

USSR

UDC [537.226+537.311.33]:[537+535]

BAKUTIS, I. P., BAREYKENE, R. M., and VALATSKA, K. K.

"Temperature Dependence of Photovoltaic Effect in CdTe Thin Layers"

V sb. Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya (Thin Films of Tellurium Compounds with Metals of Zinc and Gallium Subgroups -- Collection of Works), Vil'nyus, 1970, pp 63-68 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE814 by E. B. K.)

Translation: The authors investigated the temperature dependence of the photovoltage (PV) in photovoltaic CdTe layers in which PV polarity depends on direction of illumination. Specimens were made by simultaneous evaporation of CdTe and Cd; then after the lapse of a certain time cadmium evaporation was halted and only the evaporation of stoichiometric CdTe continued. On illumination of the resultant specimens in the direction of the layer, the magnitude of PV increases at first with a decline in temperature, but starting at a certain temperature, different for each specific wavelength of exciting light it begins to decline and changes its sign. The authors believe that the results can be explained by means of a model which assumes anisotropy of the electrical conductivity of photoactive crystallites and that a high PV is the sum of elementary transverse Dember photoelectromotive forces. No final

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BAKUTIS, I. P., et al., Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya, 1970, pp 63-68

conclusions can be drawn on the basis of the cited data as to the nature of the observed PV sign inversion with a change in temperature.

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1/2 041 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SOME COMPENSATORY MECHANISMS OF THE TRACE ELEMENT METABOLISM
DISORDER IN PATHOLOGY -U-
AUTHOR-(05)-BALA, YU.M., AKSENOV, G.I., KOPYLOVA, L.M., LIFSHITS, V.M.,
PLOTKG, S.A.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 81-84
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES.
TCPIC TAGS--TRACE ELEMENT, PATHOLOGY, METABOLISM, ENZYME, NICKEL,
MAGNESIUM, VANADIUM, ERYTHROCYTE, PROTEIN, HYPOXIA, ANEMIA, BLOOD
CIRCULATION, MYOCARDIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0264 STEP NO--UR/0504/70/042/004/0081/0084
CIRC ACCESSION NO--AP0127854
UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127854

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF EXAMINATION OF 1200 PATIENTS WITH DIFFERENT DISEASES AND 300 ANIMAL THE AUTHORS DISCUSS THE ROUTES OF INVOLVEMENT OF TRACE ELEMENTS INTO THE COMPENSATORY AND ADAPTATIONAL PROCESSES. ONE OF THEM IS THE PARTICIPATION OF TRACE ELEMENTS IN ENZYMATIC REACTIONS. THREE MAIN COMPENSATORY MECHANISMS CAN BE SINGLED OUT; 1. A RESIDUAL ACCUMULATION OF NICKEL, MAGNESIUM, VANADIUM IN ERYTHROCYTES ESPECIALLY IN THE FRACTION OF NONHEMOGLOBIN PROTEINS OCCURS IN DIFFERENT HYPOXIC CONDITIONS (ANEMIA, CIRCULATORY INSUFFICIENCY). IT COULD BE ASSUMED THAT THIS ACCUMULATION IS ASSOCIATED WITH THE FUNCTION OF ENZYMES, WITH THEIR ACTIVIZATION WITH IONS OF HEAVY METALS. THIS REACTION DEVELOPS RATHER EARLY AND DOES NOT DEPEND UPON THE CASES PROVOKING HYPOXY. 2. PATHOLOGICAL AFFECTION OF A PORTION OF SOME IMPORTANT ORGAN NECESSITATES AND INTENSIFIED FUNCTIONING OF INTACT PORTIONS. THE CONTENT OF A NUMBER OF BIOLOGICALLY IMPORTANT TRACE ELEMENTS DECREASES AND IN THE SURROUNDING AREA, INCREASES. THE MENTIONED COMPENSATORY SHIFTS ARE ASSOCIATED WITH PECULIARITIES OF METABOLISM IN THESE TISSUES AND DEPEND UPON THE STAGE OF THE DISEASE. 3. DISTINCT PARTICIPATION OF TRACE ELEMENTS IN COMPENSATORY REACTIONS IS OBSERVED IN SO CALLED "ACUTE SYNDROMES" DEVELOP IN MYOCARDIAL INFARCTION. FACILITY: KAFEDRA FAKUL'TETSKOY TERAPII AND TSENTRAL'NAYA N-I LABORATORIYA VORONEZHSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

AA0044234

BALABAN, A.S. UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243680 CABLE LAYING MACHINE digs trenches for cables along an old cable. A track laying motor vehicle pulls a plough. The coupling between the plough and the towing motor is pneumatic and it is controlled by radio signals. The level and the direction of ploughing are determined by the relative position of the plough to the cable.

23.3.68 as 1228413/29-14. YA.I.MARCHEVSKI et al(3.10.69)
Bul 17/14.5.69. Class 21c. Int.Cl. H 02g.

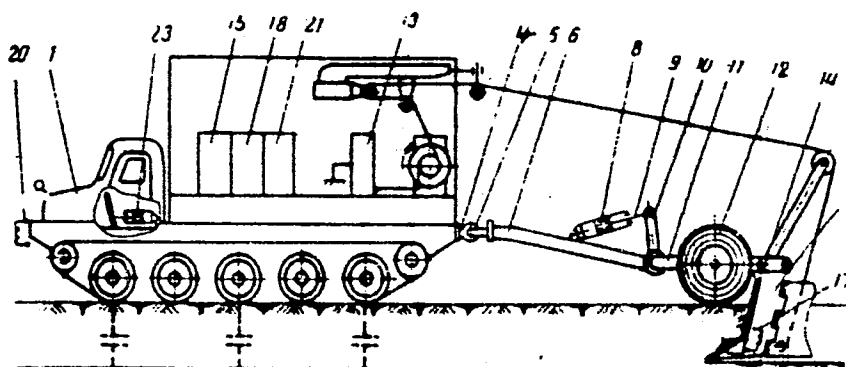
AUTHORS: Marchevskiy, Ya. I., Furto, G. S., Fishgal, S. I.,
Balaban, A. S., Pil'ganchuk, P. N., Imereli, V. B., Stepanenko,
L. K., Parkhomenko, A. I., Min'kovskaya, S. M., Voznesenskiy, I. A.,
Vishnyakov, I. Ye., Zinoveyev, A. I., Razumovskiy, O. V., Khrulev,
V. V., Politova, A. Ye., Khayzeruk, Ye. M., Smirnov, V. I.,
Malakhova, V. M.

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USSR

UDC 577.155.02:576.851

LESHCHINSKAYA, I. B., BALABAN, N. P., and TANYASHIN, V. I., Kazan' State University

"Splitting of the Pyr-3'-P-5'-Pur Bond in DNA by Some Bacterial DNAases"

Moscow, Mikrobiologiya, No 5, 1971, pp 806-808

Abstract: Analysis of the substrate specificity of Bacillus mesentericus 19 K and Bacillus subtilis 13K DNAases, Serratia marcescens BU-211 ATCC-9986 nuclease, and pancreatic DNAase showed that all of these enzymes are capable of splitting the Pyr-3'-P-5'-Pur bond in DNA but in different degrees. Pancreatic DNAase hydrolyzed 1.5 to 2% of this phosphodiester bond, Bac. mesentericus DNAase 4 to 5%, Bac. subtilis DNAase 6.5 to 7%, and Ser. marcescens nuclease 8.0 to 8.5%. The degree of hydrolysis of the other types of DNA bonds by these enzymes (Pur-3'-P-5'-Pir, Pur-3'-P-5'-Pur, Pir-3'-P-5'-Pir) also varied - 9, 21.3, 24.0, and 34.7%, respectively.

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1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INFLUENCE OF GLOBULAR ORGANIZATION ON THE ELECTRICAL STRENGTH OF
POLYSTYRENE -U-
AUTHOR--(03)-KOLESOV, S.N., BALABAN, N.P., KHERASKOV, L.N.
COUNTRY OF INFO--USSR **B**
SOURCE--VVS KOMOL. SOEDIN., SER. B 1970, 12(5), 366-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--POLYSTYRENE RESIN, PLASTIC FILM, ELECTRIC FIELD, ELECTRIC
PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/1332 STEP NO--UR/0460/10/012/005/0366/0368
CIRC ACCESSION NO--AP0138342
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138342

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYSTYRENE FILMS, FORMED BY THE
EVAPN. OF ITS SOLNS. IN O,XYLENE HAVE MORE REGULAR AND FINER GLOBULAR
STRUCTURE THAN FILMS FROM CCL SUB4 SOLNS. THE FORMER FILMS HAVE 460
KV-MM ELEC. FIELD STRENGTH; THE LATTER, 260 KV-MM. FACILITY:
TASHKENT. ELEKTROTEKH. INST. SVYAZI, TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC 669.017.12

LEVI, L. I., ~~BALABANKIN, V. Ye.~~, POPOVA, N. Yu., and SKAZIN, V. Ye., Moscow Institute of Steel and Alloys, Scientific Research Institute of Electrical Engineering

"On the Problem of Improving Nickel-Calcium Alloys"

Ordzhonikidze, Tsvetnaya Metallurgiya, No 1, 1972, pp 109-111

Abstract: The deoxidation of nickel and nickel-calcium alloys by blowing the surface of the liquid bath with hydrogen and continuously evacuating gas from the furnace chamber was investigated on brands NP-2 and NO nickel. It was found that 8-12 l/min hydrogen blowing for 20 min guarantees sufficiently complete deoxidation of nickel (0.003-0.001% O₂), regardless of initial oxygen concentration. With purging temperatures of 1530° and higher, the ingots showed large grains; with a temperature of 1480° equiaxial small-sized grains predominated. The typical structure of the produced NIKA alloy is discussed by reference to its microstructure. These alloys contain fewer impurities than existing alloys. Two illustrations, nine bibliographic references.

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UDC 621.385.032.213.6

USSR

BALABANKIN, V. YE., KULESHOVA, T.F., NIKONOV, B.P., POPOVA, N.YU.

