Acc. Nr: AP0034404

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 2, pp 185-188

SIGNIFICANCE OF AMPICILLIN CONCENTRATIONS IN THE TREATMENT OF SURGICAL PATIENTS

D'yachenko, G. M.; Butylina, [redacted]; Vasil'yev, V. K.; Navashin, S. M.

Institute for Clinical and Experimental Surgery, Department of Experimental Therapy of National Institute for Antibiotics, Moscow

Ampicillin was used in the treatment of surgical cases and the dynamics of the antibiotic blood levels was studied. It was found that ampicillin produced a satisfactory effect and was retained in blood for 5 hours in therapeutic concentrations. In patients with the kidney affections the antibiotic therapeutic concentrations were 4—6 times higher than usual ones. The dose of ampicillin in the treatment of patients with the kidney insufficiency should be individual, depending on the drug blood level.

D.M.

REEL/FRAME

19711064

USSR

BUTYLKIN, V. S.; KUDREVATOVA, O. V. (Institute of Radio Engineering and Electronics of the USSR Academy of Sciences)

"Use of a Wave Function for a System of Nonorthogonal Functions and Determining the Contribution of Discrete Levels of a One-Particle System to the Probability of Its Multiquantum Ionization"

Moscow, Teoreticheskaya i Matematicheskaya Fizika; October, 1970; pp 154-8

ABSTRACT: It is proposed that a wave function for a system of nonorthogonal functions be used to describe the process of a multiquantum transition of a material system from the ground state to a continuous spectrum, taking into account its discrete energy levels. Equations for the wave function are derived. The application of perturbation theory to these equations makes it possible to describe, in the first approximation, the motion of the system in the discrete portion of the spectrum independently of its continuous portion. By means of a solution obtained for the discrete levels the authors calculate the probability of a transition of the system to a continuous spectrum. Thus, multiquantum ionization can be described in the first order of perturbation theory.

The article includes 16 equations. There are three references.

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1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PRODUCTION OF FILTER GAUZES FROM POLYPROPYLENE AND POLYETHYLENE MONOFILAMENTS -U-

AUTHOR-(03)-BUTYLO, K.P., PINCHUKOVA, YE.F., RUDUKHA, B.N.

COUNTRY OF INFO--USSR

SOURCE--LEGKA PROM. 1970, (1), 31-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--FILTRATION, POLYPROPYLENE, POLYETHYLENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0878 STEP NO--UR/0513/70/000/001/0031/0033

CIRC ACCESSION NO--AP0124541

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0124541
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW WITHOUT REFS. ON PROPERTIES, USE, AND PRODUCTION OF THE TITLE FILTER GAUZE. THE REQUIREMENTS FOR APPLICATION IN THE CHEMICAL AND COAL INDUSTRY (E.G., THE STABILITY TO HCL, H SUB2 SO SUB4 AND TEMPS. LESS THAN OR EQUAL TO 80DEGREES, ETC.), AND THE PHYS. AND CHEM. PROPERTIES OF THE FILTER GAUZES WERE DISCUSSED.

UNCLASSIFIED

USSR

UDC: 621.374.32

BUTYL'SKIY, Yu. T.

"On the Problem of Classifying End-Around Counter Circuits"

V sb. Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi, 1970 g. Vyp. 1 (Materials of the Scientific and Technical Conference. Leningrad Electrical Engineering Institute of Communications, 1970. No 1), Leningrad, 1970, pp 78-70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 70, Abstract No 11A37)

Translation: In view of the variety of end-around counter circuits, the author proposes a classification of circuits of this kind which is based on the type of interconnection between flip-flops. It is proposed that one class should contain end-around counters whose flip-flops are not electrically interconnected and operate under conditions of separate triggering. Put into a second category are circuits with common potential connections of all flip-flops, and with potential connections between adjacent flip-flops. Two illustrations, bibliography of four titles. Yu. Kh.

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USSR

UDC 621.373

BELOV, V. D., BORODYANSKIY, I. L., BUTYL'SKIY, YU. P.

"Synthesizer Decade with a Low Level of Spurious Products"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi. Vyp. 3 (Materials of the Scientific and Technical Conference. Leningrad Electrotechnical Communications Institute. Vyp. 3), Leningrad, 1970, pp 205-209 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D287)

Translation: This article contains the results of an investigation of the possibility of realizing synthesizer decades based on a capacitive mixer and a counting frequency divider made of current switches with a ratio of the output signal to the stray product level on the order of 120 decibels. There are two illustrations, three tables and a five-entry bibliography.

1/1

USSR

UDC 546.264-162

BUTYRIN, G. M., ROGAYLIN, M. I., and CHALYKH, YE. F., Moscow Chemico-Technological Institute imeni D. I. Mendeleev

"Porous Structure of Synthetic Graphite and Its Classification According of Specific Volume and Pore Dimensions"

Moscow, Khimiya Tverdogo Topliva, No 1, Jan/Feb 71, pp 131-146

Abstract: One of the most important properties of artificially produced graphites is their porosity which determines the physiconechanical, thermophysical, and physicochemical properties of these materials. The porosity also determines some undesirable properties of graphitic materials; their high permeability and low mechanical - chemical stability. A number of methods have therefore been developed to reduce porosity. Mercury porometry is most widely used to study porosity. This method is sufficiently accurate and one can determine pore size and distribution over the entire range. A literature survey showed that most classifications of graphite materials are limited in their applicability for various reasons. A new classification of 'artificial graphite' based on pore size, as determined by mercury porometry of several industrial graphites, was developed and proposed. The classification is based on pore size and specific volume of the pores. Artificial graphites are divided into extremely dense, dense, porous, moderately, 1/2

USSR

BUTYRIN, G. M., et al., Khimiya Tverdogo Topliva, No 1, Jan/Feb 71, pp 131-146

porous, and extremely porous varieties. On the basis of the movement of gases in a real, porous graphite structure, they are conveniently subdivided into Folmerov, Knudsen, transition, and Poselle (the latter with the subgroup of macropores) pores. A relationship was found between the method of formation of a "green" intermediate product and the character of the specific volume distribution of the pores with respect to the dimensions. It was established that the existence of a significant volume of macropores is characteristic only for pierced graphites, whereas their absolute volume depends on the granulometry of the original batch, which is determined by the dimensions of the forming intermediate products. Impregnation or compacting will preserve the character of the porous structure of the original material. It was established that compacting prior to impregnation is preferred for these artificial graphites because it reduces the subsequent preparation time and improves the properties of the material.

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USSR

UDC 621.376.2(088.8)

SKORIK, YE. T., SHERMAREVICH, V. G., and BUTYRINA, L. A.

"A Channel Modulator With Single Sideband Suppression"

USSR Author's Certificate No 282463, filed 2 Jun 69, punlished 18 Dec 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D312 P)

Translation: A channel modulator with single sideband suppression is proposed. The device contains a 3-DB power divider, switching diodes which are connedted to the output arms of the divider, and an adder. The width of the passband is increased by making the 3-DB adder in the form of a directional coupler. V. P.

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AA0043476

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Soviet Inventions Illustrated, Section II Electrical, Derwent,

1/70

241792 OPTICO-ACOUSTIC RECEIVER for infra red radiation has two input windows and a working chamber with an absorption film, enclosed in a protective cap, and reflecting diaphragm which is a part of an optical microphone. The optical transparency of the two windows differs so that the range of the receiver can be extended by turning the chamber through 180 deg.
10.2.68 as 1216093/26-25.YU I BUTYRINA (5.9.69)
Bul 14/18.4.69. Class 42f. Int.Cl.G 01 n.

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21

USSR

UDC: 621.382.2

BUTYRSKIY, V. I., KOVAL'SKIY, R. V.

"A Method of Measuring the Quality of the Semiconductor Material in a Thermoelectric Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 19, 1970, Author's Certificate No 259213, filed 27 May 68, p 194

Abstract: This author's certificate introduces a method of measuring the quality of the semiconductor material in a thermoelectric device in the case of constant thermal flux by measuring a parameter which characterizes the impedance in the open-circuit and short-circuited states. As a distinguishing feature of the patent, measurement precision is improved by taking the emp ratio for the open and shorted states as the parameter which characterizes the impedance.

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1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ELECTROCRACKING OF LIQUID PETROLEUM HYDROCARBONS IN MICRODISCHARGES -U-

AUTHOR-(04)-MOROZOV, L.G., SHULYAR, B.N., BUVALKINA, L.A., SOKOLSKIY, D.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(1), 70-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ETHYLENE, PETROLEUM PRODUCT, OCTANE, ACETYLENE, CHEMICAL REACTION RATE, CATALYTIC CRACKING, ELECTROCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2097 STEP NO--UR/0360/70/020/001/0070/0074

CIRC ACCESSION NO--AP0125681

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125681
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE ELECTROCRACKING OF N OCTANE IN A 25 CM PRIME3 QUARTZ GLASS RECTANGULAR REACTOR ON OPPOSITE SIDES OF WHICH DISK ELECTRODES OCCUPIED A HORIZONTAL POSITION, HYDROCARBON WAS ADMITTED CONTINUOUSLY THROUGH A CENTRAL OPENING IN THE ELECTRODES WHILE AN ELEC. VIBRATOR WAS USED TO INSURE MAX. MICRODISCHARGES ON MOBILE C PARTICLES, 0.25-0.3 MM IN DIAM. MAX. C SUB2 H SUB2 CONTENT (30-40PERCENT) WAS OBSD. WHEN THE WT. OF C PARTICLES WAS 1-1.8 G AND THE APPLIED VOLTAGE WAS 3-5 KV. C SUB2 H SUB4 CONTENT WAS MAX. (37.0PERCENT) WHEN THE PARTICLE SIZE WAS 1.0 MM AND THE APPLIED VOLTAGE WAS 1 KV, BUT WAS STILL HIGH (25-30PERCENT) AT VOLTAGES OF 1-1.5 KV EVEN WHEN THE PARTICLE SIZE WAS 2.0-3.0 MM. SELECTIVITY FOR C SUB2 H SUB2 WAS MAX. (67PERCENT) AT A SPECIFIC ENERGY OF 11.0 KW-HR-M PRIME3 WHEN 1.0 G OF C PARTICLES 3.0 MM IN DIAM. WAS USED AND WAS STILL HIGH (60PERCENT) WHEN 1.4 G C WAS TAKEN IN ORDER TO REDUCE SPECIFIC ENERGY TO THE MIN. (6.5 KW-HR-M PRIME3) FOR PARTICLES OF THIS SIZE, AND WAS 61PERCENT WHEN 1.0 G C PARTICLES, 0.25 MM IN DIAM. WAS USED AND SPECIFIC ENERGY WAS MIN. (2.4 KW-HR-M PRIME3). FACILITY: KAZ. GOS. UNIV. IM. KIROVA, ALMA-ATA, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--PREPARATION OF ACETYLENE AND ETHYLENE BY ELECTROCRACKING IN A DIVIDED CONDENSED DISCHARGE -U-

AUTHOR-(04)-MOROZOV, L.G., SHULYAR, B.N., BUVALKINA, L.A., SOKOLSKIY, D.V.

