 4-entry bibliography.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

1/3 009 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SEISMIC DATA ON STRUCTURE OF SEDIMENTS IN TATAR STRAIT. SEISMIC DATA ON STRUCTURE OF THE SEDIMENTARY LAYER IN THE SOUTHERN PART OF THE

AUTHOR-(05)-MILASHIN, A.P., SIPLATOV, V.A., YUNOV, A.YU., VOLKOV, A.P., TABOYAKOV, A.YA.

COUNTRY OF INFO--USSR

SOURCE--GELENDSHIK; MOSCOW, GEOTEKTONIKA, NO 1, 1970, PP 117-120

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--TECTONICS, SEISMIC SURVEY, SEDIMENTARY ROCK LAYER, MARINE GEOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0052 STEP NO--UR/9066/70/000/001/0117/0120

CIRC ACCESSION NO--AP0108425

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

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UNCLASSIFIED

CIRC ACCESSION NO--AP0108425 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TECTONICALLY, THE REGION OF TATAR STRAIT, BEING A CONTINUATION OF THE DEEP WATER SEA OF JAPAN BASIN, IS SITUATED IN THE TRANSITION ZONE FROM THE ASIATIC CONTINENT TO THE PACIFIC OCEAN. DURING THE SUMMER AND AUTUMN OF 1966 THE DIVISION OF MARINE GEOPHYSICAL WORK OF THE ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF GEOPHYSICS FOR THE FIRST TIME CARRIED OUT MARINE SEISMIC STUDIES IN THE TATAR STRAIT BY THE METHOD OF CONTINUOUS PROFILING BY THE REFLECTED WAVES METHOD. MOST OF THE WORK WAS DONE ON THE SAKHALIN ISLAND SHELF IN THE SECTOR BETWEEN CAPE LAMANON AND THE SOUTHEASTERN SHORES OF OELANGL' GULF. WITHIN THIS AREA THREE SEISMIC PROFILES INTERSECT TATAR STRAIT FROM SAKHALIN TO THE ASIATIC CONTINENT IN A LATITUDINAL DIRECTION (FIG. 1 IS A MAP OF THE WORK AREA.) THE COLLECTED DATA INDICATE THAT THE STRUCTURE OF THE UPPER PART OF THE SEDIMENTARY COMPLEX IS CHARACTERIZED FOR THE MOST PART BY TWO GROUPS OF DEPOSITS. TH AREA CAN BE DIVIDED INTO EASTERN AND WESTERN PARTS ON THE BASIS OF THE SEISMIC DATA. THE EASTERN PART, CORRESPONDING IN GEOMORPHOLOGICAL RESPECTS TO THE SHELF NEAR SAKHALIN, IS CHARACTERIZED BY WELL EXPRESSED DISLOCATION OF THE DEPOSITS. THE DURATION OF THE SEISMIC RECORD HERE VARIES FROM 1.4-2.0 SEC, LESS FREQUENTLY 2.5 SEC, IN SYNCLINAL DOWNWARPS TO 0.7-0.9 SEC AND COMPLETE DISAPPEARANCE IN ANTICLINES. THE WESTERN PART CORRESPONDS TO THE ABYSSAL SECTOR AND THE EASTERN SLOPE OF THE STRAIT. THE SEISMIC RECORD IS CHARACTERIZED BY A GREAT DURATION, UP TO 3.0-3.5 SEC. THE STRUCTURE OF THIS REGION IS DESCRIBED IN DETAIL.

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CIRC ACCESSION NO--AP0108425 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--THE LAMANON-TOMARINSKAYA FOLDED ZONE, DETECTED BY THE REFLECTED WAVES METHOD, IS SITUATED WITHIN THE SAKHALIN-HOKKAIDO CENOZOIC FOLDED REGION, IN THIS SECTOR COINCIDING WITH THE SHELF SURROUNDING SAKHALIN. THE FOREDEEP OF THE TATAR STRAIT IS SITUATED TO THE WEST; IT IS GENETICALLY RELATED TO THE PRESENT DAY ABYSSAL DEPRESSION OF THE SEA OF JAPAN. THE WESTERN MARGIN OF THIS DOWNWARP IS PARTIALLY SUPERPOSED ON STRUCTURES OF THE SIKHOTE-ALIN' AND THE EASTERN SIKHOTE-ALIN' VOLCANIC ZONE. THE NEW FOLDED ZONE DETECTED ON THE SAKHALIN SHELF IN THE SAKHALIN PETROLEUM AND GAS ACCUMULATION. ALL THE DETECTED UPLIFTS ARE FOUND AT SEA DEPTHS UP TO 100 M AND MOST OF THE FOLDS ARE ACCESSIBLE FOR MARINE DRILLING. THE FOREDEEP OF TATAR STRAIT MUST BE REGARDED AS A MAJOR REGION OF PETROLEUM AND GAS FORMATION.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

L 20110-63 MLX(a)

USSR

ACCESSION NR: AP3006671

S/0286/63/000/008/0031/0031

AUTHOR: Siprikov, I. V.; Oshchepkov, P. K.; Grechanik, L. A.; Chuyko, G. A.; Faynberg, Ye. A.

B

TITLE: A method of producing emitters for electronic multipliers. Author's certificate NR 153979 class H 01j; 21g, 13 sub 19

SOURCE: Byul. izobreteniy i tovarny*kh znakov, no. 8, 1963, 31

TOPIC TAGS: emitter, electronic multiplier emitter, lead-silicate emitter

ABSTRACT: A method of producing emitters of electronic multipliers with continuous potential distribution on the surface of the emitters, characterized in that, to increase the coefficient of secondary emission of the emitter and its resistance against atmospheric influence, lead-silicate glass emitter blanks are fixed in a hydrogen atmosphere at 380-400C. Orig. art. has: no graphics.

ASSOCIATION: none

SUBMITTED: 05Feb62

DATE ACQ: 30Sep63

ENCL: 00

SUB CODE: SD, MA

NO REF SOV: 000

OTHER: 000

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

SIPRIKOV, I.V.

SIPRIKOV, I.V.

Electronics

71. Secondary-Electron Multiplier Developed

"On the Use of Continuous Secondary-Electron Multiplication for Amplifying Small Currents," by P. N. Dukhopkov, B. N. Skvortsov, B. A. Osanov, and I. V. Siprikov, Moscow, Pribory i Tekhnika Eksperimenta, No 4, Jul/Aug 60, pp 89-91

"A description is given of an electron multiplier which operates on the principle of continuous secondary-electron amplification without a focusing electrode. Fundamental considerations which form the basis for an approximate calculation of the multiplying system are given, and general requirements which must be satisfied by the material used as the secondary-electron emitter are formulated." The article describes the technology of preparation and composition of one variation of emitter material -- a mixture of TiO2, and MgO. Secondary-emission and time characteristics of the emitter are given. The article states that "at the present time a model of an electrometric stage with a continuous secondary-electron multiplier has been prepared for testing under laboratory conditions." Work was conducted in the electrophysics laboratory of the Institute of Metallurgy of the Academy of Sciences USSR. SC: 514, Sci. Info. Rpt. FB 131891 1-57, 4 Nov 60, Unal.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 627.74

GASPARYAN, A. M., Corresponding Member of the Armenian SSR Academy of Sciences, SIRADEGYAN, S. Ye., AKOPYAN, R. Ye.