"Multilayer Materials Based On Nickel With Calcium Or Strontium For Cores Of Low-Temperature Oxide Cathodes"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 9, pp 110-116 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A68)

Translation: A multilayer core is proposed for an oxide cathode, operating at temperatures of $850-1050^{\circ}\text{K}$, with the object of stabilizing the speed of entry of an activator into the oxide layer. The multilayer core is made in the form of a band of nickel with addition of calcium or strontium, covered from both sides by a film of pure nickel. An alloy of nickel with calcium or strontium and nickel of mark NVK serves as a starting material for the production of such bands. The joint of the billet is accomplished on the unit for diffusion welding A 360.08 in a vacuum at a temperature of $850 \pm 25^{\circ}\text{C}$ and a specific pressure of $0.8-1.0\text{ kg/mm}^2$. The welded billets are rolled without heating, with intermediate annealings in a vacuum (or in an H_2 atmosphere) at a temperature of

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BALABANKIN, V. Ye., et al., Elektron. tekhnika. Nauchno-tekhn. sb. Elektron SVCh
1970, Issue 9, pp 110-116 (from RZh--Elektronika i yeye primeneniye, No 1,
Jan 1971, Abstract No 1A68)

$800 \pm 25^{\circ}\text{C}$ after a total reduction in area of $\sim 50\%$. The maximum gas evolution of the multilayer bands containing Ni with the addition of Ca and which is heated to 1000°C in a vacuum (pressure $\leq 10^{-6}$ mm mercury) for 20-30 min was observed at $800-850^{\circ}\text{C}$ and did not exceed $4 \text{ cm}^3/100 \text{ g}$. Under identical conditions of test, bands containing nickel with the addition of strontium gave off the maximum quantity of gases at a temperature of $900-950^{\circ}\text{C}$. 5 ill. 4 tab.
9 ref. G. B.

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- 109 -

UDC:662.215.2

USSR

AL'TSHULER, L. V., BALABANOV, A. V., BATALOV, V. A., RODIONOV, V. A.,
TARASOV, D. M., Moscow

"X-Ray Structural Study of the Initial Stage of Development of an Under-
ground Explosive Cavity in Sandy Soil"

Novosibirsk, Fizika Goreniya i Varyva, Vol. 6, No. 3, Sep 70, pp. 363-373

Abstract: The authors studied the kinetics of development of underground explosive cavities in various media, including study of the earliest phases of these processes, in order to determine the effective mechanical characteristics of soils, to test and clarify the equations of state of the explosion products and current calculation methods. The experimental observation was performed by transmission of x-rays through massive sections containing explosive charges in short bursts of x-rays. This report describes the experimental methodology and data produced in non-saturated sand, and also presents idealized mathematical calculations of underground explosions in compressible media, which are used for interpretation of the results produced.

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1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CORNEAL ASTIGMATISM VARIATIONS IN SCHOOLCHILDREN -U-
AUTHOR--BALABANGV, V.I. *B*
COUNTRY OF INFO--USSR
SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 3, PP 12-13
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CORNEA, PEDIATRICS, VISUAL DEFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0124

STEP NO--UR/0357/70/000/003/0012/0013

CIRC ACCESSION NO--AP0129380

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129380
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. CHANGES OCCURRING IN THE CORNEAL
ASTIGMATISM AND UNCORRECTED VISUAL ACUITY WERE FOLLOWED UP FOR 5 YEARS
IN 88 EYES OF SCHOOLCHILDREN WITH SIMPLE AND COMPLEX HYPERMETROPIC
ASTIGMATISM AND IN 30 EYES WITH OTHER TYPES OF ASIGMATISM. WITH
ADVANCING AGE ASTIGMATIC SCHOOLCHILDREN, AS A RULE, DEMONSTRATED SHIFTS
TOWARDS LEVELLING OUT OF THE CORNEAL SPHERICITY AND IMPROVEMENT OF
UNCORRECTED VISUAL ACUITY. FACILITY: MEDITSINSKIY FAKUL" TET
MORDOVSKOGO GOSUDARSTVENNOGO UNIVERSITETA SARANSK.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--300C170
TITLE--CHROMATOGRAPHIC ANALYSIS OF DIBORANE, SILANE, AND GERMANE FOR
ORGANIC IMPURITIES -U-
AUTHOR-(05)-ZORIN, A.D., FROLOV, I.A., KARABANOV, N.T., KEDYARKIN, V.M.,
BALABANOV, V.V. *B*
COUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 389-91, *1*
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--DIBORANE, SILANE, GERMANIUM COMPOUND, CHROMATOGRAPHIC
ANALYSIS, CHEMICAL PURITY, ALKANE, ALKENE, ALDEHYDE, METHANOL, ETHANOL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2070 STEP NO--UR/0075/70/025/002/0389/0391
CIRC ACCESSION NO--AP0125657
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125657

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A CHROMATOGRAPHIC METHOD WAS DEVELOPED FOR THE DETN. OF ORG. COMPS. IN DIBORANE, SILANE, AND GERMANE WITH A SENSITIVITY OF 2 TIMES 10 PRIME NEGATIVES-1.5 TIMES 10 PRIME NEGATIVE4 VOL. PERCENT. INZ-600, TND-FS-M, DIATOMITE BRICK WERE USED AS SOLID SUPPORTS FOR THE DETN. OF GERMANE, SILANE, AND DIBORANE, RESP.; THE LIQ. PHASE WAS SQUALENE, VASELINE OIL AND POLYETHYLENE GLYCOL-2000, TRICRESYL PHOSPHATE AND SQUALENE. N IS THE CARRIER GAS. INDUSTRIAL DIBORANE CONTAINS C SUB6 H SUB6, PROPYLENE, C SUB6 H SUB8, C SUB5 H SUB12, MECL, AND C SUB6 H SUB14. INDUSTRIAL SILANE CONTAINS C SUB4 H SUB10, ME SUB2 O, MEETO, ET SUB2 O, ETCL, ACETYLALDEHYDE, ME SUB2 CO, MECH, ETOH, C SUB6 H SUB6, TRIETHOXY SILANE; INDUSTRIAL GERMANE CONTAINS CH SUB4, C SUB2 H SUB4, C SUB2 H SUB6, PROPYLENE, C SUB3 H SUB7, C SUB4 H SUB10, AND ISCBUTANE. FACILITY: SCI.-RES. INST. CHEM., GORKI STATE UNIV., GORKI, USSR.

UNCLASSIFIED

Acc. Nr: **MP0044698**

B Ref. Code:
UR 0497

PRIMARY SOURCE: *Klinicheskaya Meditsina*, 1970, Vol 48,
Nr **2**, pp **25-29**

RADIOISOTOPE SCANNING OF THE LUNGS

V. S. Afanas'yeva, T. A. Finikova, A. N. Zbants, Yu. V. Balabanov,
T. A. Chernyakova

Summary

Scanning opens up new vistas in the diagnosis of circulatory disturbances in diseases of the lungs. The report is based on an analysis of investigations carried out in 109 patients suffering from different diseases of the lungs (embolism of the pulmonary artery, pulmonary tuberculosis, malignant tumors). After roentgen-tomographic investigation scanning of the lungs was performed 5-10 minutes after intravenous introduction of 200-300 μ C of radio-iodine-labelled macroaggregate albumin. The scintigrams reflected the degree of vascularization of the pulmonary tissue and enabled to establish the volume of disturbances by the presence of «silent» zones and reduction of the radioactivity. The technique is simple and safe for the patients.

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1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DIPOLE MOMENT AND CONFORMATION OF
3,5,DIBENZYLIDENE,TETRAHYDRO,4H,THIOPYRAN,4,ONE AND ITS 1,1,DIOXIDE -U-
AUTHOR--(04)-ARBUZOV, B.A., YULDASHEVA, L.K., ARSHINOVA, R.P., BALABANOVA,
F.B.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 448-50
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--DIPOLE MOMENT, SULFONE, IR SPECTRUM, BENZENE DERIVATIVE,
HETEROCYCLIC OXYGEN COMPOUND, KETONE, ORGANIC OXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0844 STEP NO--UR/0062/70/000/002/0448/0450
CIRC ACCESSION NO--AP0119748
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119748

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. CONDENSATION OF
TETRAHYDRO,4H,THIOPYRAN,4,ONE WITH BZH GAVE THE 3,5,DIBENZYLIDENE
DERIV., M. 150-1DEGREES, DIPOLE MOMENT 2.5 D. THE DIPOLE MOMENT OF ITS
SULFONE, M. 198-9DEGREES, WAS 3.55 D. THUS, BOTH ARE IN THE "ENVELOPE"
CONFORMATION, A CONCLUSION SUPPORTED BY IR SPECTRA. FACILITY:
KHIM. INST. IM. BUTLEROVA, KAZAN. GOS. UNIV. IM. UL'VANOVA, LENINA,
KAZAN, USSR.

UNCLASSIFIED

USSR

UDC: 542.91 - 547.781

AREUZOV, B.A., ZOBOVA, N.N., and BALABANOVA, E.B., Kazan' State University imeni V.I. Ul'yanov-Lenin, Kazan, Ministry of Higher and Secondary Specialized Education RSFSR

"Synthesis of 3-Benzoyl- and 3-Trichloroacetyl-2-imidazolidinones"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 70, pp 447-448

Abstract: Ethylenimine reacts energetically with benzoyl isocyanate and trichloroacetyl isocyanate at 0° in the absence of a catalyst to give the corresponding 3-benzoyl- and 3-trichloroacetyl-2-imidazolidinones. The composition and structure of the resultant adducts were confirmed by data from elementary analysis and IR spectra and by chemical transformations.

1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--RADICAL COPOLYMERIZATION OF TETRAFLUOROETHYLENE WITH ETHYLENE AND
HEXAFLUOROPROPYLENE -U-
AUTHOR-(03)-KABANKIN, A.S., BALABANOVA, S.A., MARKEVICH, A.M.
COUNTRY OF INFO--USSR *B*
SOURCE--VYSOKOMOL. SOEDIN., SER A 1970, 12(2), 267-72
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COPOLYMERIZATION, POLYTETRAFLUOROETHYLENE, ETHYLENE,
PROPYLENE, FLUORINATED ORGANIC COMPOUND, PHOTOPOLYMERIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/1197 STEP NO--UR/0459/70/012/002/0267/0272
CIRC ACCESSION NO--AP0104563

UNCLASSIFIED

2/2 020

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PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104563

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RELATIVE REACTIVITIES OF C SUB2 H SUB4 AND C SUB2 F SUB4 IN PHOTOINITIATED COPOLYMER. AT LOW PRESSURE ARE 0.38 AND 0.1 IN THE GAS PHASE AND 0.61 AND 0.024 IN (F SUB3 CCF SUB3) SUB3 N SOLN., RESP. THE DIFFERENCE IS ATTRIBUTED TO HETEROGENEITY OF THE MEDIUM. THE VALUES ARE USED TO PREP. C SUB2 H SUB4-C SUB2 F SUB4 COPOLYMER OF CONST. COMPN. RELATIVE REACTIVITIES OF C SUB2 F SUB4 AND HEXAFLUOROPROPYLENE ARE 3.5 AND 0, RESP., IN THE GAS PHASE.