B

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(1), 85-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACETYLENE, ETHYLENE, DIESEL FUEL, KORESENE, AROMATIC HYDROCARBON, ELECTROCHEMICAL REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2210 STEP NO--UR/0360/70/020/001/0085/0086

CIRC ACCESSION NO--AP0125790

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125790

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY ADDING MOBILE C PARTICLES TO HYDROCARBONS TO DIVIDE THE CONDENSED DISCHARGE DURING ELECTROCRACKING, PRIDUCTIVITY WAS INCREASED 5 TO 6 FOLD AS A RESULT OF THE INCREASED NO. OF DISCHARGE SITES AND RAPID QUENCHING. ELECTROCRACKING PRODUCTIVITY FOR N PARAFFINS, NAPHTHENIC HYDROCARBONS, AND DIESEL FUEL AND KEROSINE FRACTIONS WAS 23-5 L.-HR AND FOR AROMATIC HYDROCARBONS WAS 20-2 L.-HR. ENERGY CONSUMPTION WAS 5.0 KW-HR-M PRIME3 CRACKING GAS AND 7.5 KW-R-M PRIME3 UNSATD. HYDROCARBON GAS PRODUCTS. C SUB2 H SUB4 AND H IN 34-40 AND 25-9PERCENT YIELDS AND C SUB2 H SUB2 WERE THE MAIN PRODUCTS FROM C SUB6-15 N,ALKANES, BUT H CONTENT WAS HIGHER (SMALLER THAN OR EQUAL TO 60PERCENT) IN THE PRODUCTS FROM NAPHTHENIC AND AROMATIC HYDROCARBONS.

FACILITY: KAZ. GOS. UNIV. IM. KIROVA, ALMA-ATA, USSR.

UNCLASSIFIED

USSR

UDC 621.357.7:669.387:669.3-416

GOLOVINA, YE. S., KOCHEROVA, A. V., KOROTKOVA, T. S., BUVHINSKAYA, A. V., BONDAREV, V. V., and MALININA, I. G., State Scientific Studies and Design Institute for Alloys and the Processing of Light Metals

"Electrochemical Process for the Treatment of the Surface a Copper Foil"

Author's Certificate No 338558, filed 16 Jul 70, published 9 Jun 72 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L299P)

Translation: An electrochemical process is patented for the treatment of the surface of copper foil during the preparation of foil-containing dielectrics. This includes the galvanic deposition on the surface of a layer of copper-cuprous oxide from a copper plating electrode. It is improved in that in order to increase the strength of the bond between the foil and the dielectric, the surface is additionally treated cathodically in a solution containing 10-70 g/liter of an alkali metal dichromate. For example, on the surface of a copper foil a microbuffing layer of copper oxide is deposited galvanically from a solution containing in g/liter: $CuSO_4$,100; H_2SO_4,75; NaCl,0.058; and gelatin; 0.050 -1.000. The process is performed using a D_k of 8 -10 amps/dm^2, a temperature of 20 - 23°C for 0.5 -1.0 minutes. The anode is lead. After

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520004-6"

USSR

GOLOVINA, YE. S., et al., Author's Certificate No 338558, filed 16 Jul 70, published 9 Jun 72

rinsing with running the surface of the foil is supplementarily treated cathodically in a 7% solution of potassium dichromate at a D_k of 1 - 2 amps/dm^2

and a temperature of 20° for 30 seconds. Then the foil is washed in running water and dried carefully, either by hot air or in a thermostat of 60 - 70°.

2/2

1/2 038 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--SINGLE ELECTROSTATIC LENS FOR FORMING INTENSE ION BEAMS -U-

AUTHOR-(02)-KOVALSKIY, G.A., BUYANKIN, A.A.

B

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKHNIKA I ELEKTRONIKA (RADIO AND ELECTRONICS), 1970, NO 2, PP 368-370

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS

TOPIC TAGS--OPTIC SYSTEM, ION BEAM, OPTIC LENS, ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1856 STEP NO--UR/0109/70/000/002/0368/0370

CIRC ACCESSION NO--AP0130683

UNCLASSIFIED

2/2 038 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0130683
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ION OPTICAL SYSTEM CONSISTING OF AN IMMERSION LENS OF THE PIERCE TYPE TOGETHER WITH SINGLE ELECTROSTATIC LENS HAVING A CENTRAL ELECTRODE OF SPECIAL CONFIGURATION AND AN ADDITIONAL BLOCKING ELECTRODE IS DESCRIBED. THIS SYSTEM MAKES IT POSSIBLE TO OBTAIN CYLINDRICAL ION BEAMS WITH MICROPERVEANCE GREATER THAN UNITY.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EFFECT OF CONDITIONS FOR FERRIC OXIDE AND HYDROXIDE PREPARATION ON THEIR PROPERTIES AND CATALYTIC ACTIVITY DURING THE LOW TEMPERATURE

AUTHOR-(02)-KRIVORUCHKO, O.P., BUYANOV, R.A.

B

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(2), 524-30

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PROPULSION AND FUELS

TOPIC TAGS--FERRIC OXIDE, HYDROXIDE, CHEMICAL SYNTHESIS, LOW TEMPERATURE EFFECT, POROSITY, HYDROGEN, MOLECULAR STRUCTURE, HYDROGEN LIQUEFACTION PROCESS, CATALYST ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0970 STEP NO--UR/0195/70/011/002/0524/0530

CIRC ACCESSION NO--AP0131555

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0131555

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECT OF FE OXIDE AND HYDROXIDE PREPN. WAS STUDIED ON SP. SURFACE AREA, POROSITY, NATURE OF THERMAL CONVERSIONS, AND CATALYTIC ACTIVITY IN LOW TEMP. ORTHO PARA H CONVERSION. THE STUDY REVEALS THAT CATALYTIC ACTIVITY OF THESE CATALYSTS DEPENDS PRIMARILY ON THEIR COMPN. AND IS INDEPENDENT OF THEIR MORPHOLOGIC STRUCTURE AND THE DEGREE OF CRYSTALLINITY. FACILITY: INST. KATAL., NOVOSIBIRSK, USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ACTIVITY AND PHASE COMPOSITION OF A CHROMIUM CALCIUM NICKEL PHOSPHATE CATALYST -U-

AUTHOR-(05)-IVASHINA, V.S., BUYANOV, R.A., OSTANKOVICH, A.A., OLENKOVA, I.P., KOTELNIKOV, G.R.

COUNTRY OF INFO--USSR

B

SOURCE--KINET. KATAL. 1970, 11(1), 160-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYST ACTIVITY, CATALYTIC DEHYDROGENATION, BUTENE, BUTADIENE, NICKEL, X RAY DIFFRACTION STUDY, THERMAL ANALYSIS, CHROMIUM, PHOSPHATE, CALCIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0528 STEP NO--UR/0195/70/011/001/0160/0165

CIRC ACCESSION NO--AP0119447

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0119447
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE CATALYST WAS STUDIED BY USING X RAY DIFFRACTION, D.T.A., AND DIFFERENTIAL THERMOGRAPHY. THE CATALYST REPRESENTS A 1 PHASE SYSTEM OF NI PRIME2 POSITIVE AND CR PRIME2 POSITIVE SOLID SOLNS. IN A LATTICE OF CA PHOSPHATE. THIS SOLN. FORMS ON HEATING DURING CATALYST PREPN. THE CATALYTIC ACTIVITY OF THE CATALYST IN THE DEHYDROGENATION OF BUTENES TO BUTADIENE DEPENDS ON THE NI CATION CONCN. IN THE LATTICE OF THE CATALYST. CA PHOSPHATE SERVES AS THE CATALY CARRIER AND THE CA-CR COMPN. IS CATALYTICALLY INACTIVE.

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0126007
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO 36 G BROMOMALONIC ESTER IN 80 ML MEOH IN A STREAM OF N (PURIFIED BY PASSING THROUGH PYROGALLOL SOLN.) WAS ADDED PHCH SUB2 SNA (FROM 18.7 G BROMOMALONIC ESTER IN 80 ML WHOLE REFLUXED 6 HR TO YIELD 61PERCENT PHCH SUB2 SCH(CO SUB2 ET)SUB2 (I), B SUB1.5 148-53DEGREES, M 60-2DEGREES. SHOWN ON MICROFICHE.
FACILITY: MOSK. KHIM. TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

B

YEREMENKO, V. N., ZUYANOV, YU. I., and PANCHENKO, N. M., Institute for Problems of Material Science, Academy of Sciences Ukrainian SSR

"Structure of Polythermal and Isothermal Sections of the System Titanium--Copper--Silver; Report 2"

Kiev, Poroshkovaya Metallurgiya, No 5, May 70, pp 73-78

Abstract: Thermal and x-ray phase analyses were conducted of the structure of three polythermal sections of the phase diagram of the titanium -- copper-- silver system: at 5 at% Ag, at 60 at% Ag, and the radial section TiAg (Eta) -- Cu. Based on the structure of the polythermal sections and liquidus surface, isothermal sections were plotted of the titanium -- copper -- silver system at 1300, 1005, 960, and 900°C. The scheme of processes occurring in the titanium -- copper -- silver ternary system and its binary systems is given. Data on the structure and some phase properties of the titanium -- copper and titanium -- silver systems are presented in a table. The phase diagram of the copper -- silver system is related to the simple eutectic type with limited solubility of the components in the solid state. The scheme of monovariant and nonvariant equilibria for the titanium -- copper -- silver system is presented. The temperatures of nonvariant conversions were defined more precisely, and it was shown that the phase Ti_2Cu_3 (Theta) forms

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520004-6"

USSR

YEREMENKO, V. N., et al., Poroshkovaya Metallurgiya, No 5, May 70, pp 73-78

at 890°C according to the peritectic reaction L + Ti_3Cu_4 (Epsilon) $\rightleftarrows$ Ti_2Cu_3 (Theta) and decomposes at about 800° C according to the eutectoid reaction Ti_2Cu_3 (Theta) $\rightleftarrows$ Ti_3Cu_4 (Epsilon) + $TiCu_4$ (Xi).