"Energy Expenditures on Phase Slipping During Vertical Movement of Two-Phase Systems"

Yerevan, Doklady Akademii Nauk Armyanskoy SSR, Vol LV, No 5, 1972, pp 281-285

Abstract: A quantitative analysis is made of all airlift components on which pressure or the work of the operating element -- compressed air -- is spent. First, the case is considered where a stream of water lifts monodisperse solid particles into suspension; then the case is considered where there are no particles of defined shape and size and the water raised into suspension moves randomly in individual jets which are variable in time, colliding along each other and with the walls of the apparatus, with air bubbles, or an air stream; but the water falls (slips) with respect to the air at some velocity c. The case is also considered where, together with the water Q, solid particles with a volume W are also fed into the column. Then the column gradually is filled with suspension and the suspension begins to overflow.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

GASPARYAN, A. M., et al., Doklady Akademii Nauk Armyanskoy SSR, Vol LV, No 5, 1972, pp 281-285

The expenditures of work on holding the particles in the suspended state (or on sliding of the phases) can always be behind by the initial given V, ε, and $\phi = f(\phi)$. If, together with the air Q, water in a volume W is also used in the column, transport of the water-air mixture in this same manner is obtained also for this case:

$$P_1Q_1\ln(P_1:P_2)=h_2W_{\gamma 1}+(V_k^2:2g)W_{\gamma 1}+HF_{\phi\gamma 1}c+\Delta p_T(Q+W). \qquad (8)$$

Thus, the problem consists of finding the expenditures of work in the slipping of the phases -- the third time in the right-hand side of (8), for which it is necessary to define the mean values of c (the volumetric concentration of particles in the suspension) and c. This is done by analogy for the water and solid particle system.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC: 681.3.519.2

OTKHMEZURI, G. L., GOGIBERIDZE, A. Sh., GURULI, V. V., ZUBIASHVILI, Sh. M., SIRADZE, Sh. M., SIGUA, V. F., DATUASHVILI, A. N., Tbilisi Affiliate of the All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev

"A Device for Determining the Mathematical Expectation of Random Processes"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 48, Dec 73, Author's Certificate No 409244, Division G, filed 4 May 72, published 30 Nov 73, pp 120-121

Translation: This Author's Certificate introduces a device for determining the mathematical expectation of random processes. The device contains a pulse generator, source of input information, an amplifier, diodes, a rectifier, and a shifter. The pulse generator is connected to a modulator directly and to the first input of an interrupter through an accumulator. The source of input information is connected to the modulator through a comparison circuit. The shifter is connected through a multiplier to the output of the device. As a distinguishing feature of the patent, the working precision of the device is improved by adding magnetic accumulator elements.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

(3)

OTKHMEZURI, G. L. et al., USSR Author's Certificate No 409244

The inputs of these accumulator elements are connected to the corresponding diodes, and the diode inputs are connected to the output of the interruptor. The output of the rectifier is connected to the shifter and to the comparison circuit. The modulator output is connected through the amplifier to a second input of the interruptor.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

J-9605

SO. MILITARY MEDICAL JOURNAL
10: 1971 116

UDK 617.55-009.844:616-003.6

Guards Major of the Medical Service I. L. Sirak. A foreign body within the abdominal wall, which simulated the recurrence of an impacted inguinal hernia.

The patient N., aged 24, had been operated in the past for dropsy of the right testicle, and later, for right-side inguinal hernia. Before he was discharged from the hospital, there was noted a hardening in the area of the postoperative scar, but the attending physicians believed it to be a case of inflammatory infiltration.

After three years, this hardening was accidentally traumatized. An acute pain developed in the area, as well as nausea and vomiting. The patient was brought to the receiving room of the hospital and an emergency operation was performed on the assumption of a recurrence of an impacted inguinal hernia.

During the operation, in the scar tissue of the aponeurosis of the external oblique muscle of the abdomen, at a distance of 2 cm. from the external ring of the inguinal canal, a solid, swollen round formation was discovered, 2 x 2 cm. in size. On opening it, it was found to contain a ball of gauze.

The cavity was scraped, the surplus scar tissue removed, and new sutures were placed over the dissected aponeurosis and the skin. The patient's postoperative progress was uneventful.

Received in October 1965.

Medical Service

SIRAK, I.L.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--SCALE EFFECT IN THE CORROSION FATIGUE OF STEEL SHAFTS WITH PRESS FITTED PARTS -U-

AUTHOR-(04)-KARPENKO, G.V., PROGORETSKY, R.G., SIRAK, YA.M., FILIMONOV, G.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHIM. MEKHAN. MAT., 1970, 6, (2), 7-10

DATE PUBLISHED--------70

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

TOPIC TAGS--SEA WATER CORROSION, CORROSION FATIGUE, CORROSION RESISTANCE, STEEL CORROSION, SHAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1671 STEP NO--UR/0369/70/006/002/0007/0010

CIRC ACCESSION NO--AP0129041

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

272 020

CIRC ACCESSION NO--AP0129041 UNCLASSIFIED PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEEL SHAFTS 5-50 MM IN DIA. WITH PRESS FITTED PARTS ATTACHED TO THEM WERE SUBJECTED TO CORROSION FATIGUE TESTS IN A 3PERCENT NACL SOLUTION (SIMULATED SEA WATER). THE CORROSION FATIGUE RESISTANCE OF THE SHAFTS WAS APPRECIABLY REDUCED BY THE PRESENCE OF THE PRESS FITTED PARTS (BUSHINGS). HOWEVER, THE SCALE FACTOR (THE EFFECT OF SHAFT DIA. ON CORROSION FATIGUE RESISTANCE) WAS QUALITATIVELY THE SAME; INCREASING THE DIA. ALSO INCREASED THE FATIGUE LIFE.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

SIRAYA, T. N.

"Canonical Representations of Random Processes with Multiplicities of One and Two"

Teoriya Veroyatnostey i Eye Primeneniya [Theory of Probabilities and its Applications], 1973, Vol 18, No 1, pp 155-160 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V30, by the author).

Translation: Suppose $x_1(t)$ and $x_2(t)$, $t \in R^1$, are orthogonal linearly regular random processes of multiplicity 1 and $x(t) = x_1(t) + x_2(t)$. The relationships are studied between closed linear envelopes $H(x_1)$, $H(x_2)$ and $H(x)$ of values of the processes.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

Acc. Nr: AP0040872 Ref. Code: UR 0103

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr 1, pp 36-44

OPTIMAL CONTROL OF MONODIMENSIONAL PROCESSES WITH TIME-DELAY ARGUMENT

G. L. DEGTYAREV, T. K. SIRAZETDINOV

There is determined the principle of maximum as the necessary condition of the optimality of control in the systems described by nonlinear hyperbolic equations with a time-delay argument. Time-delay occurs both in the equations of movement and in the boundary conditions. A case of time-delay in control is considered.

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REEL/FRAME
19750611

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR UDC [621.357:621.79.027]:669.295

SHMANEV, V. A., SIRAZH, YU. A., POTAPOVA, N. I.