1/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STUDY AND CALCULATION OF THE STRESSED STATE OF TRUCK WHEEL RIMS -U-
AUTHOR--EALABIN, I.V. *B*
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, AVTCMOBIL'NAYA PROMYSHLENNOST', NO 2, 1970, PP 17-20
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--CARGO TRUCK, BIBLIOGRAPHY, STRESS ANALYSIS, REINFORCED SHELL
STRUCTURE, COMPOSITE MATERIAL, ROAD WHEEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1219 STEP NO--UR/0113/70/000/002/0017/0020
CIRC ACCESSION NO--AP0123183
UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123183

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS GIVEN FOR CALCULATING TRUCK WHEEL RIMS. THE METHOD WAS DEVELOPED ON THE BASIS OF THE GENERALIZATION OF EXPERIMENTAL RESEARCH AND THE APPLICATION OF THE THEORY OF COMPOSITE AXISYMMETRIC SHELLS. A STRAIN ANALYSIS IS GIVEN ALONG WITH RECOMMENDATIONS FOR DECREASING WEIGHT AND INCREASING THE CARRYING CAPACITY OF RIMS.

UNCLASSIFIED

USSR

UDC 621.325.65:53.082.32

BALABIN, I. Ye., Engineer

"An Example of the Use of Pneumatic Computing Devices for Controlling Technical Processes"

Moscow, Pribery i sistemy Upravleniya, No. 4, 1971, pp 42-43

Abstract: An example is given of how mathematical problems can be solved by analog computers for the ultimate purpose of designing automatic control systems. The basis of this method of problem solving is that the interrelationships of the technical parameters and the corresponding output signals are determined from the characteristics of the transmitting sensors. The relationships thus found are then substituted into the equations connecting the parameters, and, on the basis of the newly obtained equation, the structure of the control system is developed and the numerical values of the coefficients are obtained. The example involves controlling the flow of one reagent into a chemical vessel in accordance with the flow and concentration of the second reagent. A block diagram of the control system evolved for this example is sketched, and the statistical characteristics, in which the sensor output signal is plotted as a function of measured parameter values, are given. It is stated that this example can be extended to more complex cases.

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UDC: 62-531

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NOVOSELOV, B. V., KOBZEV, A. A., GOROKHOV, Yu. S., BALABOLOV, G. A.,
and POTAPOV, A. M.

"Servo System of Combined Control"

USSR Author's Certificate No 280613, filed 30 May 69, published
1 Dec 70 (from RZh-Avtomatika, telemekhanika i vychislitel'naya
tekhnika, No. 12, 1971, Abstract No 12A167P)

Translation: The proposed device is distinguished from the known ones by its additional self-tuned block, whose output is connected to the inputs of both differentiators, one of the inputs being tied directly to the output of the first differentiator, the other being connected through a switch. Also, the system differs in that there is an additional connection to the output of the compensating device of the second low-frequency filter, and connected to its output is a third differentiator whose output is joined to the input of the switch; there is also a connection between the second differentiator of the compensating device and a relay block, with still another differentiator connected to its input. The differentiator input is tied to the output of the first differentiator. Resume

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Acc. Nr.

AP0053743

Abstracting Service:
CHEMICAL ABST.

6-20

Ref. Code

UR0080

B

✓ 112403b Kinetics of the extraction of a complex catalyst from polyethylene dispersions by water. ~~Balabudkin, M. A.~~ Baram, A. A. (Leningrad. Tekhnol. Inst. Tsellvul. Bum. Prom. Leningrad, USSR). ~~Zh. Prikl. Khim. (Leningrad)~~ 1970, 43(1), 176-7 (Russ). A simplified empirical equation was derived to describe the extrn. kinetics of a complex catalyst from powd. polyethylene. Thus, $\eta = \eta_m [1 - \exp(-(a + b\tau)\tau / (1 + \tau))]$, where η is the degree of extrn. at time τ , η_m is the max. degree of extrn., and a and b are exptl. consts. CKJR

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REEL/FRAME
19830804

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USSR

UDC: 771.5

BALABUKHA, N. A., KORNDORF, V. A., PAVLOVA, R. A., All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev

"A New Standard for the Method of Resolvometric Testing, and Modern Projection Resolvometers"

Leningrad, Issledovaniya v Oblasti Opticheskikh i Svetovykh Izmereniy, Trudy Metrologicheskikh Institutov SSSR, No 114(174), 1970, pp 96-103

Abstract: The article reviews the new State Standard GOST 2819-68 for the method of resolvometric testing of black-and-white and color photographic materials on a transparent base with a resolution of up to 1200 lines/mm. Resolvometric tests of photographic materials with resolutions up to 600 lines/mm should be done with a type OS-16 microscope objective with a number aperture of 0.3. Projection resolvometers type SR-17 and RP-2 are recommended for this resolution range. For testing high-resolution materials, a type OS-8 microscope objective should be used with a number aperture of 0.65 and a type RP-2M resolvometer. The types of presently used resolvometers and the RP-2M resolvometer are described, and the characteristics of the Ascheulov test transparencies used in the resolvometers are given. Fig. 7, bibl. 21.

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BALAFANOV, Ye.

COMPUTERS

SELF-MANAGING PROCESS DIRECT
31 AUG 71

UDC 687.513.5.681.3

71. USSR

BALAFANOV, Ye., KACHURINA, O. K., KIRDYASHKIN, A. P., KURBANOV, D., LYAN, E. N.,
USTINOV, V. A., TAZHINAYEV, B. B., TRET'YAKOV, V. V., and FIDOROV, V. V.

"The MS-1 Information Retrieval System"

Tr. In-ta Mat. i Mekh. AN KazSSR (Works of the Institute of Mathematics and Mechanics of the Academy of Sciences, Kazakh SSR), No 1, 1970, pp 393-398 (from R-Zh -- Informatika, No 4, Apr 71, Abstract No 71.4.169 (71R--1290))

Translation: An approach to the creation of a system for collection, storage, and processing of technological information from a controlled process is described. One variant of an information retrieval system is presented. It includes technical resources, the organization of information arrays in computer storage, and a complex of programs for processing information.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF THE THICKNESS OF A FILM OF ACTIVE COMPONENT ON THE
ACTIVITY OF VANADIUM CATALYSTS IN THE OXIDATION OF SULFUR DIOXIDE -U-
AUTHOR-(04)-BORESKOV, G.K., DZISKO, V.A., TARASOVA, D.V., BALAGANSKAYA,
G.P.
COUNTRY OF INFO--USSR **B**
SOURCE--KINET. KATAL. 1970, 11(1), 181-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CATALYST, SULFUR OXIDE, VANADIUM, CATALYTIC OXIDATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1459 STEP NO--UR/0195/70/011/001/0181/0186
CIRC ACCESSION NO--AP0120246
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120246

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OXIDN. OF SO SUB2 ON V CATALYST TAKES PLACE WITHIN THE FILM OF ACTIVE LIQ. CATALYST COMPONENT, CONTS. V SUB2 O SUB2 TIMES NK SUB2 O TIMES MSO SUB3 WHERE N EQUALS 2-4 AND M DEPENDS ON REACTION CONDITIONS AND ON THE N VALUE. THE THICKNESS OF THE ACTIVE CATALYST FILM AT WHICH THE OXIDN. GOES TO COMPLETION DEPENDS ON THE REACTION TEMP. AND THE COMPN. OF THE REACTION MIXT. AT LOWER TEMPS., THE CRIT. THICKNESS OF THE FILM DECREASES AND AT HIGHER TEMP. IT INCREASES. AT 420DEGREES, INCREASE OF CATALYTIC ACTIVITY WITH INCREASING K SUB2 O-V SUB2 O SUB5 MOLE RATIO OCCURS DUE TO AN INHIBITION OF SOLID PHASE CRYSTN. IN THE PRESENCE OF AN EXCESS OF K SUB2 O. IN ADDN. TO THIS, AT LOWER TEMP., REDN. OF V SUB2 O SUB5 TAKES PLACE TO A LESSER DEGREE. MAX. FILM THICKNESSES FOR REACTIONS AT 485 AND 420DEGREES ARE GIVEN. FACILITY: INST. KATAL., NOVOSIBIRSK, USSR.

UNCLASSIFIED

Genetics

USSR

UDC 547.963.3:616-006

GRIGOROVICH, N. A., and BALACOVSKAYA, Zh. M., Division of Special Methods of Treatment, Scientific Research Institute of Oncology and Medical Radiology, Ministry of Health BSSR, Minsk

"Comparison of the Effect of Blastomogenic Agents on the Genetic Apparatus of Animal Cells. I. The Effect of Various Kinds of Blastomogenic Agents on the Nucleotide Composition of DNA in Cells Sensitive to Them"

Leningrad, Tsitologiya, Vol 12, No 11, Nov 70, pp 1,433-1,438

Abstract: A study was made of the nucleotide composition of DNA isolated from certain mouse tissues, which are sensitive to blastomogenic agents, including ionizing radiation (spleen), estradiol monobenzoate (spleen). Rauscher virus (spleen), urethane (lungs), and carbon tetrachloride (liver). None of these agents caused any significant changes in the nucleotides studied. The results support the hypothesis that the transformation of normal cells into tumor cells is related to epigenomic phenomena rather than to the mutability of somatic cells.

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1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DNA NUCLEOTIDE COMPOSITION IN MAMMALS WITH VARYING SENSITIVITY TO
BLASTOMGENIC AGENTS -U-
AUTHOR-(02)-GRIGUROVICH, N.A., BALAGOVSKAYA, ZH.M.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(2), 174-6
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DNA, NUCLEOTIDE, LYMPHATIC SYSTEM, SPLEEN, MOUSE, HAMSTER,
GUINEA PIG, MONKEY, CARCINOGEN, ELECTROPHORESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/1652 STEP NO--UR/0250/70/014/002/0174/0176
CIRC ACCESSION NO--AT0133557
UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AT0133557
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NUCLEOTIDE COMPN. OF LYMPHATIC
NODES AND SPLEEN DNA FROM MOUSE, SYRIAN HAMSTER, GUINEA PIT, AND MONKEYS
(MACACA, PAPIO, CERCOPITHECUS) WAS DETD. BY PAPER CHROMATDG. COMBINED
WITH ELECTROPHORESIS, BUT THE CORRELATION OF THE DNA NUCLEOTIDE COMPN.
IN THESE MAMMALS AND THEIR SENSITIVITY TO THE BLASTOGENIC AGENTS WAS
NOT CONFIRMED.

UNCLASSIFIED

USSR

UDC: 533.601.1

AKHMEDOV, R. B., BALAGULA, T. B., RASHIDOV, F. K.

"Aerodynamics of Vortex Jet Near the Nozzle"

Tashkent, Izvestiya Akademii Nauk UzSSR, No. 2, 1971,
pp 53-57

Abstract: Results of theoretical and experimental investigation of vortex jets are presented. The vortex is produced by the vanes of a vortex generator.

The vortex jets are of interest because of their use in gas burners.

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USSR

AKHMEDOV, R.B., et al, Izvestiya Akademii Nauk UzSSR, No 2, 1971, pp 53-57

The differential equation of the total pressure versus distance from the axis is obtained by the method of heat transfer analogy. The general solution of this equation is given. The numerical values of the boundary conditions are obtained by making the theoretical and experimental peaks of the total pressure versus distance from axis curves to coincide. Above curves are given for 30° and 40° vortex angles and for several distances from the burner exit.