2/2

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SYNTHESIS OF ARSENIC CONTAINING CELLULOSE ESTERS -U-

AUTHOR-(03)-PREDVODITELV, D.A., BUYANOVA, V.K., KONKIN, A.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(1), 74-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORGANIC ARSENIC COMPOUND, CELLULOSE RESIN, NATURAL FIBER, FABRIC, BENZENE, ESTERIFICATION, CHEMICAL SYNTHESIS, FIRE RESISTANT MATERIAL, BACTERICIDE ADDITIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1192 STEP NO--UR/0460/70/012/001/0074/0077

CIRC ACCESSION NO--AP0116657

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116657

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COTTON DOWN ACTIVATED WITH ACOH OR DRESSED VISCOSE STAPLE FABRIC (I) CONTG. C SUB6 H SUB6 INCLUSIONS WAS REFLUXED WITH 10PERCENT PHASO IN SOLN. IN C SUB6 H SUB6 (IN THE PRESENCE OF H SUB2 SO SUB4) AT 80DEGREES FOR 4 HR TO GIVE MODIFIED CELLULOSE (II) CONTG. 8.6PERCENT AS. II ESTERS OF PENTAVALENT AS WERE OBTAINED BY TRANSESTERIFICATION OF I CONTG. C SUB6 H SUB6 INCLUSIONS IN ETOH-C SUB6 H SUB6. THE REACTION INVOLVED ESTERIFICATION OF RAS (O) (OH) SUB2 WITH ETOH FOLLOWED BY TRANSECTERIFICATION TO GIVE CELL OAS(O)(OET) EQUALS R (CELL EQUALS CELLULOSE MOIETY). I WAS ALSO REFLUXED WITH ME SUB2 AS (O)OH, P,HOC SUB6 H SUB4 AS (O)(OH) SUB2, OR PHAS(O)-(OH) SUB2 AT 60DEGREES FOR 4-7 HR TO GIVE ESTERS CONTG. 1.2-5.3PERCENT AS. ARSENIC-CONTG. II ESTERS WERE FIRE RESISTANT AND EXHIBITED BACTERICIDAL AND PHYSIOL. ACTIVITY. FACILITY: VSES. NAUCH.-ISSLED. INST. ISKUSSTV. VOLOKNA, MYTISHCHI, USSR.

UNCLASSIFIED

USSR UDC: 519.2:54

BUYANOVSKIY, L. A., L'VOV, S. V., STAROVOYTOV, G. P., SHEVTSOV, A. S.

"On the Problem of Constructing Nonlinear Regression Models"

Tr. Spets. konstrukt byuro po avtomatike v neftepererabotke i neftekhimii (Works of the Special Design Office on Automation in Petroleum Refining and Petrochemistry), 1971, vyp. 3, pp 150-180 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V269)

Translation: In constructing statistical models of processes in chemical technology, it quite frequently turns out that a linear regression model is inadequate. In this case, a polynomial regression model is used. It is convenient for polynomial regression to use rotatable plans for which the variance of the estimate for the response function depends only on the distance of a point of the phase space from the coordinate origin. The plan matrix $X=(x_{ij})$ is the set of coordinates of the points of the factor space (columns of the matrix) at which observations should be made. The necessary and sufficient conditions for the matrix X under which a plan is rotatable are discussed in detail. The following definitions of vector power and matrix power are used. The p-th power $x^{(p)}$

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USSR

BUYANOVSKIY, L. A. et al., Tr. Spets. konstrukt. byuro po avtomatike v neftepererabotke i neftekhimii, 1971, vyp. 3, pp 150-180

of the vector $x=(x_1, x_2, \ldots, x_k)$ is defined as the vector which contains C^p_{k+p-1} components equal to all possible monomials in degree p of the variables $x_1, x_2, \ldots, x_k$ with coefficients chosen in a special way. The coefficients are chosen in such a way that the scalar product $x'^{(p)}x^{(p)}$ coincides with the p-th power of the scalar product $x'x$. The vector $x^{(p)}$ is uniquely defined with respect to the vector x accurate to the order of magnitude of the components. Let H be a matrix which transforms vector x to the vector $z=Hx$. The p-th power $H^{(p)}$ of matrix H is defined as the matrix which transforms the vector $x^{(p)}$ to the vector $z^{(p)}$. Examples are given and some properties of the operators introduced are analyzed. It is known that the plan given by matrix X is rotatable of order d if the equality $X'X=R'^{(d)}X'XR^d$ holds for any orthogonal matrix R. Formulas are presented for sample moments in rotatable planning of an experiment. Some properties of spherical distributions are discussed as well as the properties of their corresponding eigenfunctions and the generating function of the moments in rotatable planning. A. Zaslavskiy.

2/2

USSR UDC: 519.2:54

BUYANOVSKIY, L. A., L'VOV, S. V., STAROVOYTOV, G. P., SHEVTSOV, A. S.

"Optimization of Processes Represented by Polynomial Models"

Tr. Spets. konstrukt. byuro po avtomatike v neftepererabotke i neftekhimii (Works of the Special Design Office on Automation in Petroleum Refining and Petrochemistry), 1971, vyp. 3, pp 160-169 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V270)

Translation: Some models of search for the extremum points of technological processes are considered. The iteration step method of search for the optimum is as follows. The first step is a total or fractional factor experiment. From the resultant data (linear regression) the gradient of the response function is determined, a shift is made in the estimated direction, a model of linear regression is again constructed in the neighborhood of the new point and so on. Motion continues until the localized behavior of the response function can be adequately represented by means of linear regression. An extremum point is found in the region where linear regression is inadequate. A polynomial regres-

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BUYANOVSKIY, L. A. et al., Tr. Spets. konstrukt. byuro po avtomatike v neftepererabotke i neftekhimii, 1971, vyp. 3, pp 160-169

sion is constructed with a predetermined order to refine the response function in this region. The classical method of search for the extremum consists in varying only one parameter at each step while the others are held constant. The random search method involves conducting successive experiments at points lying in a direction from the given point which is chosen at random. The shift is made toward the new point or in the opposite direction depending on the estimates of the response function at the new and given points. A detailed comparison is made of these three methods of search for the extremum. A number of advantages of the step method are set forth. Consideration is given to the problem of selecting the number of observations which minimizes the error in determination of the gradient. A study is also made of the mathematical expectation per observation for the increment in the response. A. Zaslavskiy.

USSR UDC 512.25/.26+519.3:330.115

GRISHKO, N. V., VAKHUTINSKIY, I. Ya., BUYANOVSKIY, L. A.

"The Kundt-Takker Theorem with Supplementary Limitations and the Decomposition Principle"

Tr. Spets. Konstrukt. Byuro po Avtomatike v Neftepererabotke i Neftekhimii [Works of the Special Design Bureau for Automation in Oil Processing and Petrochemistry], No 3, 1971, pp 138-141, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V686 by D. Epshteyn).

Translation: The problem of determination of max f(x) is studied under conditions $\phi_i(x) \leq 0$ with the additional limitation $x \in G$, where G is a compact subset of an n-dimensional linear space. Under certain conditions, the problem is reduced to minimization of the nondifferentiable function $F(\lambda)=\max_{x \in G}\left[l(x)-\sum_i \lambda_i \varphi_i(x)\right]$ under the condition $\lambda_i \geq 0$. The minimum is sought using a method assuming calculation of the pseudogradient of function $F(\lambda)$. In general, the method suggested is a variety of the dual analog of the Danzig-Wulf expansion method.

1/1

AA0039827 Buyarov, A.A. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

3/10

237914 METALLISED SINTER PRODUCTION uses heated air for sintering and heated reducing gas, at controlled waste gas pressure. To upgrade the end product and prevent secondary oxidation, the reducing gas temperature (heated to 1200°C) is reduced to 100°C at a rate of 30-50 degrees/min. The gas is heated in regenerative checkers themselves heated by the sintering air re-circulating. After the charge has been placed on the throat grid, it is fired and sintered, keeping gas pressure above 1.0 atm. abs. The fine, low-sulphur

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end product occurs as a cake whose upper part is at 1000-1300°C. The reducing gas is passed through the bed, also under controlled pressure. Te mination of this reducing blow operation is signified by the cessation of ferrous oxide reduction as the sinter cake cools back to 300-100°C, and thus prevents secondary oxidation. 1.4.67. as 1145585/22-2. MIKHALEVICH, A.G. et al. I.P. Bardin Ferrous Metallurgy Res. Inst. (11.7.69.) Bul.9/20.2.69. Class 18a. Int.Cl. C21b.

AUTHORS: Mikhalevich, A. G.; Voskoboynikov, V. G.; Buvarov, A. A. Bunakov, O. D.; Zhurakovskiy, B. L.; Migutskiy, L. R.; Antonov, V. M.; Sholeninov, V. M.; and Tkachev, V. V.

Tsentral'nyy Nauchno - Issledovatel'skiy Institut Chernoy Metallurgii imeni I. P. Bardina

19741188

AP0000088 BUYDAN UR 0289

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR, Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5, 1 pp 141-144

J. M. Buidan, V. A. Synitsyn

ABOUT MEAN KINETIC ENERGY OF SOME QUANTUM THERMODYNAMIC SYSTEMS

The systems of the quantum particles the interaction energy of which is the uniform function of coordinates are discussed. The theorem on the mean kinetic energy is proved.

This theorem had been proved earlier by L. D. Landau and E. M. Lifshiz for the case of the classical particles systems.

19500099

USSR

UDC 536.248.2.001.5

LEBEDEV, P. D., BUYEVICH, A. V., GRIGOR'YEV, V. G., ROSINSKIY, A.Z., UVAROV, V. V., and SHKLOVER, L. L.

"On the Question of Condensing Clean Vapor in Tubular Streams of Variable Cross Section"

Dokl. nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Sekts. Promteploenergetiki. Podsekts. Sushil'n i teploobmen. ustroistv (Reports of the Scientific-Technical Conference on Summaries of Scientific Research Work for 1968-1969. Industrial Thermal Engineering Section, Subsection on Desiccating and Heat Transfer Devices), Moscow Power Engineering Institute, 1970, pp 113-118 (from RZh-Teploenergetika, No 5, May 70, Abstract No 5G90)

Translation: For calculating the effect of variable cross sections of tubular stream in the formula for mean KTO (coefficient of thermal omission), for the case of condensing clean vapor in counterflowing horizontal tubes as proposed by L. D. Berman, a factor is introduced which is a function of vapor condensation level. Experiments have been made to determine the values of constants in the modified formula. Three figures, three references.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STERIC FACTORS IN THE REACTION OF TETRANITROMETHANE WITH ALKENES
-U-
AUTHOR-(03)-BUYEVICH, V.A., ALTUKHOV, K.V., PEREKALIN, V.V.

COUNTRY OF INFO--USSR

B

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 658-61

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NITROMETHANE, ALKENE, BENZENE DERIVATIVE, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2016 STEP NO--UR/0366/70/006/004/0658/0661

CIRC ACCESSION NO--AP0125604
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125604

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COURSE OF THE TITLE REACTION DEPENDS ON THE SUBSTITUTION OF THE ALKENE DOUBLE BONDS. RCH:CPH SUB2 (I) (R EQUALS PH) REACTED WITH C(NO SUB2) SUB4 TO GIVE PHC(NO SUB2):CPH SUB2. I (R EQUALS H) GAVE HC(NO SUB2):CPH SUB2 AND H SUB2 C(NO SUB2)C(OH)PH SUB2. RCME:CHPH (R EQUALS H OR ME) GAVE RCME(NO SUB2)BZ AND HCN:C(NO SUB2) SUB2 YIELDS N SUB2 O SUB3. PHCH:CMEPH (R IS ME OR PH) GAVE PHCH(NO SUB2)CPH:CH SUB2. RCH:CR PRIME1 R PRIME2 GAVE 2,(CR PRIME1 R PRIME2 CH(NO SUB2)R), 4R,5,R PRIME1, R PRIME2 DISUBSTITUTE,3,3,DINITROISOXAZOIDINES (R, R PRIME1, R PRIME2 GIVEN): H, ME, PH; ISO-PR, ME, ME; ME, H, ET. FACILITY: LENINGRAD. PADAGOG. INST. IM. GERTSENA, LENINGRAD, USSR.