"Electrochemical Dimensional Machining of Titanium Alloys"

V sb. Novoye v elektrofiz. i elektrokhim. obrabotke materialov (What's New in Electrophysical and Electrochemical Treatment of Materials -- collection of works), Leningrad, Mashinostroyeniye Press, 1972, pp 35-37 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L304)

Translation: A study was made to select the electrolyte composition and the conditions of electrochemical dimensional machining for a large group of Ti-alloys at low voltage and low temperature, permitting high quality machined surfaces of the parts to be obtained. Six optimal electrolyte compositions are presented. One of them recommended for electrochemical machining of all the investigated alloys has the following composition (in % by weight): KNO_3 4.8, KBr 1.25, NaCl 4.8, Na_2SO_4 0.45, the rest, water.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR UDC: 519.2

SIRAZHDINOV, S. Kh., AZLAROV, T. A.

"Limit Theorems for Some Characteristics of the System $M|G|1|n$"

Izv. AN UzSSR. Ser. fiz. mat. n. (News of the Academy of Sciences of the Uzbek SSR. Physics and Mathematical Sciences Series), 1972, No 6, pp 24-30 (from RZh-Kibernetika, No 5, May 73, abstract No 5V79)

Translation: Limit theorems are proved for the busy period and number of demands served during the busy period in the system $M|G|1|n$ as $n \to \infty$ and $\rho \to \infty$. Here ρ is the load of the system $M|G|1$.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

UDC 519.217

7 USSR

SIRAZHDINOV, S. Kh., AZLAROV, T. A., SULTANOVA, D. Kh.

"Asymptotic Study of Certain Queueing Systems"

Bol'shiye Sistemy Massovoye Obsluzh. Nadezhnost' [Large Systems. Queueing. Reliability -- Collection of Works], Moscow, Nauka Press, 1970, pp 351-358 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V41 by O. Viskov).

Translation: A homogeneous Poisson flow of requests is serviced by n independently functioning identical devices. The duration of servicing is assumed to be exponentially distributed. The devices are subject to random failures. The mean time between failures of each device and the repair time are considered to be independently exponentially distributed random quantities with mean θ_1^{-1} and θ_2^{-1} respectively. After each servicing event, the device is given a preventative maintenance inspection, requiring a random time with exponential distribution and mean θ_3^{-1}. Upon completion of inspection, the device is sent to repair with probability p or returned to service with probability 1-p. It is assumed that the requests which find no free operating devices upon entering the system are refused and are considered lost. Requests, the servicing of which is interrupted due to a defective device, are also considered lost. Let P_{ijk} be the probability that i devices are involved in servicing, while j and k devices are in repair and

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR UDC 519.217

SIRAZHDINOV, S. Kh., AZLAROV, T. A., SULTANOVA, D. Kh., Bol'shiye Sistemy Massovoye Obsluzh. Nadezhnost' Moscow, Nauka Press, 1970, pp 351-358

inspection respectively. The asymptotic behavior of these probabilities is studied as 1) $\theta_2 \to \infty$, $\theta_3 \to \infty$, and 2) $\theta_1 \to 0$, $p \to 0$, $\theta_3 \to \infty$.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--DIMENSIONS OF LINEAR POLYMER CHAINS -U-

AUTHOR-(02)-SIRAZHDINOV, S.KH., TALIPOV, A.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(1), 10-13

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--LINEAR POLYMER, MATHEMATIC MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1959 STEP NO--UR/0291/70/014/001/0010/0013

CIRC ACCESSION NO--AP0123740

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 018

CIRC ACCESSION NO--AP0123740

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GENERALIZED MATH. MODEL IS DEVELOPED WHICH GIVES THE PROBABLE LENGTH OF A POLYMER CHAIN IN TERMS OF A VECTOR MATRIX. FACILITY: TASHKENT, GOSUNIV. IM. LENINA, TASHKENT, USSR.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

1/3 024 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--FORMATION OF METASTABLE PHASES WITH QUARTZ AND BETA EUCRYPTITE TYPE STRUCTURES DURING THE CRYSTALLIZATION OF SPODUMENE SPINEL SYSTEM GLASSES

AUTHOR-(03)-TOROPOV, N.A., SIRAZHIDDINOV, N.A., RAKHMANBEKOV, N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 599-600

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--QUARTZ, GLASS CRYSTALLIZATION, LITHIUM, MAGNESIUM OXIDE, ALUMINUM OXIDE, SILICA, GLASS STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0610 STEP NO--UR/0363/70/006/003/0599/0600

CIRC ACCESSION NO--AP0119524

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

UNCLASSIFIED PROCESSING DATE--23OCT70

2/3 024

CIRC ACCESSION NO--AP0119524

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPODUMENE SPINEL SYSTEM WAS STUDIED IN THE PRESENT WORK IN ORDER TO DET. THE VITRIFICATION REGIONS, AND IN RODER TO EXPLAIN THE SUCCESSIVENESS OF THE FORMATION OF THE CRYST. PHASES AS A FUNCTION OF THE COMPN., TIME, AND TEMP. OF CRYSTN. TO DET. THE VITRIFICATION REGIONS, THE SPODUMENE SPINEL SYSTEM WAS SUTDIED EVERY 5 WT. PERCENT. CHEM. PURE LI SUB2 CO SUB3, MGO, AL SUB2 O SUB3, AND SIO SUB2 SERVED AS THE STARTING MATERIALS. FOR THE PREPN. OF THESE GLASSES THE BATCH OF A GIVEN COMPN. WAS MELTED IN PT CRUCIBLES IN A FURNACE EQUIPPED WITH SILIT HEATING ELEMENTS AT 1450-1550DEGREES. THE CAPABILITY OF THE MELT TO VITRIFY DECREASED WITH INCREASING MGAL SUB2 O SUB4 CONTENT. IN ORDER TO INVESTIGATE THE CRYSTN. PROCESSES, THE SYNTHESIZED GLASSES WERE SUBJECTED TO HEAT TREATMENT AT 750-1200DEGREES IN AN AIR ATM., WITH BEING HELD FOR 1.5-50 HR AT THE FINAL TEMP., WHEREUPON THEY WERE QUENCHED IN AIR. BY USING SEVERAL DIFFERENT TECHNIQUES, THE STARTING TEMP. OF THE CRYSTN. WAS DETD. AS DEPENDENT ON THE COMPN., AND THE PRIMARY AND THE SECONDARY CRYST. PHASES WERE STUDIED AS DEPENDENT ON THE TEMP. AND THE TIME, AS WELL AS THEIR INTERRELATION DURING THE CRYSTN. PROCESS AND IN THE FORMATION OF A FINITE STURCTURE. A METASTABLE QUARTZ- OR QUARTZLIKE PHASE FORMS AS THE PRIMARY CRYST. PHASE AT THE EARLY CRYSTN. STAGE. WITH INCREASING CRYSTN. TEMP. THE VISCOSITY OF THE GLASS GRADUALLY DECREASES.