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- 29 -

1/2 033 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--DAMPING OF CRITICAL VIBRATIONS AND DIELECTRIC LOSSES IN
DISPLACEMENT TYPE FERROELECTRICS -U-
AUTHOR-(03)-BALAGUROV, B.YA., VAKS, V.G., SHKOVSKIY, B.I.
COUNTRY OF INFO--USSR **B**
SOURCE--FIZ. TVERD. TELA 1970, 12(1), 89-99
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--DIELECTRIC LOSS, ACOUSTIC DAMPING, PHONON INTERACTION, IDEAL
CRYSTAL, FERROELECTRIC CRYSTAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REF/FRAME--1980/0097 STEP NO--UR/0181/70/012/001/0019/0099
CIRC ACCESSION NO--AP0048389
UNCLASSIFIED

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033

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0048389

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR DISPLACEMENT TYPE FERROELECTS., ANHARMONIC DAMPING WAS CONSIDERED OF CRIT. VIBRATIONS WITH YIELDS K EQUALS 0 AND DIELEC. LOSSES AT TEMPS. ABOVE THE TRANSITION POINT. THE MAIN CONTRIBUTION TO LOW FREQUENCY DAMPING IS MADE BY INTERACTIONS OF CRIT. PHONONS WITH EACH OTHER AND WITH ACOUSTICAL PHONONS. EXPLICIT EXPRESSIONS ARE GIVEN FOR THE MOST IMPORTANT CONTRIBUTIONS TO DAMPING IN TERMS OF THE COEFFS. OF DIELEC. NONLINEARITY, ELECTROSTRICTION, AND THE PARAMETERS OF THE LOW FREQUENCY SPECTRA. IN THE IDEAL CRYSTALS CONSIDERED, THE CRIT. VIBRATIONS ARE ONLY WEAKLY DAMPED, AND LOSSES ARE SMALL. COMPARISON WITH EXPT. GIVES AGREEMENT WITH SRTIO SUB3 AND DOES NOT CONTRADICT THE DATA ON KTAO SUB3. IN BATIO SUB3, THE CALCD. DAMPING IS LESS THAN THE OBSD.

BALAGUROVA, YE. A.

SPES 59308

6-73

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XI-8. T-X PROJECTION OF THE PHASE DIAGRAM OF THE INAs-CdTe SYSTEM

[Article by Ye. A. Balagurova, G. I. Bushanova, A. A. Buzanov, L. P. Khud-
kov, Irkutsk Novosibirsk, III Symposium on Protoplasma Kozla I Siberia Polun-
kovskiyevskiy Kizilayev I Pioner, Moscow, 12-17 June 1972, P. 132]

The method of differential thermal analysis was used to construct the
T-X projection of the diagram of state of the InAs-CdTe system. The system
is of the eutectic type. The eutectic point corresponds to a composi-
tion of 33 ± 2 mol.% CdTe at $874 \pm 2^\circ\text{C}$. The solid solution region reaches
30 mol.% CdTe at the eutectic temperature. By using the liquidus curve and
data from the Bridgman method, it is possible to determine the position
of the solidus in the system. The composition of the solid phase along the
bars determined from the value of the crystal lattice period gives the
on the liquidus curve for the given liquidus temperature. In addition, the
solidus points were determined for temperatures of 796, 528 and 845°C with
the help of x-ray phase analysis and determination of the microhardness.
The results of the analysis coincide within the limits of the experiment.

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SYNTHESIS AND SOME PROPERTIES OF K SUB4 TH(HPO SUB4) SUB2 NEGATIVE
(C SUB2 O SUB4) SUB2 .6H SUB2 O -U-
AUTHOR-(03)-MOLODKIN, A.K., BALAKAYEVA, T.A., KUCHUMOVA, A.N.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1152-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ABSORPTION BAND, CHEMICAL SYNTHESIS, POTASSIUM COMPOUND,
PHOSPHOROUS COMPOUND, IR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1085 STEP NO--UR/0078/70/015/004/1152/1153
CIRC ACCESSION NO--AP0123078
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123078

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. WHEN K SUB3 PD SUB4 .7H SUB2 O WAS ADDED TO AN AQ. SOLN. OF K SUB4 TH(C SUB2 O SUB4) SUB4 FINE CRYST. K SUB4 TH(HPO SUB4) SUB2 (C SUB2 O SUB4) SUB2 .6H SUB2 O (I) SEPD., WITH N GAMMA 1.537 AND N ALPHA 1.525. ON HEATING, I LOST H SUB2 O AT SIMILAR 170DEGREES AND THEN H SUB2 O AND CO AT SIMILAR TO 170-400DEGREES TO GIVE TH(HPO SUB4) SUB2 AND K SUB2 CO SUB3. I HAS BIDENTATE C SUB2 O SUB4 PRIME2 NEGATIVE GROUPS AND ITS IR SPECTRUM SHOWS A SPLIT PD SUB4 PRIME3 NEGATIVE ABSORPTION BAND AT 900-1100 CM PRIME NEGATIVE1. FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 772.9:535.41

BALAKHANOV, V. Ye., ZHIVOTOV, V. K., TITOV, A. V.

"Using Holographic Fourier Spectroscopy for Analyzing the Spectrum of Micro-wave Emission"

Moscow, Priory i Tekhnika Eksperimenta, No 3, May/Jun 72, pp 146-150

Abstract: The paper describes analyzers for studying pulse emission in the millimeter and centimeter wave bands. The analyzers are based on methods of holographic Fourier spectroscopy. The operating principles are described, and quasioptical, semi-quasioptical and waveguide modifications of the basic instrument are presented. An analyzer operating simultaneously in waveguide and quasioptical modes covers the wave band from 6 to 12 mm and has a spectral resolution of $\sim 1/10$ of a wavelength with a time constant of 0.3 μ s. The authors thank V. D. Rusanov for continuous interest and assistance with the work.

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USSR

UDC: 621.317.757

BALAKHANOV, V. Ya. and ZHIVOTOV, V. K.

"Spectrum Analyzer for Investigating Plasmas in the UHF Range"

Kiev, Izvestiya VUZ--Radioelektronika, Vol 13, No 11, 1970, pp 1291-1296

Abstract: This article discusses problems of the design of a spectrum analyzer for measuring plasma radiation close to the Langmuir frequencies. Such measurements are of interest in diagnostics and general plasma theory with nonlinear effects taken into account. The analyzer dealt with here is designed for measuring spectra within broad limits, of the order of octaves, and hence need not have high spectral resolution. As the basis of their design, the authors use the principle of holographic Fourier spectroscopy in the optical and quasi-optical ranges. The basic schematic of the analyzer is shown; its detectors, set along the longitudinal axis of a rectangular waveguide, measure the electric field of the electromagnetic waves to be analyzed. The latter are admitted into the waveguide and are reflected at its closed end to produce interference effects. The results of experiments conducted with an analyzer of this design are given, and it is concluded that it is fully acceptable for plasma work.

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USSR

UDC 536.248.2

BALAKHONOVA, V. I., NOVIKOV, P. A., SUBACH, V. M.

"Influence of Mass Transfer on Heat Transfer During Evaporation of Liquid with an Open Surface into a Rarefied Gas Medium"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol. 20, No. 3, Mar. 71, p. 405-410.

Abstract: The process of evaporation of a liquid from an open surface is studied for an ambient pressure of $1.33 \cdot 10^3$ and $2.67 \cdot 10^3$ n/m². An experimental investigation is performed to establish the mechanism of the influence of mass transfer on heat transfer during evaporation under free convection conditions. The experiments indicated that blowing of a gas into the boundary layer at first causes an increase in the heat transfer coefficients for low flow rates of gas injected, then with increasing flow rate, the coefficient of heat transfer begins to drop. Thus, the formation of the new phase occurs differently, depending on the relationship of the velocities.

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USSR

UDC 669.715:669.046.54/55

YAKOVLEV, V. I., BALAKHONTSEV, G. A., BONDAREV, B. I., SHVETSOV, I. V., and
CHEREPOK, G. V.

"Effect of the Refining and Casting Technology on the Quality of Ingots and
Semifinished Goods"

Moscow, Tsvetnyye Metally, No 1, Jan 74, pp 64-67

Abstract: A comparative study of the properties of metals produced by different refining methods was carried out by processing statistical data on the results of the macrocontrol of ingot samples. It is shown that traditional refining methods provides nearly the same purity level in H content and other inclusions. The contradiction of this finding with the results of other researchers is explained. The effect of the casting technology on the purity of the metal was investigated on ingots of D1 alloy, 540 mm in diam. The results show a linear dependence of porosity on the H content. The volume of porosity in the ingots determines their disposition to stratification under deformation. To retain the fine-crystalline structure of the ingot and to eliminate stratification in stamping, the use of evacuation in the mixer has to match the modification of the melt. Five figures, one table, five bibliographic references.

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- 4 -

USSR

UDC 669.71.042.6

BALAKHONTSEV, G. A., ZINOV'YEV, V. K.

"Structure and Properties of Ingots during Crystallization in an Electromagnetic Field"

Metalloved. splavov legkikh met. -- V sb. (Physical Metallurgy of Alloys of Light Metals -- collection of works), Moscow, Nauka Press, 1970, pp 108-112 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G182)

Translation: A new method of casting Al alloys and alloys based on Al in an electromagnetic field is described briefly, and data are presented on the structure and properties of the ingots cast by the indicated procedure. There are 4 illustrations, 2 tables, and a 6-entry bibliography.

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- 11 -

USSR

UDC 669.71.042.62

BALAKHONTSEV, G. A., ANDREYEV, V. F., DEYATKIN, A. B., TEMNIKOV, A. V.,
SHADRIN, G. G.

"Selection of Height of the Direct Cooling of an Ingot With Water During Continuous Casting With Blowing"

Tekhnol. Legkikh Splavov. Nauchno-tekhn. Byul. VILSa [The Technology of Light Alloys, Scientific and Technical Bulletin of the All-Union Institute of Light Alloys], 1970, No. 5, pp 9-12. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G135 by S. Krivonosova).

Translation: In order to determine the optimal height of the cooling band, electric modeling of the temperature fields in an ingot 720 mm in diameter was performed with a casting rate of 20 mm/min, using type-D16 alloy. Modeling was performed using a quasi-analog method, allowing both conductive heat transfer and heat transfer due to movement of the body (convection) to be considered. The optimal water blowing height was found to be 160 ± 10 mm. However, the desired parameter is rigidly related to the quantities which determine it. For example, a change in blowing height by 20 mm changes the surface temperature from 50 to 150°. Therefore, when a new technology is being introduced, preliminary investigation of the process with the electric model is required. 4 figs.