UNCLASSIFIED

USSR UDC 532.529

BUYEVICH, Yu. A., Moscow

"The Interaction of a Group of Particles with a Pulsating Fluid at Low Reynolds Numbers"

Mekhanika Zhidkosti i Gaza, No 5, 1971, pp 104-113.

Abstract: Equations are produced for the effective viscosity of a fluid filtering through a polydispersed cloud of particles and for the force of interaction of the fluid with the particles in an unstable flow. These equations are solved in limiting cases of low and high fluid pulsation frequencies. As the fluid flows around a concentrated system of particles, the particles influence the flow structure in the area of each particle, leading, in particular, to significant changes in the relationship between shear velocities and stresses arising in the system, and between the relative velocity and force of interaction of liquid with particles. The problem of determining these relationships, of significant practical interest, has stimulated intensive study of this "restricted" fluid flow. This work studies this problem more strictly than in other works, based on the approximation of "point sources" suggested earlier.

1/1

1/2 052 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INTERACTION BETWEEN A STOKES PARTICLE AND A RANDOM TURBULENT FIELD OF AN INCOMPRESSIBLE FLUID -U-
AUTHOR--BUYEVICH, YU.A.

B

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA ZHIDKOSTI I GAZA, JAN.-FEB. 1970, P. 83-90
DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--INCOMPRESSIBLE FLUID, TURBULENT FLOW, PARTICLE MOTION, VORTEX FLOW, STOCHASTIC PROCESS, FOURIER ANALYSIS, ENERGY SCATTERING, HIGH FREQUENCY, VORTEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1792 STEP NO--UR/0421/70/000/000/0083/0090

CIRC ACCESSION NO--AP0112778
UNCLASSIFIED

2/2 052 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0112778
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION FO THE MOTION OF PARTICLES SUSPENDED IN A TURBULENT FLUID AND OF THEIR EFFECT OF THE DISSIPATION OF TURBULENT ENERGY, FOR THE CASE WHERE THE DIMENSIONS OF THE VORTICES IN THE FLOW ARE COMPARABLE OR SMALLER THAN THE PARTICLE DIMENSIONS. IT IS SUGGESTED THAT INTERACTION WITH SUCH VORTICES IS RESPONSIBLE FOR THE EXTREMELY STRONG EFFECT PRODUCED BY THE PARTICLES ON THE TURBULENCE, EVEN IN THE CASE OF VERY SMALL PARTICLE CONCENTRATIONS IN THE FLOW. BY REPRESENTING THE UNPERTURBED VELOCITY OF THE FLUID IN THE FORM OF THE STOCHASTIC FOURIER-STIELTJES INTEGRAL, AND ANALYZING THE FLOW PAST A PARTICLE IN AN INERTIALESS APPROXIMATION, IT IS SHOWN THAT BECAUSE OF ITS LINEARITY, THE PROBLEM REDUCES TO THE STUDY OF THE INTERACTION BETWEEN A PARTICLE AND A SINGLE WAVE IN THE FOURIER-STIELTJES INTEGRAL. AN APPROXIMATE SOLUTION TO THE LATTER PROBLEM IS OBTAINED. IT IS SHOWN THAT THE INTENSITY OF THE INTERACTION OF A PARTICLE WITH A SINGLE WAVE (AND HENCE THE ENERGY DISSIPATION RESULTING FROM THIS INTERACTION) INCREASES RAPIDLY WITH INCREASING FREQUENCY AND WAVE NUMBER, I.E., THE SUSPENDED PARTICLES HAVE THE STRONGEST EFFECT ON SMALL AND HIGH FREQUENCY VORTICES.

UNCLASSIFIED

1/2 040 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PSEUDOTURBULENT DIFFUSION OF PARTICLES IN HOMOGENEOUS SUSPENSIONS -U-

AUTHOR-(02)-BUYEVICH, YU.A., MARKOV, V.G.

B

COUNTRY OF INFO--USSR

SOURCE--NOVOSIBIRSK AKADEMIYA NAUK SSSR, SIBIRSKOYE OTDELENIYE, ZHURNAL PRIKLADNOY MEKHANIKI I TEKNICHESKOY FIZIKI, NO 1, JAN.-FEB. 70, PP 67-72

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--DIFFUSION COEFFICIENT, CHEMICAL SUSPENSION, TURBULENT FLOW, PARTICLE DISTRIBUTION, ANISOTROPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0954 STEP NO--UR/0207/70/000/001/0067/0072

CIRC ACCESSION NO--AP0130014

UNCLASSIFIED

2/2 040 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0130014

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTIVE DIFFUSION COEFFICIENTS OF SUSPENDED PARTICLES, CONDITIONED BY THEIR PSEUDOTURBULENT PULSATIONS, ARE CONSIDERED. THE DERIVATIVES OF THE DYNAMIC VARIABLES, WHICH DETERMINE THE AVERAGE MOTION OF A LOCALLY HOMOGENEOUS SUSPENSION, ARE NEGLECTED. THE PSEUDOTURBULENT DIFFUSION OF PARTICLES IS SHOWN TO BE AXIALLY SYMMETRIC, AND THE ROLE OF THE ISOLATED DIRECTION IS PLAYED BY THE DIRECTION OF INTERFACE SLIPPING U SUB0. EQUATIONS ARE DERIVED FOR THE NONDIMENSIONAL EFFECTIVE COEFFICIENTS D SUB1 AND D SUB2 OF PSEUDOTURBULENT PARTICLE DIFFUSION IN THE LONGITUDINAL AND LATERAL DIRECTIONS. THEY ARE VALID, UNDER CERTAIN ASSUMPTIONS, AT REYNOLDS NUMBER R EQUALS 2 AU OVER V SUB1 SMALLER THAN 1. THIS CORRESPONDS TO LOCALLY HOMOGENEOUS SUSPENSION. THE RESULTS OF CALCULATIONS, SUCH AS THE RATIO OF LATERAL AND LONGITUDINAL PSEUDOTURBULENT DIFFUSION COEFFICIENTS AT ALPHA EQUALS 0.60 AND THE DEPENDENCE OF THE LONGITUDINAL DIFFUSION COEFFICIENT D SUB1 ON DENSITY ARE PRESENTED IN GRAPHS. THE PSEUDOTURBULENT DIFFUSION OF SOLID PARTICLES IS SHOWN TO BE A SHARPLY ANISOTROPIC, AND THE LONGITUDINAL DIFFUSION IS 10 PRIME3 TO 10 PRIME4 TIMES MORE INTENSE THAN THE LATERAL DIFFUSION. THE CONCLUSION THAT LONGITUDINAL DIFFUSION IS PREDOMINANT IS CONSISTENT WITH THE OBSERVATIONS OF PARTICLE PULSATIONS IN A RELATIVELY RAREFIED SYSTEM. THE PHYSICAL CAUSE OF THIS PREDOMINANCE IS THOUGHT TO CONSIST NOT ONLY IN THE ANISOPTROPY OF PSEUDOTURBULENT PULSATION SPEED, BUT ALSO IN THE ANISOTROPY OF CORRESPONDING MIXING LENGTHS.

UNCLASSIFIED

1/2 040 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--A MODEL OF THE DRAG REDUCTION ASSOCIATED WITH THE INJECTION OF PARTICLES INTO A TURBULENT FLOW OF A VISCOUS FLUID -U-
AUTHOR--BUYEVICH, YU.A.

B

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA ZHIDKOSTI I GAZA, MAR.-APR. 1970, P. 114-120
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TURBULENT FLOW, HYDRAULIC RESISTANCE, FLUID FLOW, VISCOUS FLOW

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1332 STEP NO--UR/0421/70/000/000/0114/0120

CIRC ACCESSION NO--AP0124982
UNCLASSIFIED

2/2 040 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0124982

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT OF A SIMPLE QUALITATIVE MODEL FOR THE REDUCTION OF THE HYDRAULIC RESISTANCE OF TURBULENT FLUID FLOWS BY INJECTION OF SMALL AMOUNTS OF SUSPENDED IMPURITIES. THE MODEL IS BASED ON THE CONCEPT THAT THE INJECTED IMPURITY PROMOTES PRIMARILY SELECTIVE DAMPING OF TURBULENT VORTICES WHOSE CHARACTERISTIC SCALE IS SMALLER THAN THE PARTICLE DIMENSIONS.

UNCLASSIFIED

USSR UDC 621.375.82

OBUKHOV, V. I., BABITSKAYA, E. M., GOYDENKO, P. P., and BUYKO, L. D.

"Lasers in Semiconductor Monitoring Systems"

Kvantovyye generatory v sistemakh kontrolya poluprovodnikov (cf. English above), Minsk, "Nauka i Tekhn." (Science and Technology), 1972, 120 pp, ill., 55 kopecks (from RZh-Fizika, No 8, Aug 72, Abstract No 8D1157K)

Translation: The book describes methods and principles for the formation of automatic systems through the use of lasers to monitor such semiconductor parameters as thickness of epitaxial film and resistivity, as well as parameters characterizing surface state. The authors take up the peculiarities of the interaction of electromagnetic laser radiation with the semiconductor (reflection, absorption, refraction) and the methods and principles on which the monitoring is based (interference, holography etc.). Bibliography with 87 titles.

1/1

USSR UDC: 548.25

[redacted], KALOSHKIN, E. P., KOLESHKO, V. M., and CHIGIR', G. G.

"Device for Measuring the Alloying Profile of Epitaxial Films"

Moscow, Pribory i tekhnika eksperimenta, No 4, July-August, 1972, pp 220-222

Abstract: The function of the device described by this paper is to determine the concentration of impurities in epitaxial films through the use of the barrier capacitance method, which is based on the dependence of the p-n junction capacitance on the impurity concentration. The basic schematic of the device is given. Its principal component is a bridge with transformer arms and a set of standard capacitances. Capabilities of the device were checked by using epitaxial films of the n^+-n and n^+-n-p^+ types, grown on Si of the substrate KES-0.01 by the reduction of $SiCl_4$ with hydrogen. A curve is plotted for the distribution of the impurity concentration in the n^+-n film as a function of the film's thickness, and it is found that points found experimentally through the use of this device fall almost directly on this theoretically plotted curve. Similar graphical results were obtained for the n^+-n-p^+ film.

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USSR

UDC: 51

BUYKO, V. P.

"Concerning Sequential Solutions in Discrete Production Systems With Preferences"

Riga, Adaptiv. sistemy--sbornik (Adaptive Systems--collection of works), vyp. 2, "Zinatne", 1972, pp 49-65 (from RZh--Kibernetika, No 5, May 73, abstract No 5V718 by the author)

Translation: The paper deals with the multistep problem of controlling discrete production under conditions where control system decisions enter the production system at times $T_1, T_2, \ldots, T_n$. In time intervals ΔT_i the production system forms its own behavior related to the entering control decisions and the inherent preferences of the system.