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3/3 024 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119524

ABSTRACT/EXTRACT--THIS RESULTS IN INCREASED MOBILITY OF THE IONS AND THERE OCCURS SIMULTANEOUSLY A SUBSTITUTION OF THE AL PRIME3 POSITIVE AND LI PRIME1 POSITIVE ATOMS BY SI PRIME4 POSITIVE IN THE QUARTZLIKE STURCTURE, THE CHEM. COMPN. OF WHICH TENDS TOWARDS EUCRYPTITE COMPN. THE METASTABLE PHASE OF THE BETA EUCRYPTITE IS OBSERVED AS THE SECONDARY PHASE DURING THE CRYSTN. OF THE GLASSES STUDIED. FACILITY: INST. KHIM. SILIKAT, IM. GREBENSHCHIKOVA, LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR UDC 576.851.555:576.858.9

SIRBILADZE, N. Ya., Tbilisi Institute of Vaccines and Sera

"Some Data on Clostridium perfringens Type B Bacteriophage"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, p 147

Abstract: Cl. perfringens bacteriophage was obtained from sewage, river water, soil, manure, etc. and from homologous (type B) and heterologous (type A) lysogenic cultures. Of 100 filtrates tested, five were active only against Cl. perfringens type B. Phages caused the formation of large zones of lysis on a solid medium, but lost their activity at dilutions of 1:10 and 1:100. Indicator strains were grown from Cl. perfringens type B cultures with mutants isolated from individual colonies. Of 270 mutants isolated, 58 were indicators and used to find lysogenic cultures. To obtain bacteriophage, these strains were grown in liquid media with the appropriate indicator cultures and the filtrates obtained from them were applied to solid media. A solid zone of lysis appeared only in type B cultures, the filtrates being inactive against type A, C, D, and E cultures. In a study of the cross action of Cl. perfringens. filtrates obtained from A and B cultures grown together were tested on all types of

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SIRBILADZE, N. Ya., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, p 147

Cl. perfringes and Cl. histolyticum. All the filtrates produced a large zone of lysis only on the type B cultures.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

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UDC 576.851.555:576.858.9

SIRBILADZE, N. Ya., Tbilisi Institute of Vaccines and Sera

"Type-Specific Properties of Cl. perfringens Bacteriophage"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, p 147

Abstract: Without employing any inducer, an active phage was accidentally isolated from a "spontaneously" lysed Cl. perfringens 28BP6K culture in daily use for 10 years as an indicator. Designated $U28_6 11$ phage, it was tested on 203 Cl. perfringens strains, including 145 type A, 10 type B, 9 type C, 11 type D, 5 type E, and 21 type F. It was able to lyse 138 of the type A strains, 5 of the type B, 4 of the type C, and 5 of the type F, lysing a total of 91% of the cultures used in the experiment. In a 1:10 dilution, $U28_6 11$ phage completely lost its ability to lyse B, C, and F type cultures. In type A cultures, however, it produced confluent lysis in a 1:1000 dilution. The titers of this phage ranged from 10^4 to 10^{10}. It is regarded as a virulent mutant of a moderate phage that appeared outside the cell as a result of "spontaneous" mutation. This form of existence may be characteristic of anaerobic phages.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC: 8.74

KIRILYUK, N. I., KVASOV, V. M., ZAYTSEV, N. G., SIRCHENKO, A. G., SOKOLOV, V. K., KHRAMOV, G. V.

"Structure and Composition of the Set of Technical Facilities of a Typical Automated Control System"

Kibernet. i vychisl. tekhn. Resp. mezhved. sb. (Cybernetics and Computer Technology. Republic Interdepartmental Collection), 1971, vyp. 12, pp 41-54 (from RZh-Kibernetika, No 5, May 73, abstract No 5V772 by the authors)

Translation: The paper deals with problems of selecting the technical complex of a typical automated enterprise management system which are of interest in the development and introduction of control systems.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR UDC: 8.74

KIRILYUK, N. I., SIRCHENKO, A. G.

"Organizational and Technical Preparation of Enterprises for Introducing Automated Enterprise Management Systems, and Introduction of These Systems"

Kibernet. i vychisl. tekhn. Resp. mezhved. sb. (Cybernetics and Computer Technology. Republic Interdepartmental Collection), 1971, vyp. 12, pp 109-119 (from RZh-Kibernetika, No 5, May 73, abstract No 5V773 by the authors)

Translation: The paper discusses means and methods of preparing enterprises for introducing an automated enterprise management system. The questions treated in the paper are of interest to enterprise planners and managers.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

KIRILYUK, N. I., SIRCHENKO, A. G.

"Some Problems of Improvement of the Structure and Changes of Functions of Administrations at Enterprises with ACS"

Kibernet. i Vychisl. Tekhn. Resp. Mezhved. Sb. [Cybernetics and Computer Technology. Republic Interdepartmental Collection], 1971, No 12, pp 124-129 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V668, by the authors).

Translation: The shortcomings of the existing administrative structure and means for its improvement are studied. Administrative functions at enterprises where ACS are in operation are described.

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USSR

KIRILYUK, N. I., SIRCHENKO, A. G.

"Organization of an Information Computer Center for Automated Enterprise Control Systems"

Kibernet. i Vychisl. Tekhn. Resp. Mezhved. Sb. [Cybernetics and Computer Technology. Republic Interdepartmental Collection], 1971, No 12, pp 124-129 (Translated from Referativnyy Zhurnal Kibernetika No 4, 1973, Abstract No 4V667).

Translation: Means and methods for creation of information computer centers at enterprises where ACS are being introduced are studied.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 517.946.9

EYDEL'MAN, S. D., and SIRCHENKO, Z. F.

"On the Application of the Principle of Averaging for the Solution of Some Parabolic Boundary Value Problems"

Kiev, Ukrainskiy Matematicheskiy Zhurnal, Vol 25, No 5, 1973, pp 621-631

Abstract: N. N. Bogolyubov's principle of averaging has been applied by many authors, both to ordinary differential equations and to partial differential equations. Several authors, including Eydel'man, have applied it to parabolic equations. In this article, Bogolyubov averaging is applied to the solution of the Dirichlet problem and to a problem with a directional derivative for quasi-linear parabolic equations of the second order. In the process, the averaging theorem is obtained as a result of a theorem that the solution of parabolic boundary value problems is a continuous function of the parameter. The latter theorem is quite complex; it is proven, subject to seven conditions, and the proof occupies most of the article.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 548.526

SIRENKO, A. F., Khar'kov State University

"The Problem of the Effect of Excess Vacancies on the Kinetics of Diffusion Processes in Bodies with a Distorted Crystal Lattice"

Kiev, Metallofizika, No 31, 1970, pp 70-75

Translation: Conditions under which the kinetics of diffusion processes in metals can be determined to a considerable degree by the presence of excess vacancies as compared with an equilibrium concentration are examined. According to experimental data, the acceleration of heterodiffusion in non-equilibrium objects, as well as of directional self-diffusion at comparatively low temperatures, is due to the higher values of effective vacancy concentration. The results of an investigation of the kinetics of the development of the porosity of vacancy origin in metal (copper, nickel) heated to high temperatures after a preliminary low-temperature plastic deformation are presented. An evaluation of the strength of excess vacancy sources is given.

Bibliography: 20 entries, 4 illustrations.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 669.71:669.3:539.376

PINES, B. YA., BADIYAN, YE. YE., and SIRENKO, A. F., Khar'kov State University imeni A. M. Gor'kiy

"Changes in the Substructure of Copper and Aluminum at High Temperature Creep"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 29, No 6, Jun 70, pp 1235-1241

Abstract: Results are presented of an investigation of the substructure of single and polycrystalline specimens of copper and aluminum and its changes in the process of high temperature creep. X-ray and chemical pickling methods were used. It is shown that the change in substructure characteristics (average size of blocks and disorientation) takes place mainly at the unsteady creep stage. The possible atomic mechanism of the formation of the substructure under conditions of diffusion creep is considered.