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Foundry

USSR

UDC 669.716:621.74.01:548.5

BALAKHONTSEV, G. A., and ZINOV'YEV, V. K.

"The Structure and Properties of Ingots with Crystallization in an Electromagnetic Field"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970, pp 108-112, resume

Translation: A brief description is presented of a new method of casting ingots in an electromagnetic field. Data on the structure and properties of ingots cast by the method are given. Four figures, two tables, six bibliographic references.

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USSR

UDC 547.26'118

YELEPINA, L. T., BALAKHONTSEVA, V. N., and NIFANT'YEV, E. Ye., Moscow State University Imeni M. V. Lomonosov, and All Union Scientific Research Institute of the Biosynthesis of Protein Substances

"Phosphorylation of Xylitol With Phosphonous Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1811-1816

Abstract: Reaction of xylitol with phosphonous acids and their esters yielded only 1,4-anhydroxylitol phosphonites, while the hexitols produced noncyclic hexitol phosphonites and phosphonites of their anhydrides. On storage the noncyclic phosphonites of pentitols and hexitols are cyclized forming monoanhydrides and phosphonous acid. Hexitol phosphonites are more stable than xylitol phosphonites. Phosphorylation of polyols occurs in three stages: phosphorylation of the starting polyol, cyclization of the phosphorylated polyol to 1,4-anhydride and phosphorylation of the anhydride.

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USSR

UDC 547.26'118

NIFANT'YEV, E. Ye., YELEPINA, L. T., and BALAKHONTSEVA, V. N., Moscow State University Imeni M. V. Lomonosov and All Union Scientific Research Institute of the Biosynthesis of Protein Substances

"Oxidative Intramolecular Phosphorylation of Xylitane Phosphonites"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 4, Apr 73, pp 946-947

Abstract: On storage the xylitane phosphonite undergoes oxidative-reductive intramolecular phosphorylation forming xylitane cyclophosphonate. The isolated 3,5-cyclononylphosphonate of xylitane, m.p. 114° was also synthesized by an independent synthesis.

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UDC 547.26'118

USSR

NIFANT'YEV, E. YE., YELEPINA, L. T., BALAKHONTSEVA, V. N.; Moscow State University imeni M. V. Lomonosov; All-Union Scientific Research Institute of Biosynthesis of Protein Substances

"Phosphorylation of Xylitol with Phosphonous Acids and Their Monoesters"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 7, Jul 72, pp 1480-1485

Abstract: The paper presents the first results of a systematic study of phosphites and phosphonites of pentitols. Xylitol was phosphorylated with phosphonous acids and their acid esters. It was found that heating xylitol with alkyl phosphonous acids and their monoesters yields 5-alkyl phosphonites of the polyhydric alcohol. These phosphonites are readily hydrolyzed by bases, and undergo disproportionation. A method was developed for isolating the individual alkylphosphonous acids.

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- 35 -

Organometallic Compounds

UDC 547.26'118

USSR

NIFANT'YEV, E. Ye., YELEPINA, L. T., and BALAKHONTSEVA, V. N., Moscow State University imeni M. V. Lomonsov

"Phosphorylation of Xylitol"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 3, Mar 71, pp 707-708

Abstract: Reaction of xylitol with phosphorous, hypophosphorous, and phosphonous acids is a complex reaction accompanied by dehydration of xylitol: xylitane is formed under all temperature conditions studied, at 80° a small yield of xylite phosphonites is obtained, and at higher temperatures high yields of xylitane phosphonites are obtained. Xylitane phosphonites disproportionate on storage giving xylitane diphosphonites and xylitane.

1/1

USSR

UDC 546.718

SPITSYN, V. I., KUZINA, A. F., TSARENKO, A. F., ORLOVA, A. A., BALAKHOVSKIY, O. A., KODOCHIGOV, P. N., GLAZUNOV, M. P., and KAYMEN, I. V.

"Synthesis of Metallic Technetium and its Physical Investigations"

Leningrad, Radiokhimiya, Vol 12, No 4, 1970, pp 617-621

Abstract: Highly pure metallic technetium in the form of a silver-gray powder or compact metal (regulus) was produced from tetraphenylarsonium pertechnate $(C_6H_5)_4AsTeO_6$ by hydrogen reduction in an electric furnace. The resultant material showed superconductivity with a critical point of 8.2°K. A study of the technology for producing the metal from the initial pertechnate showed that technetium dioxide is produced after one hour in a hydrogen atmosphere at 260°C, and the metal is produced at a temperature of 1000°C. X-ray structural analysis revealed that metallic technetium has a hexagonal lattice with dense atomic packing of the magnesium type, the lattice parameters being $a = 2.74 \pm 0.005$ and $c = 4.41 \pm 0.005$; $c/a = 1.609$. The radiometric and neutron activation methods of analysis showed extremely minute quantities of trace impurities: Ru-- 10^{-8} , Rh-- 10^{-14} , Al-- 10^{-5} , Na-- 10^{-3} and As-- 10^{-3} gm per gm of technetium. Within the limits of sensitivity of the neutron activation method, no other impurities were detected.

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USSR

UDC 620.193.5

BALAKIN, E. I., ZHUK, N. P., MEYERSON, G. A., OFARA, B. K., and PASHKOVA, O. A.,
All Union Scientific Research Institute of Hard Alloys, Moscow Institute of Steel
and Alloys

"The Method of Producing Ni + ThO₂ Composites and Its Hardening Oxide Content
and Their Effect on Heat Resistance"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya,
No 3, 1973, pp 130-133

Abstract: The heat resistance of Ni with 2, 3.5, and 4.5% by vol ThO₂ was investigated on specimens of dispersion-hardened Ni produced by the method of joint precipitation of Ni and Th from its salt solutions (1) and by the method of precipitation of Ni salt on particles of preliminarily prepared ThO₂ sol (2). Subsequently, the mixes of precipitates were subjected to filtration, drying, and NiO calcination up to Ni in a hydrogen stream followed by compression of the powder-like material and burning of the bruquettes. The baked billets were hot-extruded at 1000° in one operation with 94% reduction. The composition Ni+3.5% by vol ThO₂ produced by method 1 was found to possess a heat resistance 1.1-2.0 times higher than the same composition produced by method 2. The stability decrease of ThO₂ in Ni with increasing temperature is demonstrated. Method 2,
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USSR

BALAKIN, E. I., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 3, 1973, pp 130-133

characterized by a slowly developing process of coagulation, is recommended as the most effective method from the standpoint of heat resistance. Two figures, six bibliographic references.

2/2

USSR

UDC 681.3

BALAKIN, V. B., SAVINKOV, V. M., TSAL'P, V. D.

"Collected Programming Exercises"

Sbornik Uprazhneniy Po Programirovaniyu, [English Version Above], Moscow, Vyssh. Shkola Press, 1970, 463 pages, (Translated from Referativnyy Zhurnal Kibernetika, No. 5, 1971, Abstract No. 5V595 K).

No Abstract.

1/1

BALAKIN, V.B.

RND/18-760/15-11-72
Doc 112

Balakin, V. B., and V. V. Butanov. Numerical solution to a problem on shock wave interaction with a cylinder in supersonic flow. Izv. Akad. Nauk SSSR, Mekh., no. 6, 1971, 1033-1039. (RZhMekh, 5/72, no. 5B127)

A difference scheme of a second order of exactness is proposed for the calculation of the axisymmetric unsteady flow of an ideal gas. A numerical solution is obtained to the problem of a shock wave impacting a cylinder in supersonic flow. In the first stage of solution, the problem of streamline flow is solved by the method of adjustment. In the second stage the problem of shock interaction is solved. Paired pressure values were calculated for regimes with Mach numbers within the range of 1.5 to 5.

Antonova, A. M. High speed gas flow around a slender three-dimensional body. Trudy II Respublikanskoy konferentsii po aerodinamike, teplotnemu i masovomu. Seksiya "Aerodinamika teplotnogo i masovogo". Kiyev, Kiyevskiy universitet, bol'shikh skorostey, 1971, 99-102. (RZhMekh, 5/72, no. 5B340)

A formulation of the problem of flow around a slender body by a hypersonic gas is described. Within hypersonic theory of small perturbations, the problem can be reduced to the solution of a quasi-linear second-order equation in terms of partial derivatives of the hyperbolic type for a flow function in a plane of similarity variables. An iteration method of solving a Cauchy problem for this equation is proposed which reduces to an inverse problem for the flow around a slender pointed body with an attached shock wave.

AT0032097

NUCLEAR SCI. ABST. 2-70

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B

6679 (SLAC-Trans-105) PRELIMINARY RESULTS OF A STUDY OF THE ρ -MESON RESONANCE USING COLLIDING ELECTRON-POSITRON BEAMS. Balekin, V. E.; Budker, G. I.; Korshunov, Yu. V.; Mishnev, S. I.; Pakhtusova, E. V.; Pestov, Yu. N.; Simakov, V. A.; Skrinskii, A. N.; Tumaikin, G. I.; Khabakhpashiev, A. G. (Akademiya Nauk SSSR, Novosibirsk, Institut Yadernoi Fiziki). Translated by T. Watt for Stanford Linear Accelerator Center, Calif., from Russian Preprint No. 327. 12p. Dep. CFSTI.

The results are reported of a preliminary analysis of approximately 100,000 photographs from a spark-chamber study of the ρ -meson, using the electron-positron storage ring VEPP-2. The measurements were carried out for nine energy values between 508 and 514 MeV. Two types of events were analyzed: elastic electron-positron scattering and charged kaon pair production. A least-squares fit of the results to the Breit-Wigner curve yielded the following values for the resonance parameters: $\Gamma = 4.1 \pm 0.5$ MeV and $\sigma_0 = 2.3 \pm 0.3 \mu b$. The total resonance cross section for the formation of the ρ -meson was found to be $6p = 4.8 \pm 0.6 \mu b$. (L.B.S.)

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19700283

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USSR

UDC 621.791.1:621.574

KHRENOV, K. K., BALAKIN, V. I., MNISHENKO, I. A., and SERGEYEVA, YU. A., Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences Ukrainian SSR; BERSUDSKIY, S. YU., and CHERNYAK, G. I., Minsk Plant of Refrigeration Units

"Cold Welding of Copper and Aluminum Tubing"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 70, pp 49-50

Abstract: A new welding technology is described for aluminum and copper tubing. For aligning the mechanical properties of both aluminum and copper tubing, the latter was annealed at 600 to 800° C for 20-30 minutes up to the point of removing the work hardening. A microstructural examination of the joints performed by cold welding failed to reveal any flaws. Copper appears to preserve its coarse-grained structure (acquired after annealing) almost up to the very line of the copper-aluminum interface. The grains were slightly stretched in the direction of the metal flow. Specimens of pipes welded by the new method were mounted in two refrigeration units and subjected to laboratory tests for prolonged vibration and transportability. The continuous action of vibration damaged the condensers but failed to affect the strength of the welded joints.