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USSR

UDC 539.186

BUYMISTROV, V. M., TRAKHTENBERG, L. I., Moscow Physical-Technical Institute

"Excitation of an Atom During Simultaneous Collision With Another Atom and With a Photon"

Tomsk, Izvestiya VUZov: Fizika, No 9(124), Sep 72, pp 66-71

Abstract: This paper deals with a mixed mechanism of excitation of an atom -- excitation during simultaneous collision with another atom and a photon. It is assumed that as a result of the collision, atom A makes a transition from state "2'" to state "1'", while atom B goes from 1 to 2 (see figure). Atom B is excited as a result of the energy of electron transition 2'-1' of atom A combined with the energy of a photon and the change in kinetic energy of relative motion of the atom (denoted by $\Delta E_{\text{кин}}^{\text{отн}}$ in the figure). The cross section of this process is calculated. It is shown that for experimentally attainable values of electric field strength and other real values of parameters this cross section is comparable with the cross section of excitation of the atom by an electron collision.

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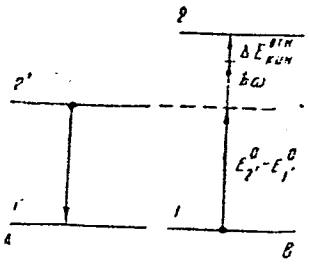
USSR

BUYMISTROV, V. M., TRAKHTENBERG, L. I., Izvestiya VUZov: Fizika, No 9(124), Sep 72, pp 66-71



Energy diagram of excitation

2/2

Acc. Nr.: AP0046787

Ref. Code: UR 0113

USSR

UDC 629.113.012.853"401.7"

BUYNOV, A. F., Gor'kiy Auto Plant

"Internal Metal Flaws and Their Effect on the Life of Automobile Spring Plates"

Moscow, Avtomobil'naya Promyshlennost' (Motor Vehicle Industry), No 1, 1970, pp 31-32

Translation: The life of the springs drops with higher coarseness of banding in the microstructure and layering of the metal caused by dendritic segregation formed in recrystallization of steel. In production of spring steel, measures are required to eliminate or limit dendritic segregation. (4 tables, 3 illustrations, 3 biblio. ref.)

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19790091

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B

UDC 629.113.012.853"401.7"

USSR

BUYNOV, A. F., Gor'kov Automotive Factory

"Internal Defects of Metal and Their Influence on the Durability of Automobile Leaf Springs"

Moscow, Avtomobil'naya Promyshlennost', No 1, January 1970, pp 31-32

Abstract: The author studied the effects of striations, laminations and flaking in the breakdown of leaf springs. He found that breaks characterized by flaking and large-scale lamination were associated with a microstructure involving clear striations and the presence of nonmetallic inclusions in the areas of lamination. Such springs had low average durability, with values widely scattered around the average, weakly expressed indicators of breakdown from contact fatigue and a clear relationship between durability and the degree of lamination and striation.

He associates these defects with dendritic liquation, and shows that this can be eliminated by homogenization at a temperature of 1,180-1,200° for periods of 15-20 min. Steels subjected to this treatment were found to have significantly better characteristics for transverse impact shock than untreated steels; the longitudinal impact shock characteristics were approximately equal. Samples of such treated steels, when broken, were found to be

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BUYNOV, A. F., Avtomobil'naya Promyshlennost', No 1, January 1970, pp 31-32

without striation; the breaks were smooth and even, rather than being characterized by rough cleavages.

The author tested both specially made GAZ-51 springs from 50KhG steel and standard, production run springs.

USSR

UDC 535.417.06

BUYNOV, G. N. and MUSTAFIN, K. S.

"A Study of the Possibility of Using Single Axis Holograms for Image Multiplication"

Leningrad, Optika i Spektroskopiya, Vol 34, No 5, May 73, pp 936 - 940

Abstract: Numerous works have been published on the possibility of making multiple copies from two-axis holograms. It is also possible to make such copies from single-axis holograms, and there are advantages to this process. Particularly valuable is the lower requirement for resolving power of the film, leading ultimately to better image quality. The primary difficulty is the low signal-to-noise ratio, but this can be overcome by special measures.

In this experiment a 5 x 5 matrix of plane-convex lenses placed in the beam of a gas laser served to produce the hologram. The images were restored with monochromatic incoherent light from a mercury arc lamp. Resolving power was measured with a method described by Buynov, Lukin, and Mustafin in Volume 28 of this journal, 1970, and by reproducing images of test pattern No. 2. A resolution of 250 lines per millimeter was achieved. The limitation was primarily due to the resolving power of the hologram, since that of the optical equipment was significantly better.

USSR

BUYNOV, G. N. et al, Leningrad, Optika i Spektroskopiya, Vol 34, No 5, May 73, pp 936 - 940

The signal-to-noise ratio can be improved by reducing the size of the light source to the minimum value possible and by placing a grid immediately in front of the film on which the multiple images are to be recorded, further reducing the amount of light allowed to strike the film between these images. A system of screens placed in front of the hologram during the restoration can almost completely eliminate the background light. If the total area of the screens is less than 10% of the total area of the hologram, the signal-to-noise ratio of the restored image can be multiplied several times without noticeable loss of quality.

A second problem is the lack of uniformity introduced by aberations in the lens and hologram. This can be overcome by scanning in reproduction. The illuminated object and the recording film are moved in opposite directions with respect to the small apertures permitting the passage of light. A simple mechanical arrangement is enough to ensure that the direction and rate of movement are maintained in the proper relationships. This enables the entire image to be produced with the maximum optical quality, limited only by spherical aberations and the sizes of the apertures. A similar process, in which the screens were moved, is described by Von Einighammer, in Optik, Vol 13, p 390, 1970.
2/2

USSR

UDC:669.71'721:620.193;539.319

KOMAROV, M. F., BUYNOV, N. N., KAGANOVICH, L. I., Institute of Metal Physics, Academy of Sciences USSR

"Microstructure and Corrosion Properties of Aluminum-Magnesium Alloy Following Extended Natural Aging"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 2, 1973, pp 358-364

Abstract: Electron microscope studies of aluminum-magnesium alloys with 11% Mg and corrosion tests under stress are performed. The electron microscope studies indicate that extended natural aging forms hexagonal close-packed zones with ordered structure. The corrosion testing and electron-microscope data indicate that the reason for the sharp decrease in corrosion-cracking resistance of aluminum-magnesium alloys following extended natural and low-temperature aging is separation of the ß-phase along the grain boundaries as a continuous film.

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USSR

UDC 669-157:669.15-194.56

UVAROV, A. I., ROMANOVA, R. R., UKSUSNIKOV, A. N., and BUYNOV, N. N., Institute of Physics of Metals, Ukrainian National Center of the Academy of Sciences USSR

"Influence of Low-Temperature Aging Before High-Temperature Aging on the Mechanical Properties and the Structure of 40Kh4G18F Steel"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 4, Oct 73, pp 735-741

Abstract: The mechanical properties and the structure of 40Kh4G18F steel were experimentally investigated after different methods of heat treatment. The results are discussed by reference to diagrams showing the dependences of ultimate strength, yield limit, relative elongation, and relative narrowing at 650° and 700° at different aging conditions, and on the basis of isochronal hardness curves, hardness curves by isothermal aging at 700°, and electron microphotograph after aging. The processing according to the scheme hardening - low-temperature aging - high-temperature aging was found to give rise to a substantial increase in strength of 40Kh4G18F steel and, in certain cases, also in plasticity, if compared with only one high-temperature aging; the dispersion of separations was also increasing. A preliminary low-temperature aging before high-temperature aging influences effectively the increase of mechanical properties of steel, in which in aging the primary nuclei of the
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USSR

UVAROV, A. I., et al., Fizika Metallov i Metallovedeniye, Vol 36, No 4, Oct 73, pp 735-741

hardening phase possess an equiaxial form and are capable of growing in aging. The results make possible a selection of more optimum processing methods of 40Kh4G18F steel. Six figures, five bibliographic references.

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USSR

UDC 669.295:537.533.35

KOMAROVA, M. F., BUYNOV, N. N., IOFFE, A. YA., KAGANOVICH, L. I., and GAVRILOVA, A. B., Institute of Metal Physics, UNTs / expansion unknown/ Academy of Sciences USSR

"Effect of Small Additions of Beryllium, Titanium, and Zirconium on the Structure and Properties of AL9 Alloy"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 1, 1973, pp 140-148

Abstract: Metallographic and electron microscopic studies were conducted and the mechanical properties of AL9 alloy, alloyed with Be, Ti, andZr, determined. The hypoeutectic alloy has the following composition (in %): 7 Si, 0.3 Mg, 0.015 Cu, 0.1 Zn, and 0.25 Fe with varying small amounts of the alloying elements. Results of analysis showed that the small amounts of Be, Ti, and Zr, taken in limits from 0.001 to 0.1% (separately or together) do not alter the nature of the eutectic in the alloy, its quantity and silicon particle size in the eutectic or the size of the solid solution nucleus between the eutectic colonies. Investigation in the work of alloying showed changes in the kinetics of decomposition of the supersaturated solid solution, acceleration of the formation of the metastable beta'-phase and silicon particles, and refining of the particles and an increase in their number. These factors promoted increased alloy strength where joint alloying increased this strength by 30-40%. Six figures, 13 bibliographic references. 1/1

BUYNOV, N. N.

UDC 620.17:539.25

EFFECT OF VARIOUS COMBINATIONS OF AGING AND DEFORMATION ON THE STRUCTURE AND MECHANICAL PROPERTIES OF EI437B ALLOY

N. N. Buynov, A. I. Usanov, A. N. Ukhanikov, R. R. Romanova, R. A. Karakhanyan, and M. G. Gaydukov, Institute of the Physics of Metals, Ural Scientific Center of the USSR Academy of Sciences

18 June 1971; final version, 14 February 1972 pages 1251-1258

The effect of deformation performed after low-temperature aging before high-temperature aging on the structure and mechanical properties of alloy EI437B was studied. Experimental data confirming the possibility of decreasing or preventing recovery in this alloy by means of moderate deformation between low-temperature and high-temperature aging were obtained. It was established that the use of treatment according to the following scheme: hardening--low-temperature aging--deformation (straining)--high-temperature aging leads to an essential increase of the mechanical properties in comparison with aging without deformation.

In reference [1] the conclusion made earlier [2] that preliminary low-temperature aging before high-temperature aging must be effective in increasing the mechanical properties of alloys of the nimonic type was experimentally confirmed. In these alloys the initial nuclei of the precipitation phase have an equiaxial form and are capable of a noticeable growth at low-temperature aging. Also, prolonged aging at low temperatures increases the stability of the nuclei for the Guinier-Preston zone) and their larger quantity is preserved in subsequent high-temperature aging. Such double aging provides a large dispersivity of the precipitations and high strength properties in comparison with the dispersivity and strength of the alloy aged at an increased temperature. However, the minimum on isothermic curves of hardness in high-temperature aging testifies that a

considerable part of the G. P. zones [3] or the metastable nuclei [1] during recovery are dissolved or change their composition even in the case of prolonged preliminary low-temperature aging [4, 5]. According to data in reference [6], in EI437B alloy in recovery 3/5 of the precipitation phase is dissolved.