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1/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--X RAY DIFFRACTION DETERMINATION OF THE ORIENTATION OF GALLIUM SINGLE CRYSTALS -U-

AUTHOR-(03)-PINES, B.YA., SIRENKO, A.F., VLASOVA, N.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 142-4

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--X RAY DIFFRACTION ANALYSIS, CRYSTAL LATTICE STRUCTURE, GALLIUM, SINGLE CRYSTAL, STEREO CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1915 STEP NO--UR/0139/70/013/002/0142/0144

CIRC ACCESSION NO--AT0114355

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

2/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0114355

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR THE EASY INDEXING OF REFLECTIONS AND FOR THE DETN. OF THE GA SINGLE CRYSTAL ORIENTATION, AUXILIARY GRAPHS OF THE STD. STEREOGRAPHIC PROJECTION FOR DIFFERENT ORIENTATIONS OF THE CRYSTAL RELATIVE TO THE PRIMARY BEAM ARE GIVEN. A REF. TABLE RELATING THE ANGLES BETWEEN DIFFERENT REFLECTION PLANES IN THE LAUE DIAGRAM TO THE POSSIBLE HKL INDEXES IS ALSO PRESENTED.

FACILITY: KHAR'KOV, GOSUNIV. IM. GOR'KOGO, KHARKOV, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 539.3

PELEKH, B. L., PODSTRIGACH, Ya. S., SIRENKO, I. G.

"Some General Problems of the Theory of Thermal Elasticity of Transversely Isotropic Envelopes"

Mekhanika Tverdogo Tela, No 6, 1971, pp 81-88.

ABSTRACT: The basic equations of the non-coupled, quasistatic problem of thermal elasticity of transversely isotropic envelopes are produced on the basis of less rigid hypotheses than the classical assumptions, namely: it is assumed that the perpendicular is rotated during the process of deformation by a certain angle, without being curved and without changing its length (shear model). A number of theoretical statements are developed for this version: a variation statement of the problem is formulated, a system of resolving equations in forces and moments is produced, complex conversion of the basic equations is introduced, a theorem of uniqueness of the solution of the boundary problems is proven, etc. Some aspects of the application of the precise approaches to the construction of thermal elasticity equations for plates and shells have been studied in earlier works, in which the resolving equations are produced in generalized displacements. However, it has been found possible to construct a theory of thermal elasticity of shells for the shear model just mentioned of equal quality to the classicial theory based on the hypotheses of Kirkhoff and Love.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 628.543:663.631.8

BUDKEVICH, G. B., MOMOT, V. YA., SIRENKO, I. I., TARASENKO, YU. A., and SHEKA, I. A.

"Removal of Mercury From Polluted Water by Silicon Oxyhydride"

Kiev, Khimicheskaya Tekhnologiya, No 6, Nov/Dec 73, pp 50-52

Abstract: The compound $(H_2Si_2O_3)_N$ is proposed as an absorbent. The Hg ion in solution is reduced to the metal on the surface of the $(H_2Si_2O_3)_N$ where it is fixed. A table gives the amount of Hg removed under various conditions. The amount of Hg removed is 99+% for every case except the high Hg concentration (4000 mg). In another set of experiments the concentration of Hg was reduced 40 to 85 times at a pumping rate of 4 to 6 l/hr over 1 kg of absorbent.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

JPRS 61430
8 Jan. 1974

UDC 628.543:669.631.8

REMOVAL OF MERCURY FROM WASTE WATER BY SILICON OXYHYDRIDE

(Article by G. B. Rudkevich, V. Ya. Monot, I. I. Sirenko, Yu. A. Tarasenko, and I. A. [illegible] Kiev, Khimicheskaya Tekhnologiya, Russian, No 6, 1973, signed to press 12 December 1973, pp 33-37)

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In producing chlorine and alkalis by the mercury method, the waste water contains a considerable amount of mercury in metallic form, in the form of low-solubility compounds, and in ion form.

The only method of removing mercury from waste water that is presently used in the technology of producing chlorine and alkalis is sulfide treatment, based on the interaction of bivalent mercury and the sulfide ion [1]. The finely-dispersed colloid sediment of the sulfide of mercury is difficult to remove by filtration or clarification. In addition, where there is insufficient sodium sulfide, there is incomplete bonding of the ion mercury; where there is too much, an insoluble complex Na_2HgS_2 is formed. The use of other methods of cleansing waste water [2 -- 7] is restricted by the capability of extracting only the ion form of mercury. For this reason, searches for new and more efficient methods of extracting mercury from waste water represent an important and urgent scientific-technical problem.

One promising method for cleansing waste water of mercury appears to be the use of a silicic water-containing absorbent [8], a silicon oxyhydride $(HSiO_{3/2})p$. When the silicon oxyhydride comes in contact with solutions that contain ion mercury, there occurs on its surface a reduction of the ions to the metallic state. The reduced metallic mercury settles on the surface of the sorbent and sticks to its pores because of dispersion forces.

The study gives experimental data concerning the removal of mercury from waste water that comes from the production of sodium hydrate using the mercury method; the experiments utilize the adsorption-reduction method by means of silicon oxyhydride. For the investigation, the fraction 3+0.5 mm silicon oxyhydride was used, obtained by procedures described in [9]. The total volume content of the pores of the silicon oxyhydride that was obtained,

SIRENKO, I. I.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

1/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--DETERMINATION OF TRACE IMPURITIES OF HEAVY METALS ARISING DURING THE ELECTROLYSIS OF SODIUM CHLORIDE WITH A MERCURY CATHODE -U-

AUTHOR-(04)-DEMYANCHUK, A.S., MIKHAYLOV, V.S., VOLNITSKIY, G.P., SIRENKO, I.I.

COUNTRY OF INFO--USSR

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SOURCE--ZH. PRIKL. SPEKTRSOK, 1970, 12(1) 129-30

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYSIS, SODIUM CHLORIDE, AMALGAM, METAL ELECTRODE, CATHODE, MERCURY, CHEMICAL PURITY, ALUMINUM, VANADIUM, IRON, CHROMIUM, LEAD, MANGANESE, COPPER/(U)ISP28 SPECTROGRAPH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/0928 STEP NO--UR/0368/70/012/001/0129/0130

CIRC ACCESSION NO--AP0053852

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

2/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0053852

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRACES OF AL, V, FE, CR, PB. MN, CU, AND NI (10 PRIME NEGATIVE3 MINUS 10 PRIME NEGATIVE7 PERCENT) IN SOLID AND LIQUID AMALGAMS, NAOH SOLN., AND IN GRAPHITE ARE DETD. BY SPECTROGRAPHY. AN ISP-28 SPECTROGRAPH, WITH A 17-18-A A.C. ARC AND 1 MIN EXPOSURE WAS USED. THE ANAL. LINES ARE AL I 3082.2, V I 3185.4, FE II 2599.4, CR II 2835.6, PB I 2833.1, MN I 2801.1, CU I 3274.0, AND NI I 3050.0 ANGSTROM. THIS METHOD WAS USED FOR DETG. THE SOURCES OF THESE IMPURITIES IN THE INDUSTRIAL ELECTROLYSIS OF NACL WITH A HG CATHODE. THE RELATIVE STD. DEVIATION WAS LESS THAN 20PERCENT.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 678.01:620.17:627.039