1/1

USSR

UDC: 621.73.043

OKHRIMENKO, Ya. M., SMIRNOV, O. M., BALAKIN, V. P., BOYTSEKHOVSKIY, V. A.,
SHKLYAYEV, V. Ye.

"Process of Production of Long-Axis Forgings by Extension in the Superplastic State"

Kuznechno-Shtampovochnoye Proizvodstvo, No 1, Jan 73, pp 7-10.

Abstract: A process of monaxial form change in the state of superplasticity, the relationship between initial and final dimensions of the piece, kinematic plans of experimental installations and the dependence between the primary parameters of the process in the initial and stable stages are studied. The conditions of development of the state of superplasticity are also studied. Examples of products produced by this method are presented and the advantages and disadvantages are noted.

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1/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SYNTHESIS OF SUBIC ACID FROM KETENE AND CROTONALDEHYDE. VIII.
THERMAL ISOMERIZATION OF A POLYESTER OF 3-HYDROXYHEXENOIC ACID AND ITS
AUTHOR--(C4)--POLYANSKIY, N.G., UTKIN, B.N., KOZLOVA, G.YA., BALAKIN, V.S.

COUNTRY OF INFO--USSR

SOURCE--Zh. Prikl. Khim. (Leningrad) 1970, 43(5), 1095-100

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ISOMERIZATION, POLYESTER RESIN, DEPOLYMERIZATION, CARBOXYLIC
ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1955

STEP NO--UR/0080/70/043/005/1095/1100

CIRC ACCESSION NO--AP0132216

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132216

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE DEPOLYMN. OF THE TITLE
POLYESTER (H. G. POLYANSKII ET AL., 1966) OVER NaOH, KOH, OR BA(OH) SUB2
AT SIMILAR TO 180DEGREES GAVE GREATER THAN OR EQUAL TO 69PERCENT
TRANS-TRANS-ISOMER OF MECH:CHCH:CHCO SUB2 H (I). THE REACTION MIXT.
ALSO CONTAINED ACOH, PIPERYLENE, ACETONE, CROTONALDEHYDE, AND CO SUB2.
AL SUB2 O SUB3, NA SUB2 SO SUB4, OR K SUB3 (FE(CN) SUB6) WERE NOT ACTIVE
AS THE CATALYSTS.

UNCLASSIFIED

USSR

BALAKIN, V. YE., BUKIN, A. D., KURDADZE, L. M., ONUCHIN, A. P., PAKHTUSOVA, YE. V., SEREDNYAKOV, S. I., SIDOROV, V. A., and KHABAKHPASHEV, A. G., Institute of Nuclear Physics of the Siberian Department of the Academy of Sciences USSR

"Observation of Double e^+e^- -Pair Production"

Moscow, Yadernaya Fizika, Vol 16, No 4, 1972, pp 729-733

Abstract: The article describes results of the first experiments (in 1969 and 1970) on the observation of the process of the double pair production of the electron-positron pairs $e^+e^- \rightarrow e^+e^- + e^+e^-$ on a VEPP-2 positron-electron accelerator ring. Papers on this work were presented in 1971 at international conferences in Amsterdam and Cornell. The cross-section of the process for large angles of emission for the produced particles was measured. The experimental results were found to be in agreement with the theoretical calculations of V. N. BAYYER and V. S. FADIN.

The authors thank V. N. BAYYER and V. S. FADIN for discussions.

1/1

BALAKIN, Ye. I.

HEAT RESISTANCE OF PRECIPITATION-HARDENED STEEL

UDC 620.191.1

Article by Ye. I. Balakin, Ye. Ye. G. A. Mironov, B. E. Odnok and D. A. Ponomarev, Department of Engineering, Moscow Institute of Steel and Alloys, Otkrytiye, Leningrad, 193601, USSR. Published in *Engineering Materials*, Moscow, No. 1, 1971, submitted in June 1970, pp. 101-105.

The conclusions found in literature data on the resistance of precipitation-hardened materials reduce the practical significance of these data and hamper understanding of the oxidation mechanism of these materials. On the basis of these data it is still not possible to foresee the effect of heat-resistance changes in pickled white hardening it with different oxides. Table 1 gives the materials and their characteristics as investigated in this work.

Table 1. Composition and characteristics of initial materials.

(a) Material	(b) Chemical composition, %		(c) Mechanical properties		(d) Heat treatment		(e) Oxidation resistance	
	C	Cr	σ _{0.2} , MPa	σ _{0.1} , MPa	Temperature, °C	Time, h	Weight loss, %	Surface area, cm ²
1	0.15	0.05	400	300	600	100	0.1	100
2	0.15	0.05	400	300	600	100	0.1	100
3	0.15	0.05	400	300	600	100	0.1	100
4	0.15	0.05	400	300	600	100	0.1	100
5	0.15	0.05	400	300	600	100	0.1	100
6	0.15	0.05	400	300	600	100	0.1	100
7	0.15	0.05	400	300	600	100	0.1	100
8	0.15	0.05	400	300	600	100	0.1	100
9	0.15	0.05	400	300	600	100	0.1	100
10	0.15	0.05	400	300	600	100	0.1	100
11	0.15	0.05	400	300	600	100	0.1	100
12	0.15	0.05	400	300	600	100	0.1	100
13	0.15	0.05	400	300	600	100	0.1	100
14	0.15	0.05	400	300	600	100	0.1	100
15	0.15	0.05	400	300	600	100	0.1	100
16	0.15	0.05	400	300	600	100	0.1	100
17	0.15	0.05	400	300	600	100	0.1	100
18	0.15	0.05	400	300	600	100	0.1	100
19	0.15	0.05	400	300	600	100	0.1	100
20	0.15	0.05	400	300	600	100	0.1	100

Key: a--Material

b--Content of hardening oxide, volume %

c--Rotative density, g/cm³

d--Quantity of particles (N) with size (N)

e--Average distance between particle centers, microns

f--Less than

g--Greater than

h--Average particle size, μ

YAS 5800
1540213 (5)

1/2 035 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--IR SPECTROSCOPIC STUDY OF THE DECARBOXYLATION OF PENTAFLUOROBENZOIC
ACID -U-
AUTHOR--PETROV, A.K., BALAKINA, G.G. *B*
COUNTRY OF INFO--USSR
SOURCE--IAVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR, NO 2, SERIYA
KHIMICHESKIKH NAUK 1970, NR 1, PP 160-163
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--DECARBOXYLATION, FLUORINATED ORGANIC COMPOUND, BENZOIC ACID,
REACTION KINETICS, ACTIVATION ENERGY, IR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/1765 STEP NO--UR/0289/70/000/000/0160/0163
CIRC ACCESSION NO--AP0100345
UNCLASSIFIED

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035

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0100345

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF THE
DECARBOXYLATION OF PENTAFLUOROBENZIC ACID HAS BEEN STUDIED AT
TEMPERATURES ABOVE 200DEGREESC. THE ACTIVATION ENERGY IS 25 KCAL-MOLE.
THE DECARBOXYLATION WAS PERFORMED IN THERMOSTATED GAS CELL WITH GLASS
WALLS; IN THE COURSE OF THE REACTION, IR SPECTRA WERE MEASURED AT TIME
INTERVALS. THE REACTION IS HETEROGENEOUS. IT IS OF ZERO ORDER AND
PROCEEDS ON SURFACE OF GLASS. IN THE PRESENCE OF POTASSIUM FLUORIDE,
THE DECARBOXYLATION PROCEEDS VIA DECOMPOSITION OF PENTAFLUOROBENZOATE
ANION.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--STRUCTURE OF CAST CARBON STEEL CONTAINING NIOBIUM -U-
AUTHOR-(03)-MALINCHKA, YA.N., KOVALCHUK, G.Z., BALAKINA, N.A.
COUNTRY OF INFO--USSR
SOURCE--METALLOVEDENIE I TERM. OBRABOT. METALLOV, 1970, (3), 58-59
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CARBON STEEL, CAST STEEL, NIOBIUM CONTAINING ALLOY, GRAIN
SIZE, CARBIDE, EUTECTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0927 STEP NO--UR/0129/70/000/003/0053/0059
CIRC ACCESSION NO--AP0133016
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133016

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF TRACES OF NB ON THE STRUCTURE OF CAST C STEEL WAS STUDIED. THUS THE ADDITION OF NB REDUCED THE GRAIN SIZE, PREVENTED GRAIN GROWTH AT HIGH TEMP., AND RAISED THE SOFTENING TEMP. AND HEAT RESISTANCE. IN HYPOEUTECTOID STEELS CONTG. NB GREATER THAN 0.1PERCENT A CARBIDE EUTECTIC OF THE AUSTENITE-NBC TYPE FORMED BETWEEN THE BRANCHES OF THE DENORITES. THE FORMATION OF THIS EUTECTIC WAS PARTICULARLY PROMOTED BY REDUCING THE COOLING RATE AND INCREASING THE C CONCENTRATION. THE PRACTICAL IMPORTANCE OF THIS AND RELATED EFFECTS IS CONSIDERED.

UNCLASSIFIED

BALAKINA, V. S.

SO: JPRS 54019
16 035
9 SEP 71

UIC: 617-501-0416; R. 562

QUALITY CONTROL OF 'SUNNY TREASURE'

Article by I.A. Bolotova, Leningrad Scientific Research Institute of Pharmacology and Therapeutics, Part 2, P. Veden (Professor V.Z. Bolotina, Leningrad, 30.1.1971, 455 lines).

[illegible]

In 1936, the Journal of the Research Institute of Pathology published a paper by W. A. Trendelenburg. In his search for the most effective and reliable means of quality of patient treatment in injury cases presented a table, which he based on repeat evaluation of body temperature, $^{37.0^{\circ}\text{C}}$ being considered a favorable sign for the quantitative expression of such condition. This system became popular in forensic medicine. Later on we learned from the results of treatment cases, that an analysis not only for determination of autophant translational case, but also for the determination of the results of therapeutic activity, on the treatment of patients, and on the results of therapeutic activity.

We submit the results of a further evaluation of the series of benzene-treated patients, including 100 patients, 66.9 percent of whom had been treated for 10 years or more. The average age of the patients at the time of diagnosis was 46.7 years (SD, 7.9). The patients were followed for an average of 10.2 years (SD, 2.9). At the time of evaluation, 115 patients had died, 20 to 29 years after diagnosis, 44 to 49 years after diagnosis, 20 to 24 years after diagnosis, 14 to 19 years after diagnosis, 10 to 14 years after diagnosis, 6 to 9 years after diagnosis, and 5 years after diagnosis.