We may assume that if we prevent recovery in the transition from low-temperature aging to high-temperature aging, then we will obtain alloys with more dispersed precipitations and greater strength. According to reference [7--9], the effect of plastic deformation on the G. P. zones and the metastable coherent or partially coherent precipitations is manifested in the fact that part of the nuclei may be dissolved, and part stabilized. For example, the G. P. zones may shift to metastable precipitation. At moderate deformations, the effect of the solution of the nuclei may be insignificant in comparison with the effect of stabilization. Having increased the stability of the nuclei, we may prevent or decrease recovery if the alloys are strained after low-temperature aging before high-temperature aging. Aside from this, recovery may be decreased because of the appearance of new nuclei due to the ones dissolved during deformation.

In this work we set ourselves the problem of studying the effect of deformation between low-temperature and high-temperature aging on the structure and mechanical properties of alloy EI437B.

The structure of the alloy was investigated by the fine-foil electron-microscopic method. Measurements of hardness according to Vickers were performed, also measurements of the ultimate strength and yield points, elongation and compression. Heat treatment of the alloy consisted of annealing at 1050°C for eight hours and cooling in the air. In the interval of aging of 670--850° the specimens were cooled at a rate of 100° per minute. The aging was accomplished at 700 and 850°. After different variations of heat treatment the specimens were strained by rolling, basically by 20%.

Figure 1. Hardness of alloy EI437B in isothermic aging at 850°: (1) after preliminary aging at 700° for ten hours and straining by 20%; (2) after preliminary straining by 20% and aging at 700° for ten hours; (3) after aging at 700° for ten hours. (a) time, min.

USSR

UDC 669.017:669.018:559.570

BUYNOV, N.N., KARAKHANYAN, R.A., ROMANOVA, R.R., BULYCHEV, D.K., and RODIONOV, K.P., Institute of Metal Physics, Academy of Sciences USSR

"Distribution of Strain in Metals and Alloys After Hydroextrusion"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 2, Feb 71, pp 304-310

Abstract: By electron microscopy and measurements of hardness it was shown that strain distribution in different metals and alloys, deformed by hydroextrusion, is substantially different and that for each material there should exist an optimum magnitude of friction on the surface of contact between the die and sample which provides a uniform distribution of strain along the transverse cross section of a hydroextruded part. The dislocation structure of tungsten and VM1 molybdenum, deformed to different degrees by a two-stage hydroextrusion process, was studied. Increase in the strain rate for tungsten and use of double extrusion for VM1 molybdenum provides produces a cellular structure with exceptionally small cells (down to 0.3 microns. This is particularly true when a very high rate of deformation is applied (100,000 mm/sec). 4 figures, 1 table, 14 bibliographical references.

1/1

USSR

UDC 584.535

ROMANOVA, R. R., BUYNOV, N. N., and PUSHIN, V. G., Institute of Physics of Metals of the Academy of Sciences USSR

"Effect of Natural Aging and Plastic Deformation on Artificial Aging of the Al-Zn-Mg Alloy"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 13, No 5, May 71, pp 1053-1057

Abstract: The effect of deformation carried out between natural and artificial aging on the structure and hardness of the Al-Zn-Mn alloy (wt %): 4.7 Zn; 1.87 Mg; 0.62 Mn; 0.17 Zr. 0.26 Fe; 0.13 Si; 0.05 Cu; the rest Al) was electron-microscopically investigated by the method of thin metal foils and hardness measurements. The investigation results are discussed by reference to electron-microphotographs of the alloy and the hardness dependence on the aging time at 180°C. It was found that preliminary natural aging with subsequent deformation increases the hardness of the artificially aged alloy and increases considerably the extent of dispersion separations in comparison with similar processing but without deformation between natural and artificial aging. The experimental results are explained on the basis of concepts about the effect of deformation on Guinier-Preston zones. Four illustr., twenty biblio. refs.

1/1

Aluminum and Its Alloys

USSR

UDC 669.71

DOBROMYSLOV, A. V., BUYNOV, N. N., GERSHKOVICH, R. M., and GLEBOV, V. V., Institute of Physics of Metals of the Academy of Sciences USSR

"Investigation of the Structure of Guinier-Preston Zones in the Alloy Aluminum-Silver"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 5, May 71, pp 1058-1062

Abstract: A comparative roentgenographic and electron-microscopic investigation of sizes of Guinier-Preston (G-P) zones was carried out with a view to examine the correctness of the three-phase model of the decay in aluminum-silver alloy. The investigation included the determination of the silver distribution in the G-P zone with full account for the diffusion dispersion. With that end in view, coefficients of order in the alloy aluminum-silver, water quenched from 535°C with subsequent aging at 165°C over a period of 15 min, were determined. A method is discussed by which the silver concentration in the G-P zone, which was found to be equal to the amount of silver previously present in a specific volume of the alloy, can be determined. Five illustra., five formulas, nine bilio. refs.
1/1

USSR

UDC 546.821.882.620.187

VOZILKIN, V. A., BUYNOV, N. N., BYCHKOV, Yu. F., VERESHCHAGIN, V. G., KARASIK, V. R., KURGANOV, G. B., and MAL'TSEV, V. A., Institute of Metal Physics, Academy of Sciences USSR; Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR

"Electron-Microscopic Investigation of the Structure of Superconducting Alloy Ti-22 at. % Nb"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 4, Oct 70, pp 753-761

Abstract: A study was made of the structure of a superconducting alloy (Ti--22 at. % Nb) with the help of a transmission electron microscope. The heat treatment regimes were determined at which separation of ω- and α- phases takes place in the alloy. The formation of the separations of ω-phase, whose dimensions increase with an increase in the aging temperature, was observed in the alloy during water quenching from 800°. In the 390-425° interval of aging temperatures while in the 470-500° interval, particles of the ω-phase were separated in the quenched alloy the separations were predominantly particles of the α-phase. A study was made of the shape and orientation

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520004-6"

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VOZILKIN, V. A., et al, Fizika Metallov i Metallovedeniye, Vol 30, No 4, Oct 70, pp 753-761

of the particles of these phases. The effect of dimensions of the particles of ω- and α-phases on the dependence $j_c(H)$ is shown. The authors thank T. V. SHCHEGOLEVA and V. G. RAKIN for useful discussion and S. A. KHUDOTEPLOV for assistance in obtaining the electron-microscopic photographs.

2/2

Transformation and Structure

USSR

UDC: 620.181:546.821.882

SUDAREVA, S. V., BUYNOV, N. N., VOZILKIN, V. A. and BYCHKOVA, M. I., Institute of Physics of Metals, Academy of Sciences USSR

"Investigation of the Occurrence of Strain Contrast According to the Position of the Line of No Contrast"

Sverdlovsk, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 87-96

Abstract: The nature of strain contrasts in the form of a pair of dark segments with a line of zero intensity, observed on electron microphotographs of Ti-Nb alloys after tempering, was investigated using the strain contrast theories. The form of alpha-phase particles and the geometry of stress fields near them were studied. The arrangement of atoms in the (1$\bar{1}$0) beta-phase and in the (0001) alpha-phase planes is given. Experiments were carried out on a Ti-50% Nb alloy, with tempering at 500°C for different times, and on a Ti-39% Nb alloy after tempering at 450°C for 15 min. The results are presented in the form of bright-field microphotographs of the alloy structure after hardening and tempering for various foil orientations and effective reflections. It is shown that the observed contrast is not connected with interstitial loops but results from

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SUDAREVA, S. V., et al, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 87-96

fields of coherent strain near the alpha-phase, and sometimes near the omega-phase particles, depending on the alloy structure state. The observed strain contrast confirmed the previously obtained theoretical and experimental data on strain fields near ω - particles, and also certain aspects from the theory of field images. It is noted in the conclusion that the Ti-39% Nb alloy hardened according to the B procedure disintegrates more slowly than that hardened by the A procedure. The omega-phase particles grow to large sizes; they retain the coherent bond and are present in great quantities in the alloy after 1 hour of annealing. However, metastable alpha-phase particles are present in the alloy. The experimental results obtained on the Ti-39% Nb alloy structure will be used in the future to establish the relationship between the superconducting properties and the structure.

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USSR

B

UDC 537.312.62

BUYNOV, N. N., VOZTRAKIN, V. A., and RAKIN, V. G., Institute of Metal Physics, Academy of Sciences USSR

"Study of the Structure of 65BT Superconducting Alloy

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 29, No 5, May 70, pp 1005-1009

Abstract: Using X-ray micrographic and electron microscopic methods, a study was made of the structure of the 65BT superconducting alloy after different regimes of heat treatment for the purpose of establishing a relationship between the structure and superconducting characteristics. The alloy was studied after the following regimes of treatment: water quenching from 1250°; tempering at 300, 500, 600, 700, 800, and 880° for 30 min; and tempering at 600° for 45 hrs, 700° for 2 hrs, 800° for 6 hrs, and 880° for 20 hrs. Decomposition took place in the alloy during heating in the temperature 300-880° range, which is followed by high refining of a certain volume of the solid solution. At tempering temperatures above 900° C, no decomposition was observed. The separated particles, upon attaining the size of 0.1 micron, become the source of dislocations. The authors thank L. N. Fedotov (TsNIICHM) for the alloy and S. V. Sudareva for help with the work.

1/1

USSR

UDC: 539.89:535.3

BUYNOVSKI, V., POROVSKI, S., and LAYSAAR, A. I.

"Device for Optical Research Under High Pressure at Nitrogen Temperatures"

Moscow, Pribory i tekhnika eksperimenta, No 1, 1973, pp 224-228

Abstract: The purpose of the device described in this paper is to investigate the optical characteristics of solids under hydrostatic pressure and low temperatures. It compresses helium or some other inert gas up to a level of 15 kbar, and differs from similar instruments by its simple construction and operational reliability under heavy pressure. Cross-sectional drawings are given of the gas compression system, of the high-pressure optical chamber, and of the nitrogen cryostat, and all three components are described in detail. As an example of the work the device is capable of doing, the authors reproduce the edge absorption spectra of a 83-micron thick GaSe monocrystal measured under various pressures and temperatures. They thank the personnel of the high-pressure laboratory of the Polish Academy of Science Institute of Physics for the high quality of the equipment.
1/1

USSR UDC: 621.3.0888

VALITOV, R. A., BUYNYAVICHYUS, V. V., PETRIKIS, S. S.

"Correlation Measurements and Experimental Determination of Errors"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 3 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 3), Novosibirsk, 1970, pp 29-31 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A300)

Translation: The authors note the importance of correlometers and the necessity for checking their errors with respect to three types of measurements: 1) the coefficient of mutual correlation in the case of zero delay; 2) determination of the correlation function or its envelope; 3) determination of decorrelation. A block diagram is given of a two-channel signal generator for determining errors of the first and third types. A method is also given for determining errors of the second type, a process which is in general more complicated than for the other types. E. L.