SERGEYEV, V. I., DEYEV, Yu. S., KRUGLYY, M. S., and SIRENKOV, V. I., Scientific Research Institute of Plastics, Moscow

"A Test Unit of Polymers by Irradiation Effect"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 1, 1972, pp 87—89

Abstract: The construction and operation of a test unit for polymers is described by reference to its schematic drawing. The unit is designed for carrying out tensile and creep tests and studying the stress relaxation by tension of polymers under vacuum and ionizing irradiation conditions in a wide temperature interval. The unit is mounted on the base of a linear electron accelerator with 5 Mev energy of accelerated electrons and their 50 μA average and 75 mA pulse current. Some preliminary investi-

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

SERGEYEV, V. I., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 1, 1972, pp 87-89

gation results, stress relaxation curves, of mechanical properties of polytetrafluoroethylene subjected to the action of fast electrons show that the relaxation of mechanical properties proceeding in polytetrafluoroethylene is considerably intensified by irradiation and, therefore, an increase of the creeping rate can be anticipated. Two illustr., eight biblio. refs.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

Acc. Nr: AP0054656 5 Ref. Code: UR9115 3

PRIMARY SOURCE: Ortopediya, Travmatologiya i Protezirovaniye, 1970, Nr 2, pp 39-44

ANTIBIOTICS IN THE PROPHYLAXIS AND TREATMENT OF BACTERIAL INFECTION IN TRAUMATOLOGIC AND ORTHOPAEDIC PATIENTS

V. M. Mel'nikova, A. I. Gladshteyn, O. N. Markova, M. I. Malova, N. P. Ivanova, Z. G. Strinova and V. V. Kuzmenko

Facts on the prophylaxis and treatment with antibiotics of infected wounds in traumatologic and orthopaedic patients based on clinical and laboratory data of CITO are presented in the paper. In primary surgical wound debridement the authors prescribe penicillin with streptomycin or tetracyclin. It is stressed that the use of antibiotics in the so-called „clean" orthopaedic operations should be substantially limited and the demands of surgical aseptic enhanced. In purulent wound infection the staphylococcus and representatives of the intestinal group of microorganisms were the most common bacterial associations cultured. For the last year the appearance of staphylococcus in the monoculture from the infected wounds increased. Various antibiotics, their combinations with each other, sulfanilamides or nitrofuranic preparations, depending on the microflora sensitivity to them and concentration created in the focus of infection, are used in the treatment of purulent infection. The success of antibacterial therapy has been shown to depend on the rational use of antibiotics in complex with other methods of conservative and operative treatment and drugs which stimulate the organism reactivity.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 536.46:533.6

KOSSOY, A. A., OZEROV, Ye. S., SIRKUNEN, G. I.

"Combustion of a Low Boiling-Point Bundle of Particles of a Two-Component Metal-Containing Fuel"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works), Moscow, "Nauka", 1972, pp 207-211 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B936)

Translation: The problem of the ignition and combustion of a hydrocarbon bundle of a porous portion of a two-component, metal-containing fuel is discussed. It is assumed that heating of the portion is uniform along the radius: the hydrocarbon is evaporated from the surface that depresses into the portion with time; there are no reactions in the pores of the dry layer; the concentration and temperature fields in the resulting film and the concentration field in the dry layer are quasistationary. It is shown that the combustion limit of the hydrocarbon bundle is somewhat higher than the combustion limit of a drop of pure hydrocarbon; one can assume from approximate calculations of the combustion time of the bundle that the diffusion combustion regime is immediately following the introduction of particles into the heated gas medium. Authors' abstract.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 621.394.622.2(088.8)

SIROBABA, Ya. Ya., POTAPOV, Ye. P., PERLYA, Ya. Z., BURTSEV, B. V.

"A Device for Cadence Synchronization"

USSR Author's Certificate No 258368, Filed 7 Feb 68, Published 24 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D96 P)

Translation: This Author's Certificate introduces a device for cadence synchronization of radio line receivers with noise-like phase-keyed signals. The unit contains a pseudorandom sequence discriminator and a controlled oscillator. To increase resistance to noise interferences and eliminate ambiguities, the controlled oscillator is connected through a frequency divider to a phase shifter module, the output of the discriminator also being connected to this module through a filter and an integrator. The output of the phase shifter module is connected to a pulse shaper which is connected to a pseudorandom sequence generator. Resumé.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC: 621.315.592

GERASIMENKO, N. N., DONINA, V. I., LEZHEYKO, L. V., SIROCHINSKIY, S. E., and SMIRNOV, L. S., Institute of Semiconductor Physics, Novosibirsk

"Irradiation of Diamond Crystals by Protons"

Leningrad, Fizika i tekhnika poluprovodnikov, No 8, 1972, pp 1489-1494

Abstract: An investigation is made of the effects of irradiating diamond crystals with protons, plus subsequent annealing, on the characteristics of the crystal, and an explanation is given of the reactions of the specimens by considering the peculiarities of the disorder region and the consequent compensation of conductivity. Changes in the electrical conductivity and cathode luminescence spectra of the diamonds when proton-irradiated and annealed were recorded. The problem of finding the laws governing the behavior of the diamonds under such treatment was solved by comparing the data obtained after irradiation by both protons and electrons since irradiation by electrons permits definite assumptions regarding defects resulting in electrical conduction and cathode luminescence spectrum changes. Three types of crystal were investigated: Natural, types Ia and IIa; synthetic nonconducting crystals;

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

GERASIMENKO, N. N., et al, Fizika i tekhnika poluprovodnikov, No 8, 1972, pp 1489-1494

synthetic p-type semiconductor crystals alloyed with B, Al, and Ti during growth. The authors acknowledge the assistance of V. V. Bolotov for his useful comments, Ye. V. Sobolev for offering the natural diamond crystals, and of V. I. Abramenko, S. A. Sokolov, V. A. Patrenin, and Yu. M. Limasov for irradiating the crystals.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC: 8.74

SALYGA, V. I., SIRODZHA, I. B.

"Teaching a Machine Optimum Control of a Multifactor Object With the Use of a Recognition Algorithm by the R-Function Method"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Devices and Systems for Automation. Republic Interdepartmental Thematic Scientific and Technical Collection), 1972, vyp. 22, pp 23-31 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V578)

Translation: The paper deals with problems of synthesizing teachable control systems which utilize methods of the theory of automatic pattern recognition. Experimental results are presented on teaching control of a flotation process to a computer. Authors' abstract.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC: 8.74

SIRODZHA, I. B., SALYGA, V. I., MYSHKO, Ye. I., VASILENKO, Yu. A., KARTASHOV, L. N., PRYANITSKIY, A. M., KUZ'MINA, O. I.

"Modeling the Process of Teaching Pattern Recognition by the Method of R-Functions With the Use of a Digital Computer"

Probl. bioniki. Resp. mezhved. temat. nauch.-tekhn. sb. (Problems of Bionics. Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 7, pp 106-112 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V582)

Translation: The paper deals with a mathematical model of instruction whose basis is a developed learning algorithm of pattern recognition distinguished by the use of a fundamentally new procedure of predicative description of arbitrary geometric forms in multidimensional spaces with the aid of R-functions. Authors' abstract.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--NARROW BAND SPECTRAL PHONOCARDIOGRAPHY AND THE RESULTS OF FREQUENT ANALYSIS OF SOUNDS AND MURMURS IN ATHEROSCLEROTIC CARDIOSCLEROSIS AND

AUTHOR-(03)-TUMANOVSKIY, M.N., SIROTA, A.D., ZENKEVICH, M.M.