On the basis of the above results, the relative difference (Table 1),

in 1900, 66.2 percent were children of white and foreign-born parents, and 13.5 percent had no foreign birth. In 1900 there was prevalence of racial

1/2 028 UNCLASSIFIED PROCESSING DATE--19SEP70
TITLE--EQUILIBRIUM COMPOSITION OF PHASES FORMED DURING THE REDUCTION OF
COPPER(II) FERRITE CU SUB0.5 FE SUB 2.5 O SUB4 -U-
AUTHOR--(04)-ZALAZINSKIY, A.G., BALAKIREV, V.F., CHEBOTAYEV, N.M.,
CHUFAROV, G.I. *B*
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 162-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--COPPER COMPOUND, FERRITE, IRON OXIDE, HYDROGEN, X RAY
ANALYSIS, PHASE ANALYSIS, SPINEL, METAL REDUCTION, VACUUM TECHNIQUE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/0165 STEP NO--UR/0363/70/006/001/0162/0163
CIRC ACCESSION NO--AP0054961
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054961

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CU SUB0.5 FE SUB2.5 O SUB4 WAS PREPD. BY THE CERAMIC SINTERING OF AN EQUIMOLAR RATIO OF CU SUB2 O AND FE SUB2 O SUB3 IN AIR AT 1040DEGREES FOR SEVERAL DAYS WITH SUBSEQUENT QUENCHING IN WATER. THE H REDN. WAS CARRIED OUT IN A VACUUM INDUCTION SETUP AT 1000DEGREES. IN THE 1ST REDN. STAGE (0-6.5PERCENT), A DECREASE IN THE EQUIL. O PRESSURE IS OBSD. THE PARAMETER OF THE SPINEL PHASE DECREASES (8.414-8.403 ANGSTROM). X RAY PHASE ANAL. SHOWS THAT THE RHOMBOHEDRAL PHASE, CUFE SUB2, PPTS. OUT WITH INCREASED REDN., WHICH IN TURN CAUSES ENRICHMENT OF THE SPINEL PHASE BY MAGNETITE, AS WELL AS A DECREASE IN THE LATTICE PARAMETER. IN THE 2ND REDN. STAGE (6.5-12.3PERCENT), THE CUFE SUB2 REDUCES TO CU AND THE (CU SUB0.5 FE SUB2.5 O SUB4) SUB0.30(Fe SUB3 O SUB4) SUB0.70 SOLID SOLN. SPINEL, THE LATTICE PARAMETER OF WHICH IS 8.403 ANGSTROM. THE CONC. DEPENDENCE OF THE LATTICE PARAMETER IN THE BINARY (CU SUB0.5 FE SUB2.5 O SUB4) SUBL NEGATIVEX TIMES (FE SUB3 O SUB4) SUBX SOLID SOLN. FORMING DURING THE REDN. PROCESS WAS OBTAINED. THE SLIGHT DEVIATION FROM VEGARD'S LAW IS PROBABLY CAUSED BY THE DIFFERENT TYPES OF SPINEL STRUCTURE.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--REDUCTION OF THE CUBE SUB2 O SUB4 -CUCR SUB2 O SUB4 SOLID SOLUTION
-U-
AUTHOR--(04)-ZALAZINSKIY, A.G., BALAKIREV, V.F., CHEBOTAYEV, N.M.,
CHUFAROV, G.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1183-
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SOLID SOLUTION, CHEMICAL REDUCTION, CRYSTAL STRUCTURE, COPPER
COMPOUND, FERRITE, CHROMATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--3006/1411 STEP NO--UR/0078/70/015/005/1183/1185
CIRC ACCESSION NO--AP0135085
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135085

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REON. OF CUFE SUB1.75 CR SUB0.25 O SUB4 (SOLID. SOLN. OF TE CUFE SUB2 O SUB4 -CUCR SUB2 O SUB4 SYSTEM) IN H ATM. AT 1000DEGREES GAVE CU, FE, AND FE₂CR SUB2 O SUB4. THE REACTION PROCEEDED IN 7 STAGES WITH THE FORMATION OF TRIGONAL CUMU SUB2 (M EQUALS FE, CR) HAVING CRYST. LATTICE PARAMETERS A 3.028 PLUS OR MINUS 0.005 AND C 17.09 ANGSTROM AND SOLID SOLNS. (CU SUB0.5 FE SUB2.5 O SUB4) SUB1(2.5-Y)-2.5.(CU SUB0.5 CR SUB2.5 O SUB4) SUB(Y-2.5) AND (FE SUB3 O SUB4) SUB0.8.(FE₂CR SUB2 O SUB4) SUB0.2 AS THE INTERMEDIATE SPECIES. THE RESULTS ARE ANALOGOUS TO THOSE OBTAINED FOR REON. OF CUFE SUB1.75 AL SUB0.25 O SUB4. FACILITY: SVERDLOVSK. INST. MET., SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--REDUCTION OF A MGFE SUB2 O SUB4, MGV SUB2 O SUB4 SOLID SOLUTION -U-

AUTHOR--(04)--PISMENSKAYA, G.M., BALAKIREV, V.E., POPOV, G.P., CHUFAROV,
G.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(3), 9-12

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--IRON OXIDE, MAGNESIUM COMPOUND, VANADATE, VANADIUM COMPOUND,
METAL REDUCTION, SOLID SOLUTION, X RAY DIFFRACTION, HYDROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0722

STEP NO--UR/0148/70/013/003/0009/0013

CIRC ACCESSION NO--AT0121381

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0121381

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REDN. BY H OF THE MG_{0.25}FE
SUB_{1.75}O SUB₄ SOLID SOLN. OBTAINED FROM THE OXIDES WAS STUDIED BY X RAY
DIFFRACTION AT 1000DEGREES. THE PLOT OF THE PARTIAL EQUIL. O SUB₂
PRESSURE VS. THE PERCENT REDN. SHOWED 2 BRANCHES CORRESPONDING TO SPINEL
AND OXIDE PHASES AT SMALLER THAN OR EQUAL TO 33.4PERCENT OF REDN., AND
TO MG_{0.25}FE SUB_{1.75}O SUB₄, FE, AND MG SUB_xFE SUB_{1-x}O PHASES AT HIGHER STAGES
OF REDN. THE AMT. OF FE SUB₃O SUB₄, FORMED AS AN INTERMEDIATE PHASE IN
THE 1ST REGION, WAS MAX AT 14PERCENT REDN. FACILITY: VOLGOGRAD.
POLITEKH. INST., VOLGOGRAD, USSR.

UNCLASSIFIED

BALAKIREV, Ye. K.

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...the scientific studies of the east coast of the Caspian during the expedition of V. N. Gerasimov and N. A. Vashutinov (1859-1871). ...the results of the expedition of V. N. Gerasimov and N. A. Vashutinov (1859-1871). ...the results of the expedition of V. N. Gerasimov and N. A. Vashutinov (1859-1871).

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...the results of the expedition of V. N. Gerasimov and N. A. Vashutinov (1859-1871). ...the results of the expedition of V. N. Gerasimov and N. A. Vashutinov (1859-1871). ...the results of the expedition of V. N. Gerasimov and N. A. Vashutinov (1859-1871).

...the results of the expedition of V. N. Gerasimov and N. A. Vashutinov (1859-1871). ...the results of the expedition of V. N. Gerasimov and N. A. Vashutinov (1859-1871). ...the results of the expedition of V. N. Gerasimov and N. A. Vashutinov (1859-1871).

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...the results of the expedition of V. N. Gerasimov and N. A. Vashutinov (1859-1871). ...the results of the expedition of V. N. Gerasimov and N. A. Vashutinov (1859-1871). ...the results of the expedition of V. N. Gerasimov and N. A. Vashutinov (1859-1871).

1/2 030

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--CORROSION OF CONSTRUCTION MATERIALS DURING THE SULFOXIDATION OF
HYDROCARBONS -U-

AUTHOR--(05)-BALAKIREV, YE.S., OSTROUMOVA, V.V., GERSHENOVICH, A.I.,
DZHAGATSPANYAN, R.V., KHROMENKOV, L.G.

COUNTRY OF INFO--USSR

SOURCE--ZASHCH. METAL. 1970, 6(2), 224

B

DATE PUBLISHED-----70

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

TOPIC TAGS--STEEL CORROSION, STAINLESS STEEL, ALLOY DESIGNATION, CORROSION
RATE, CORROSION RESISTANCE, SULFOXIDE, LEAD ALLOY, HYDROCARBON, SULFONIC
ACID/(U)SO LEAD ALLOY, (U)KH18N12M2T STAINLESS STEEL, (U)OKH23N28M3D3T
STAINLESS STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1992/0749

STEP NO--UR/0365/70/006/002/0224/0224

CIRC ACCESSION NO--AP0111942

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0111942

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. IN THE HG PHOTOCHEM. SULFOXIDN. OF ALIPHATIC C SUB10-20 HYDROCARBONS,. SATISFACTORY CORROSION RESISTANCE WAS FOUND FOR STEEL OKH23N28M3D3T OR KH18N12M2T, OR PB S-O, THE CORROSION RATES BEING 0.040, 0.048, AND 0.034 G-M PRIME2-HR. DURING THE ALC. EXTN. OF THE SULFONIC ACIDS, THE CORROSION RATES FOR THE STEELS WERE 0.00075 G-M PRIME2-HR.

UNCLASSIFIED

USSR

RALAKIREV, YU. G., Tr. VII Vses. konferentsii po teorii obolochek i plastinok, 1969, Moscow, "Nauka," 1970, pp 81-87

between them which is completely filled with fluid. The cylindrical shells are considered to be simply supported at the top edge and rigidly clamped at the bottom edge. In order to calculate the natural vibrations of a vessel with an elastic bottom and elastic side walls according to the Bubnov method, the normal modes found during the solution of the preceding problems are used as coordinate functions. The calculations of natural frequencies and coefficients of reduced mass are presented. The influence of boundary conditions on shell edges is shown by comparison with the results of the author's work cited above. It is shown that this influence on the lower frequency of axisymmetric vibrations of fluid-filled shells is insignificant.

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- 54 -

USSR

BALAKIREVA, I.

"Viruses and Heredity"

Moscow, Vechernyaya Moskva, 11 Aug 71, p 3

Translation: Viruses which cause disease in humans and animals can restore themselves at the expense of the cells in which they are located. This is the conclusion reached by associates of the Institute of Poliomyelitis and Viral Encephalitides of the Academy of Medical Sciences USSR.

Under the leadership of Doctor of Medical Sciences G. D. Zasukhina, tickborne encephalitis viruses were treated with a substance which causes damage to their hereditary structures. After several days, these same viruses, transferred to fetal pig cells, had almost completely regained their activity. And their offspring were "healthy."

The scientists suppose that the system of enzymes which is available in human and animal cells and protects hereditary structures against unfavorable effects from the surrounding medium, is used by viruses for the same purpose. The mechanism of action of enzymes is of great interest for
1/2

- 11 -

USSR

BALAKIREVA, I., Vechernyaya Moskva, 11 Aug 71, p 3

medicine and agriculture because, scientists hope, this knowledge will make it possible to control heredity and to obtain healthy, highly productive varieties of plants and farm animals.