1/1

ACC NR: AP7016668 SOURCE CODE: UR/0383/67/000/002/0037/0038

AUTHOR: Yurchenko, N. P.; Amelina, L. S.; Buyovskiy, A. M.; Sviridenko, A. N.

ORG: none

TITLE: Production of bimetallic tube blanks by explosion

SOURCE: Metallurgicheskaya i gornorudnaya promyshlennost', no. 2, 1967, 37-38

TOPIC TAGS: explosive forming, ~~explosive tube forming, clad tube production, tube property~~ metal tube, bimetal, steel, copper /OKh18N10T steel, MZS copper

ABSTRACT:

The technology of explosion cladding stainless-steel tubes with copper is described. OKh18N10T steel (AISi-321) hot-rolled tubes (76 mm diameter, 12 mm wall thickness, 1100 mm long) and M3S copper cold-rolled tube (51, 2, 1100 mm, respectively) were assembled in two-layer blanks. The charge was placed in the clad tube; a filler was inserted between the tube wall and the charge to transfer the explosive impulse to the clad tube and ensure against failure. Bimetallic tube blanks 76 x 14 x 1100 mm were manufactured by this method. After heat treatment, they were cold rolled in

Card 1/2 UDC: 621.774.5

ACC NR: AP7016668

5 passes to 22.4 mm diameter, 1.2 mm wall thickness, and up to 3000 mm long. The tubes had good cohesion and a uniform clad layer in the range 0.18—0.20 mm. Tested specimens had a shear strength of 17—30 kg/mm^2 and the strength of bimetallic joints was higher than that of the copper layer. The tests were conducted at the pilot polygon and VNITI.

SUB CODE: 11, 13/ SUBM DATE: none/ ATD PRESS: 5130 [AZ]

Card 2/2

USSR

UDC 621.385:530.145.6:62

BUYUKYAN, S. P., VASINYUK, I. YE.

"Transistorized Photomultiplier Signal Shaper"

Proyektirovaniye -- V sb. (Design -- collection of works), vyp. 2, Moscow, 1970, pp 98-105 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D420)

Translation: A schematic of a shaper designed for operation in the photo-recording channel of a laser interference aligner is described. In the signal circuits direct couplings are used for best preservation of the shape of the video signal. The presence of a video signal level stabilization circuit insures reliable operation of the amplitude discriminator directly shaping the video signal.

1/1

USSR

GOLOVKIN, V. S., BYKOV, V. N., LEVDIK, V. A.

"Effect of an External Field on the Temperature Hysteresis of the Magnetic Structure of Chromium"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 6, Jun 72, pp 1783-1784

Abstract: In previous research by these same authors (DAN SSSR, Vol 201, 1971, p 1330) a change was observed in the sign of temperature hysteresis of the magnetic structure of chromium during transition of a single crystal from the "three-Q" state (ordinary chromium) to the "one-Q" state, which is characterized by the presence of domains with only modulation of spin density waves brought about by cooling the specimen through the Néel point in a strong magnetic field. In this paper a neutron diffraction study is made at $\lambda = 1.25$ Å to determine the behavior of temperature hysteresis of ordinary chromium in the presence of a magnetic field, using the same iodide single crystal as in the previous work. The results confirm the conclusions of the previous research. It was found that low-temperature magnetic treatment is more effective than cooling through the Néel point in isolating the predominant modulation.

1/1

USSR

UDC 534.121

BUYVOL, V. N., Institute of Hydromechanics of the Academy of Sciences of the Ukrainian Soviet Socialist Republic

"Oscillations of the Cylindrical Shell in a Liquid by the Interface" (Two-dimensional problem)

Kiev, Gidromekhanika, No 19, 1971, pp 39—44

Abstract : The solution of the problem of natural oscillations of a circular cylindrical shell in an incompressible inviscid liquid close to the rigid wall either the free surface of the liquid was found by the method of images, considering the dispersion of energy in the shell material. By means of the method of infinite systems of algebraic equations and infinite determinants, an approximate but sufficiently exact and simple formula was derived for the determination of natural frequencies of the system elastic shell - liquid. The effect of interface on

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USSR

BUYVOL, V. N., Gidromekhanika, No 19, 1971, pp 39-44

natural frequencies of oscillations of the free shell is analyzed. It is demonstrated that this effect is very small and rapidly attenuating with the depth and that the shell containing a liquid is less susceptible to the free surface and more susceptible to the rigid wall than a not filled shell. Two illustr., 16 formulas, nine biblio. refs.

2/2

USSR B

UDC 621.396.676:629.7(088.8)

BUYVOL-KOT, YU. I., SEROV, L. A., TSIFRINOVICH, I. I., TSYBAYEV, B. G.

"Landing Beam Aircraft Antenna"

USSR Author's Certificate No 253876, Filed 24 Apr 68, Published 3 Mar 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9B26P)

Translation: A landing beam aircraft antenna with broad coverage is proposed. In order to create a nonprotruding design, the antenna was executed in the form of a segment of a shorting symmetrical ribbon line. The screen plates of the line are shifted with respect to each other. There is one illustration.

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1/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--THE PROBABILITY OF DISCOVERING SMALL SCALE PHENOMENA DEPENDING ON THEIR SIZE AND DENSITY OF OBSERVATION NETWORK -U-

AUTHOR--BUZ, A.I.

B

COUNTRY OF INFO--USSR

SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 2, PP 63-70

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--PROBABILITY, WEATHER STATION, METEOROLOGIC PHENOMENON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1219 STEP NO--UR/0050/70/000/002/0063/0070

CIRC ACCESSION NO--AP0103107

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103107

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASED ON PROBABILITY THEORY PRINCIPLES, THE PROBABILITIES OF DISCOVERING PHENOMENA OF VARIOUS SCALES ARE DEFINED IN DEPENDING ON THE NUMBER OF OBSERVATIONAL STATIONS IN A TERRITORY OF A GIVEN SIZE. EQUATIONS ARE DERIVED TO DETERMINE A MEDIUM SIZE PHENOMENON AND THE NUMBER OF PHENOMENA OF A GIVEN SCALE OVER THE TERRITORY UNDER CONSIDERATION DEPENDING ON THE NUMBER OF PHENOMENA FIXED BY OBSERVATIONAL STATIONS. BASED ON AN EXAMPLE OF PROPAGATION OF CONVECTIVE PHENOMENA OVER THE TERRITORY OF THE LITHUANINA SSR, THE VALIDITY OF ADOPTED ASSUMPTIONS IS SHOWN.

UNCLASSIFIED

USSR

UDC: 8.74

BUZA, M. K., POSNOV, N. N.

"On Inversion of Matrices in the System of Notation in Residual Classes"

Minsk, Teoriya i primeneniye mat. mashin--sbornik (Theory and Application of Mathematical Machines--collection of works), Belorussian University, 1972, pp 11-16 (from RZh-Kibernetika, No 5, May 73, abstract No 5V750 by the authors)

Translation: A method of matrix inversion is proposed which is based on using modulus arithmetic and enables improving the accuracy of calculations without increasing word length. Specific applications of this method are given. It is shown that the procedure is effective for matrix inversion and solution of systems of linear algebraic equations.

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USSR UDC: 8.74

BUZA, M. K.

"On a Nonmodular Operation in Subtraction Code"

Vestn. Belorus. un-ta (Belorussian University Herald), 1971, ser. 1, No 3, pp 35-37 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V947)

Translation: The structure of a set of permissible values in rankless systems with deductions of arbitrary signs is investigated, and a method is given for determining the sign of the number in a subtraction code. Author's abstract.

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USSR

B

UDC 681.3.001:518.5

BUZA, M. K., KRAVTSOV, V. K.

"The Effectiveness of Computerized Problem Solving"

Matem. Machiny I Programmir. Obucheniye (Mathematical Machines and Programmed Learning - Collection of Works) Minsk, Belorussk, UN-Press, 1969, pp 40-51 (from Referativnyy Zhurnal Avtomatika, Telemekhanika I Vychislitel'naya Tekhnika, No 5, 1970, Abstract No 5 B61, by V. Ya.)

Translation: The problem of the realization of various algorithms in a finite number of steps on a computer with limited memory is analyzed. Since algorithms of problems can be realized in various methods, an optimal method can always be indicated after carefully analyzing the versions of the algorithm possible. A method is presented for calculating the expediency of solving problems using a given class of computers and number of registers for intermediate results. The maximum number of registers for the storage of intermediate results in the solution of certain problems is analyzed and presented in a table. Data are presented on the number of elementary operations required to realize the number of mathematical methods: for example, calcualtion of a probability interval, central moments, dispersion, etc. One illustration, 1 table. 1/1

USSR UDC 617.723:616-001.34-073

BUZALO, A. F., Physician, Chair of Eye Diseases and Chair of Hospital Therapy, L'vov Medical Institute

"Eye Vessel Disturbances in Vibration Sickness"

Odessa, Oftal'mologicheskiy Zhurnal, Vol 25, No 6, 1970, pp 434-437

Abstract: Vascular disturbances in the eyes of persons with vibration sickness were studied. The patients had been working with instruments generating vibration frequencies from 20 to 200 cycles per second. All patients of the II-IV stages (61 individuals) complained of transitory spots in their eyes. Vascular disturbances, constriction of the peripheral visual field boundaries and widening of the blind spot were present in all stages of illness. Microscopic examinations of the anterior segment of the eye revealed changes in the vessels of conjuctiva, sclera, and limbus, manifested by spasms, atonia, and ampule-shaped dilation. In the iris, predominantly on the temporal side, the pigment rim appeared to be destroyed. The change in intraocular tension was characterized by destruction of configuration and rise in elastocurves. A pronounced constriction of the peripheral visual field and widening of the blind spot were recorded in patients with a low index of correlation and deviation from the normal values of Lobstein's index. These changes may be used in diagnosing vibrational sickness.

1/1

USSR

UDC 621.382.2

BUZANEVA, YE. V., PAVLOVSKAYA, V.I., STRIKHA, V.I.

"Effect Of Adsorption Of Ions Of Certain Metals On The Rectifying Properties Of A W--Si Contact"

Poluprovodn. tekhn. i mikroelektronika. Resp. mezhved. sb. (Semiconductor Technology and Microelectronics. Republic Interdepartmental Collection), 1968, Vyp 2, pp 59-67 (from RZh--Elektronika i yeye primeneniye, No 6, June 1970, Abstract No 6B141)

Translation: The paper investigates the effect of adsorption of Cu and Sn ions on the properties of a p-type W-Si contact with a resistivity of 0.04 ohm.cm. The voltage-current characteristics, the differential resistance at zero displacement, and the height of the potential barrier were measured. The force of the pressure was selected as constant and amounted to 30 plus or minus 2 gram, and the radius of curvature of the clamped contact was ~ 20 micron. Doping of the surface of the Si by Cu ions lead to a decrease of the resistance of the contacts and to an increase of the forward and reversed currents; doping by Sn ions lead to opposite results. The results are explained by a change of the system of surface states which leads to a change in the height of the potential barrier. 6 ill. 15 ref. V.M.