COUNTRY OF INFO--USSR

SOURCE--KARDIOLOGIYA 10(1): 93-98. ILLUS. 1970

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEART DISEASE, PHONOCARDIOGRAPHY, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0538 STEP NO--UR/0495/70/010/001/0093/0098

CIRC ACCESSION NO--AP0131161

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0131161

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OBJECTIVE INDICES OF SPECTRAL CARDIAC SOUNDS AND MURMURS IN THE FORM OF RELATIVE VALUES, AMPLITUDE, DURATION AND PHASE OF THE MAXIMAL AMPLITUDE, WERE ELABORATED. THIS TECHNIQUE ENABLE DETERMINATION OF NORMAL VALUES OF HEART SOUNDS IN 80 HEALTHY PERSONS. THE RELATIVE VALUES OF THESE INDICES IN 68 PATIENTS SUFFERING FROM CARDIAC DISEASES WERE STUDIED; THE RELATIVE DEVIATIONS IN THE SOUND SEMIOTICS IN MYOCARDIAL AND CARDIAC LESIONS WERE ESTABLISHED. THE SOUND ALTERNATION OF THE HEART AND VARIABILITY OF HEART SOUNDS AT HIGH FREQUENCY WERE ESTABLISHED. THIS TECHNIQUE IS RECOMMENDED FOR THE EXPRESS ANALYSIS IN MASS EXAMINATIONS OF PATIENTS AFFECTED WITH CARDIAC DISEASES. FACILITY: VOROZNZH MED. INST., VORONEZH, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

1/2 021 UNCLASSIFIED

TITLE--RADIOLOGICAL CHARACTERISTICS AND THE COURSE OF EARLY STAGES OF ANTHRACOSIS -U- PROCESSING DATE--30OCT70

AUTHOR-(05)-LYUBOPUDROV, V.YE., ZHILKO, S.M., KIRYUKHINA, N.V., SIROTA, G.M., SKOCHELYAS, A.R.

COUNTRY OF INFO--USSR

SOURCE--FRUNZE, SOVETSKOYE ZDRAVOOKHRANENIYE KIRGIZII, NO 1, 1970, PP 42-44

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RESPIRATORY SYSTEM DISEASE, X RAY APPLICATION, INDUSTRIAL HYGIENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1212 STEP NO--UR/9093/70/000/001/0042/0044

CIRC ACCESSION NO--AP0123176

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

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CIRC ACCESSION NO--AP0123176 UNCLASSIFIED PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHARACTERISTICS OF THE INITIAL STAGES OF ANTHRACOSIS, AS DETERMINED BY X RAY, WERE STUDIED, AND THE COURSE OF THE DISEASE WAS TRACED. COAL MINERS WERE STUDIED ON THE BASIS OF X RAYS REPEATED EVERY TWO TO THREE YEARS. IT HAS ESTABLISHED THAT LINEAR AND NODULAR LOCAL FIBROSES ARE THE INITIAL STAGES OF ANTHRACOSIS. SCLEROTIC FIBROSIS WAS FREQUENTLY COMBINED WITH BRONCHITIS OR EMPHYSEMA, WHICH SEVERLY COMPLICATE THE COURSE OF THE DISEASE. FACILITY: MEDICAL INSTITUTE IMENI A. M. GOR'KIY. FACILITY: OBLAST CLINICAL HOSPITAL OF OCCUPATIONAL DISEASES, DONETSK.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

1/2 024

UNCLASSIFIED

TITLE--INCIDENCE, PECULIARITIES OF THE CLINICAL PICTURE AND COURSE OF VARIOUS FORMS OF ANTRACOSIS -U-

PROCESSING DATE--20NOV70

AUTHOR-(04)-LYUBOMUDROV, V.YE., KIRYUKHINA, N.V., SIROTA, G.M., GURKOVSKAYA, S.M.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 6, PP 71-74

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BONE DISEASE, RADIOGRAPHY, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1911

STEP NO--UR/0504/70/042/006/0071/0074

CIRC ACCESSION NO--AP0129260

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

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UNCLASSIFIED

CIRC ACCESSION NO--AP0129260 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPARATIVE STUDY WAS MADE OF PECULIARITIES OF DEVELOPMENT, INCIDENCE, CLINICAL PICTURE AND COURSE OF NODULAR AND DIFFUSE SCLEROTIC FORM OF ANTRACOSIS. IT WAS ESTABLISHED THAT DIFFUSES SCLEROTIC FORM RAN A MORE SEVERE COURSE THAN NODULAR ONE, PROGRESSED MORE RAPIDLY ACCORDING TO THE DATA OF CLINICAL AND ROENTGENOLOGICAL STUDY. RECOMMENDATIONS ARE GIVEN CONCERNING THERAPY, EVALUATION OF CAPACITY FOR WORK AND PLACEMENT OF PATIENTS.

FACILITY: KAFEDRA PROFPATOLOGII DONETSKOGO MEDITSINSKOGO INSTITUTA I OBLASTNAYA KLINICHESKAYA BOL'NITSA PROFESSIONAL'NYKH ZABOLEVANIY, DONETSK.

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UDC: 616.24-003.656.6

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LYUBOMUDROV, V. Ye., ZHILKO, S. M., KIRYUKHINA, N. V., SIROTA, G. M., SKOCHELYAS, A. R., TAUSHAN, M. T., and YARTSEVA, P. A., Medical Institute imeni A. M. Gor'kiy, and Oblast Clinical Hospital of Occupational Diseases, Donetsk

"Radiological Characteristics and the Course of Early Stages of Anthracosis"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 1, 1970, pp 42-44

Abstract: Characteristics of the initial stages of anthracosis, as determined by x-ray, were studied, and the course of the disease was traced. Coal miners were studied on the basis of x-rays repeated every two to three years. It was established that linear and nodular local fibroses are the initial stages of anthracosis. Sclerotic fibrosis was frequently combined with bronchitis or emphysema, which severely complicate the course of the disease.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 621.372.54:621.316.925

SIROTA, I. M. and BOGAChENKO, A. Ye

"Band—Pass Filters for Relay Protection Devices"

Probl. tekhn. electrodinamiki. Resp. mezhved. sb. (Problems of Technical Electrodynamics. Republic Interdepartmental Collection) No 37, 1972, pp 40 - 50 (from RZh-Avtomatika Telemechanika i Vychislitel'naya Tekhnika, No 3, Mar 73, Abstract No 3 A344 by the authors)

Translation: The circuits considered are two-unit, L-shaped, LC voltage and current frequency filters. On the basis of quadripole theory, those relationships of the elements are found which will best tune out interference and yield the necessary output power from the filters for a voltage and current at 100 Hz. The parameters of filter elements which will satisfy the requirements of relay protection are selected. Seven illustrations, one table.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 546.3-19:537

SIROTA, N. N., Academician of the BSSR Academy of Sciences, FEDOTOV, A. K., Institute of Solid-State and Semiconductor Physics, BSSR Academy of Sciences

"Electrical Conductivity and Superconductivity of Solid Solutions of Vanadium, Niobium, and Chromium"

Minsk, Doklady Akademii Nauk BSSR, Vol 17, No 7, Jul 73, pp 613-616

Abstract: An investigation is made of the variation, with temperature, of resistivity $\rho(T)$ of solid solutions in the vanadium-niobium-chromium ternary system at temperatures from 2 to 350°K. It is shown that at temperatures below 50°K the function $\rho(T)$ is proportional to the square of the temperatures, while it is linear above 250°K. A correlation is found between the superconductive parameters of dilute alloys of V-Cr and Nb-Cr and their resistivity above the Debye temperature.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

SIROTA, N. N., GOSTISHCHEV, V. I., and DROZD, A. A., Institute of Solid State Physics and Semiconductors, Belorussian Academy of Sciences

"Study of Thermoelectromotive Force of Aluminum in Strong Magnetic Fields at Low Temperatures"

Moscow, Pis'ma v ZhETF, Vol 16, No 11, 1972, pp 580-583

Abstract: It is asserted that this is the first paper to be devoted to the effect of magnetic fields on the magnitude, sign, and anisotropy of the thermoelectromotive force in aluminum. Experiments conducted on the effect of a constant magnetic field of intensities of up to 50 kOe on the dependence of the thermoelectromotive force on anisotropy and temperature in aluminum in the temperature range of 5.4 to 79° K are described. The method of the experimentation has been described in earlier papers, among them one by the authors named above in the same journal (16, No 4, p 242, 1972). The object of the experimentation was a monocrystal cut from an ingot and measuring 3X4X60 mm, and the magnitude of the thermoelectromotive force was determined as a ratio to that of lead. Curves of the force as functions of the temperature and the magnetic field intensity are given, as well as a diagram of the force anisotropy.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 538.245

SIROTA, N. N., Academician of the Academy of Sciences Belorussian SSR, and
MAZOVKO, A. V., Institute of Solid State and Semiconductor Physics, Academy of Sciences Belorussian SSR

"Magnetostriction of Fe-Ni-Co System Alloys in Strong Magnetic Fields"

Minsk, Doklady Akademii Nauk BSSR, Vol 16, No 7, 1972, pp 596-599

Abstract: The authors made a systematic study of the longitudinal magnetostriction of Fe-Ni-Co system alloys in strong magnetic fields at room temperature. Specimens averaging 10 cm in length and 4-5 mm in diameter were used. The magnetostriction was determined by means of wire strain gages on an electronic tensometer. A longitudinal magnetizing field of up to 10 kOe was generated in the pole gap of an electromagnet. On the basis of results magnetostriction isolines were plotted on the concentration triangle for specimens at 5 and 10 kOe. By extrapolating the rectilinear sector of the field dependence of magnetostriction in strong fields for H=0, values were obtained for the saturation magnetostriction λ_s. The saturation magnetostriction isolines are shown for the entire system.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC: 538.734.3:546.86

SIROTA, N. N., Academician, Belorussian Academy of Sciences, and SHELET, A. U.

"Mean-Square Dynamic Ion Shifts and Structural Amplitudes of Gallium Nitride"

Moscow, Doklady Akademii Nauk SSSR, 11 January 1973, pp 321-324

Abstract: The purpose of the experiments described in this paper is to determine, by x-ray analysis, the structural amplitudes of gallium nitride and, on the basis of the values thus obtained, to compute the mean-square dynamic shifts of the gallium and nitrogen ions in various crystallographic directions. A description is given of the preparation of the gallium nitride specimens. Computation of the absolute values of the structural amplitudes of these specimens showed that the absolute measurement of the primary beam intensity produced the same results as standard methods. The measurements of the reflex intensities of the x-ray diffraction spectra were corrected for polarization of the x-ray beams and the prevailing orientation of the (100) plane. Noting a disparity between the parameters of the gallium nitride cell obtained by various researchers, the authors of the present paper measured those parameters at room temperature. They conclude that the anisotropic

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

SIROTA, N. N., et al, Doklady Akademii Nauk SSSR, No 2, 1973, pp 321-324

UDC: 538.734.3:546.86

nature of the dynamic ion shifts and the dependence of this shift on the type of ion must be taken into account in studying the nature of the chemical bonds in the gallium nitride.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC 539.27:546.3

SIROTA, N. N., Academician of the Academy of Sciences Belorussian SSR, and RYZHKOVSKIY, V. M., Institute of Solid-State and Semiconductor Physics, Academy of Sciences Belorussian SSR, Minsk

"Neutron Diffraction Study of Magnetic Transformations in Mn_2As-Mn_2Sb System"

Moscow, Doklady Akademii Nauk SSSR, Vol 203, No 6, 1972, pp 1275-1278

Abstract: The article describes results of a neutron diffraction study of the structure and magnetic transformations in the quasibinary Mn_2As-Mn_2Sb system at temperatures of 78 to 650° K. The neutron diffractometer mounted on the research reactor of the Academy of Sciences Belorussian SSR, using an effective neutron wavelength of $\lambda = 1.24$ Å, was used for the neutron diffraction analysis. The magnetic state of the specimens was studied from the behavior of mixed nuclear-magnetic (001), (110), (101) reflexes in the case of ferrimagnetic ordering and magnetic (003), (101), (111) reflexes in the case of antiferromagnetic ordering. An analysis was also made of variations in

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

SIROTA, N. N., and RYZHKOVSKIY, V. M., Doklady Akademii Nauk SSSR, Vol 203, No 6, 1972, pp 1275-1278

diffuse neutron scattering in the transition from a magnetic ordered to a disordered state. A phase diagram of magnetic transformations was constructed from the neutron diffraction data.

The magnetic-state diagram indicates that the formation of solid solutions leads to a drop in the magnetic transformation temperature at both edges of the quasibinary system. This drop is due to the difference in the types of magnetic ordering of the components. The system contains both ferrimagnetic and antiferromagnetic domains of two types: a) with the direction of the magnetic moments parallel to the axis C (F_i^+, AF^+); b) with magnetic moments situated in the basal plane (F_i^-, AF^-).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020014-7

USSR

UDC: 539.26:536.5.081.7

SIROTA, N. N., Academician Belorussian Academy of Sciences, and
YANOVICH, V. D.

"Periods of Identity and Mean-Square Displacements of Ions of Solid Solutions of Zinc and Cadmium Selenides"

Moscow, Doklady Akademii Nauk SSSR, vol 204, No 3, 1972, pp 583-585

Abstract: The purpose of the work described in this article was to establish the propagation limit of solid solutions with sphalerite and wurtzite structures in ZnSe-CdSe systems and to investigate by means of x-ray analysis the rules for the change in quantity of the mean-square dynamic shifts of selenium ions and of the zinc and cadmium ions averaged over the mass. Earlier, determinations had been made of mean-square displacements of selenium, zinc, and cadmium ions from the x-ray analysis data; the present work discusses the method of preparing specimens. Alloys of the ZnSe-CdSe system were prepared by direct fusing of components in the relationship of $(ZnSe)_x(CdSe)_{1-x}$ in an argon atmosphere. Flat, powdered specimens were used in x-ray analysis with URS-50I equipment in monochromatized CuK_α radiation. The authors claim to be the first to detect the change in mean-square shift of solid solution ions as a function of the composition. They are

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