1/1

USSR

UDC 632.954

BUZANOV, I. F., NESTERENKO, N. I., MAKOVETSKIY, K. A., All-Union Scientific Research Institute of Sugar Beets

"Testing Ronite on Sugar Beet Fields"

Moscow, Khimiya v Sel'skom Khozyaystve, No 9, 1971, pp 47-50

Abstract: In 1968-1969, a study was made of the effect of ronite (S-ethylcyclohexylthiolcarbamate) on weeds and sugar beets (under field conditions) and also on some physiological processes occurring in sugar beet plants (under laboratory conditions). Application of the herbicide ronite to the sugar beet fields either before planting or before appearance of shoots destroyed 40-80 percent of the weeds. The ronite was identically effective against monocotyledonous and dicotyledonous weeds. Increased doses of ronite delayed the shoots somewhat and suppressed the young sugar beet plants. During the initial period, as a result of suppression by the herbicide the sugar and hydrocarbon content increased in the plants, and the respiration intensity decreased. The herbicide had practically no effect on the intake of mineral nutritive elements. On application of the ronite, the sugar beet root harvest did not drop, but the sugar content and quality were reduced.

1/1

USSR

UDC 669.715'782'243'74'721:669.018.2

KISIN, I. L., BUZAYEVA, I. N., KAUSHANSKIY, D. Ya., and FEDOROV, G. A.

"Modification of Aluminum-Silicon Alloy for the Production of Piston Alloy"

V sb. Modifitsir. siluminov (Modification of Silumins -- Collection of Works), Kiev, 1970, pp 158-159 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1748 by I. NABATOVA)

Translation: The authors developed and introduced a technology of modifying hypereutectic Silumin for pistons. An investigation was conducted on the alloy containing (in %) Si 17.0, Ni 1.1, Mn 0.66, Cu 1.87, Mg $\leq$ 0.3, Zn $<$ 0.3, Fe $<$ 1.0. Of the modifiers tried (PCl_5, AlP, Cu_3P), Cu_3P was found technologically most effective, convenient in production, and economical. Modification raised the mechanical properties of the alloy (breaking point by $\sim$5 kg/mm^2) and the purity of the piston surface after machining, as well as reducing wear on the cutting tool. One illustration. Bibliography of one title.

1/1

USSR UDC 536.77:534

BUZHDAN, YA. M., KOLOTOV, YA. L., SHELUDYAKOV, YE. P., Institute of Thermal Physics, Siberian Department, Academy of Sciences of the USSR, Novosibirsk

"Method of Thermodynamic Matching of Acoustic Data With P-v-T Data"

Novosibirsk, Izvestiya SO AN SSSR, Ser. Tekhn. nauk, No 13 (178), Vol 3, Oct 70, pp 77-80

Abstract: A thermodynamic method is proposed for relating the speed of sound in matter on low frequencies to temperature, specific volume and pressure. The described procedure can be readily extended to combined processing of P-v-T and caloric data, as well as to some other instances of combined processing of different types of thermodynamic information.

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IX-5. THERMODYNAMIC ANALYSIS OF THE CRYSTALLIZATION CONDITIONS OF SILICON CARBIDE

[Article by L. A. Kuznetsov, Ya. M. Buzhdan, T. V. Fedorova, G. N. Kuznetsov, Novosibirsk; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 126]

A thermodynamic analysis was made of the deposition of silicon carbide from the gas phase considering all possible condensed phases and all gas compounds of significance.

The regions of realization of the different phase complexes were defined. Arguments were stated regarding the region of conditions favoring growth of perfect crystals. A qualitative comparison of the calculations with the available experimental results was made.

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JPRS 57208
6 Jun 73

II-2. METHOD OF DESCRIPTION AND CALCULATION OF THE THERMODYNAMIC EQUILIBRIUM IN A MULTICOMPONENT SYSTEM WITH CHEMICAL CONVERSION

[Article by Ya. M. Buzhan, G. N. Kuznetsov, V. I. Denisov, Novosibirsk; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 127]

An analysis of the mathematical meaning of the De-Donde variables indicates the possibility of introducing new variables in certain relations analogous to the De-Donde variables but having significant advantages when describing the equilibrium in multicomponent systems.

On the basis of using the new variables, a method of calculating the chemical equilibrium is proposed which combines the universality with a relatively high computation speed on a computer. Examples are presented of the thermodynamic calculations of the systems used in the semiconductor layer growth procedures important in practice.

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1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--LIGHTWEIGHT CONCRETE MIXTURE FOR STRUCTURAL COMPONENTS -U-

AUTHOR-(03)-BUZHEVICH, G.A., KURASOVA, G.P., FIGAROV, R.G.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,426
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CONCRETE, PATENT, MECHANICAL STRENGTH, GRAVEL, CEMENT, LIMESTONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1416 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128815

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0128815

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LIGHTWT. CONCRETE MIXT. OF DECREASED BULK D. AND INCREASED STRENGHT CONSISTED OF: PORTLAND CEMENT 20-5, 5-20 MM FRACTION OF KERAMZIT GRAVEL 40-5, WATER 10-15, AND 0-2.5 MM FRACTION OF LIMESTONE SAND 25-30 WT. PERCENT. FACILITY: SCIENTIFIC RESEARCH INSTITUTE OF CONCRETE AND REINFORCED CONCRETE.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--BEHAVIOR OF CHLORINE IN THE ELECTROLYSIS OF COPPER AND INSOLUBLE ANODES AND AIR AGITATION OF THE ELECTROLYTE AT HIGH CURRENT DENSITIES

AUTHOR-(05)-BUZHINSKAYA, A.V., MIGINA, A.I., ZHATKINA, T.F., MIKHAYLOVA, O.I., BOBROV, A.B.

COUNTRY OF INFO--USSR

B

SOURCE--ELEKTROKHIMIYA 1970, 6(3), 315-17

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--COPPER ELECTROLYTIC REFINING, ELECTROLYTE, ELECTRODEPOSITION, EXTRACTIVE METALLURGY, CHLORINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1382 STEP NO--UR/0364/70/006/003/0315/0317

CIRC ACCESSION NO--AP0116831

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0116831

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE ELECTROLYSIS OF A SOLN. CONTG. GU 45-50, H SUB2 SO SUB4 90-100, NISO SUB4 SMALLER THAN OR EQUAL TO 20, AND CL NEGATIVE (AS NACL) 50-500 G-DM PRIME3 AT 50DEGREES, THE ELECTROLYTE WAS AGITATED BY AN AIR FLOW OF 10 L.-CM PRIME2 OF INTERELECTRODE CROSS SECTION PER HR. THE RATIO OF CL IN THE ATM. TO THAT IN SOLN. DOES NOT CHANGE WHEN THE C.D. IS INCREASED FROM 1000 TO 2500 A-M PRIME2. A CONCN. OF 0.5-1.5 G FECL SUB3-DM PRIME3 IS SUFFICIENT IN THE HYDROMETALLURGICAL TREATMENT OF CEMENT CU AND SUBSEQUENT ELECTRODEPOSITION OF CU FROM SOLN. FACILITY: GOS. NAUCH. ISSLED. INST. TSVET. METAL., MOSCOW, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--BEHAVIOR OF CHLORINE IN THE ELECTROLYSIS OF COPPER AND INSOLUBLE ANODES AND AIR AGITATION OF THE ELECTROLYTE AT HIGH CURRENT DENSITIES

AUTHOR-(05)-BUZHINSKAYA, A.V., MIGINA, A.I., ZHATKINA, T.F., MIKHAYLOVA, O.I., BOBROV, A.B.

COUNTRY OF INFO--USSR

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DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

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CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1382 STEP NO--UR/0364/70/006/003/0315/0317

CIRC ACCESSION NO--AP0116831

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--090CT70
CIRC ACCESSION NO--AP0116831
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE ELECTROLYSIS OF A SOLN. CONTG. GU 45-50, H SUB2 SO SUB4 90-100, NISO SUB4 SMALLER THAN OR EQUAL TO 20, AND CL NEGATIVE (AS NACL) 50-500 G-DM PRIME3 AT 50DEGREES, THE ELECTROLYTE WAS AGITATED BY AN AIR FLOW OF 10 L.-CM PRIME2 OF INTERELECTRODE CROSS SECTION PER HR. THE RATIO OF CL IN THE ATM. TO THAT IN SOLN. DOES NOT CHANGE WHEN THE C.D. IS INCREASED FROM 1000 TO 2500 A-M PRIME2. A CONCN. OF 0.5-1.5 G FECL SUB3-DM PRIME3 IS SUFFICIENT IN THE HYDROMETALLURGICAL TREATMENT OF CEMENT CU AND SUBSEQUENT ELECTRODEPOSITION OF CU FROM SOLN. FACILITY: GOS. NAUCH. ISSLED. INST. TSVET. METAL., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 548.55 : 612.373.8

BUBNOV, M. M., BUZHINSKIY, I. M., DIANOV, Ye. M., MAMONOV, S. K., MIKHAYLOVA, L. I., and PROKHOROV, A. M., Academician, Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR, Moscow

"Change in the Sign of the Thermal Lens of Glass Laser Rods With a Change in the Glass Thermooptical Constant"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 3, 1972, pp 556-559

Abstract: The article describes results of a study of glasses with both positive and negative, constant thermooptical values. The focal distances of the thermal lens which forms during periodical laser rod pumping were measured by the autocollimation method. It was found that the thermal lens power decreases, as the thermooptical constant decreases, and changes sign at some constant thermooptical values. This correlation between lens power and the thermooptical constant of the glass occurs for glasses of various compositions (silicate, boron phosphate, phosphate). The mechanisms leading to lens formation are considered in order to explain this relation.

The authors thank S. I. KURGACHEV for his aid in the experiments.

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UDC 548.55:612.373.8

BUZHINSKIY, I. M., DIANOV, YE. M., MAMONOV, S. K., MIKHAYLOVA, L. M., and PROKHOROV, A. M., Academician, Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR, Moscow

"Thermooptical Characteristic of Glasses Activated by Neodymium"

Moscow, Doklady Akademii Nauk SSSR, Vol. 190, No. 3, 21 Jan 70, pp 558-561

Abstract: The problem of the thermal distortion of laser resonators associated with the development of glass lasers with a high energy density is discussed. It is noted that the active elements of neodymium-activated glass lasers have a high optical homogeneity; the change in the refractive index in a transverse cross section of the rod does not exceed $1 \cdot 10^{-7}$ for a 2.5-cm rod. However, this high homogeneity in the glass does not occur during laser operation, due to a temperature gradient developed by nonuniform pumping; this gradient, in turn, leads to a gradient in the index of refraction. A new method is presented for measuring directly the thermooptical constant W of glasses, and values of W are given for the following neodymium-activated glasses: KGSS-3, KGSS-7, LGS-24-5, LGS-28-2, KGSS-46, LGS-36, and LGS-41. The LG-126 neon-helium laser was used as a source to measure the thermooptical constants in the temperature interval 10-45°C at wave-

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