It is possible that solving this problem will open the way to obtaining vaccines against viruses.

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1/2 015

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--COPOLYMERS STUDIED FROM GELATION CURVES -U-

AUTHOR--(05)--PETERBURGSKAYA, L.O., BALAKIRSKAYA, V.L., KRONMAN, A.G.,
SVETOZAKSKIY, S.V., KOCHNEVA, N.N.
COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (3), 9-11

B

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--COPOLYMER, GELATION, PLASTICIZER, POLYVINYL CHLORIDE,
ACRYLATE, PHTHALATE, LATEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1823

STEP NO--08/0191/70/000/003/0009/0011

CIRC ACCESSION NO--AP0112807

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--0700170

CIRC ACCESSION NO--AP0112807

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GELATION CURVES MAY BE USED TO DET. CONTENT AND HOMOGENEITY OF SIMILARLY PREPD. COPOLYMERS BY DETG. TEMP. BEHAVIOR IN PLASTICIZERS. GELATION CURVES FOR POLY(VINYL CHLORIDE) (I) AND ME ACRYLATE (II) VINYL CHLORIDE (III) COPOLYMERS (IV), PREPD. BY (NH SUB4) SUB2 S SUB2 O SUB8 CATALYZED EMULSION POLYMN., IN BU BENZYL PHTHALATE PLASTICIZER DIFFERED WITH CONTENT OF II. THE TEMPS. OF SWELLING AND OF SOLN. DECREASED LINEARLY WITH INCREASE IN COMONOMER (II OR VINYL ACETATE (V)) CONTENT SO THAT COMPNS. OF NEW COPOLYMERS CAN BE DETD. FROM SUCH CURVES. A MIXT. (A) OF I WITH IV SHOWED THE CHARACTERISTIC VISCOSITY MAX. OF IV AND I AND THE GELATION CURVE OF A WAS BROADER THAN THAT OF I. GELATION CURVES OF III-V COPOLYMERS PREPD. BY 3 DIFFERENT METHODS (DISPERSION, LATEX, AND SOLN. POLYMN.) DIFFERED BY SWELLING TEMPS. AND SOLN. TEMPS. AND IN WIDTH (DISTANCE FROM EACH OTHER).

UNCLASSIFIED

Acc. Nr:

AP0048841

Abstracting Service:
CHEMICAL ABST.

Ref. Code

UR0459

910777 Correlation between the structure and properties of plasticized poly(vinyl chloride). Sharkman, R. P.; Yatsynina, T. L.; Belakinskaya, V. L. (USSR). Vysokomol. Soedin., Ser. A 1970, 12(1), 149-53 (Russ). Dispersions of com. poly(vinyl chloride) (I) (mol. wt. 150,000) were prepd. at 160-80° in bis(2-ethylhexyl) phthalate (II) and compressed or allowed to solidify into films. The rates of II extn. with MeOH at room temp., gas permeability, elec. cond., and Brilliant Green diffusion rates for the films all decreased with increasing I concn. The elasticity modulus and glass temp. of the films increased with I concn. The plots of I concn. vs. film properties have inflections at ~50% concn. Below 50% I concn. the structure consists of a fibrillar network in a continuous liq. II phase. Above 50% the bubbles of II are encapsulated by I fibrils. CPJR

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USSR

UDC 681.888:681.121.8

KOLCHIN, V.A., BALAKISHIYEV, G.A.

"Following Ultrasonic Level Indicator"

Za tekhn. progress (For Technical Progress), 1970, No 6, pp 4-6 (from
RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A421)

Translation: A following ultrasonic level indicator is considered which eliminates the deficiencies of existing following level indicators and makes it possible to observe level changes automatically during operation, with a precision independent of the properties of the medium being monitored. Automatic shift of the carriage by level is accomplished by a Type PD-C.9 motor. The electronic part includes a generator of ultrasonic oscillations and two receiving devices, which consist of an electronic amplifier, an emitter follower, and a transistor key [klyuch]. The pickup [datchik] of the indicator is a 2-channel acoustic-transducer constructed according to a emitter-receiver circuit. The acoustic channels are shifted vertically one with reference to the other to the section determining the amount of precision of the level indicator. The precision of indication by the channels can be increased by diaphragming the ultrasonic rays at the piezocrystal receivers. It is established that for water and transformer oil the precision of the indicator amounts to < 1 mm, which is indicative of the independence of the level indicator from the composition of the liquid being monitored. A block diagram and the principal electrical circuit of the indicator are presented. 3 ill. 16 ref. L.K.

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USSR

UDC 621.317.75.029.64(088.8)

PETRUSHIN, A.A., BALAKLITSKIY, I.M., SHESTOPALOV, V.P.

"Device For Visual Representation Of The Electromagnetic Field In Open Resonators"

USSR Author's Certificate No 286004, filed 6 Jan 69, published 4 June 71 (from RZh:Radiotekhnika, No 2, Feb 72, Abstract No 2A285P)

Translation: The patented device for visual representation of the electromagnetic fields in open resonators contains a microwave generator, a detector, amplifier, oscilloscope, and a mechanism for movement of the test body provided with potentiometric pickups for movement in two mutually perpendicular directions. With the object of decreasing the time for visual representation, the output of the amplifier is connected to the brightness modulator of the oscilloscope and the potentiometric pickups are connected to the deflecting system of the oscilloscope. The device makes it possible to obtain an actual visual pattern of the distribution of the fields in open resonators, and precisely to distinguish the type of oscillations and to perceive the arrangement and form of the field spot. It is possible to conduct observations in resonators with mirrors of an arbitrary geometrical configuration with the presence in the cavity of any nonuniformities. It is also possible to determine the effect of methods of excitation of the resonators on the pattern of the field. A.A.

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USSR

UDC: 621.317.799

PETRUSHIN, A. A., BALAKLITSKIY, I. M., SHESTOPALOV, V. P.

"A Device for Visualizing an Electromagnetic Field in Open Resonators"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 34, 1970, Soviet Patent No 286004, Class 21, filed 6 Jan 69, p 43

Abstract: This Author's Certificate introduces a device for visualizing the electromagnetic field in open resonators. The device contains an SHF oscillator, detector, amplifier, oscillograph and probe-manipulating mechanism equipped with potentiometric displacement indicators for two mutually perpendicular directions. As a distinguishing feature of the patent, the time for visualization is reduced by connecting the output of the amplifier to the brightness modulator of the oscillograph, and connecting the potentiometric indicators to the deflecting system of the oscillograph.

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1/2 031 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ASSEMBLY FOR STUDYING ELECTROMAGNETIC FIELDS IN OPEN RESONATORS IN
THE MILLIMETER RANGE -U-
AUTHOR-(03)-PETPUSHIN, A.A., BALAKLITSKIY, L.M., SHESTOPALOV, V.P.

COUNTRY OF INFO--USSR

SOURCE--PRIEDRY I TEKHNIKA EKSPERIMENTA, MAR.-APR. 1970, P. 147-149

DATE PUBLISHED----APR70

SUBJECT AREAS--PHYSICS, METHODS AND EQUIPMENT

TOPIC TAGS--QUARTZ, TEST METHOD, ELECTROMAGNETIC FIELD, MAGNETIC
RESONANCE, GRAPHITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1418

STEP NO--UR/0120/70/000/000/1047/0149

CIRC ACCESSION NO--AP0133370

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0133370

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF AN ASSEMBLY FOR OBTAINING A VISIBLE IMAGE OF THE FIELD DISTRIBUTION IN OPEN RESONATORS IN THE MILLIMETER AND SUBMILLIMETER WAVELENGTH RANGE. ESSENTIAL IN THIS ASSEMBLY IN THE Q FACTOR MODIFICATION CAUSED BY DIFFRACTION EFFECTS WHEN A 0.3 TO 0.6 MM POROUS GRAPHITE SPHERE FIXED ON A QUARTZ THREAD IS MOVED IN A PLANE PERPENDICULAR TO THE RESONATOR AXIS. THE DETERMINATION OF THE OSCILLATION MODES AND FIELD DISTRIBUTION IN OPEN RESONATORS WITH ANY MIRROR GEOMETRY IS FACILITATED BY THIS TECHNIQUE. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, INSTITUT RADIOFIZIKI I ELEKTRONIKI, KHARKOV, UKRAINIAN SSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EXPERIMENTAL STUDY OF OPEN RESONATORS WITH REFLECTIVE DIFFRACTION
GRATES. I -U-
AUTHOR-(04)-BALAKLITSKIY, I.M., PETRUSHIN, A.A., TRETYAKOV, O.A.,
SHESTOPALOV, V.P.
COUNTRY OF INFO--USSR **B**
SOURCE--UKRAYIN. FIZ. ZH. (USSR), VOL. 15, NO. 5, P. 724-38 (MAY 1970)
DATE PUBLISHED---MAY70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--OPEN RESONATOR, OPTIC MIRROR, DIFFRACTION GRATING, HARMONIC
OSCILLATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/1808 STEP NO--UR/0185/70/015/005/0724/0738
CIRC ACCESSION NO--AP0133713
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133713

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEMI SPHERIC OPEN RESONATORS (OR) WITH A FLAT MIRROR COVERED PARTIALLY BY A REFLECTIVE DIFFRACTION GRATE WERE STUDIED EXPERIMENTALLY. SPECTRA AND FIELD DISTRIBUTIONS OF NATURAL OSCILLATIONS WERE EXAMINED IN DEPENDENCE ON THE DISTANCE BETWEEN THE MIRRORS FOR VARIOUS GRATE PARAMETERS. SIMILAR DEPENDENCES OBTAINED WHEN INVESTIGATING BOTH A CONVENTIONAL HEMI SPHERIC OR AND THAT WITH A FLAT MIRROR COMPLETELY COVERED BY A REFLECTIVE DIFFRACTION GRATE ARE PRESENTED FOR COMPARISON. THE SPECTRUM AND FIELD DISTRIBUTIONS OF NATURAL OSCILLATIONS OF OR WITH A TROUGH SHAPED ROUND APERATURE MIRROR INSTEAD OF A SPHERIC ONE ARE CONSIDERED.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ON THE POSSIBILITY OF OPERATION OF A DIFFRACTION RADIATION
GENERATOR UNDER CONDITIONS OF BACKWARD WAVE OSCILLATOR -U-
AUTHOR-(03)-SKRYNNIK, B.K., BALAKLITSKIY, I.M., KURIN, V.G.
COUNTRY OF INFO--USSR **B**
SOURCE--UKRAYIN. FIZ. ZH. (USSR), VOL. 15, NO. 5, P. 717-23 (MAY 1970)
DATE PUBLISHED----MAY70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--BACKWARD WAVE OSCILLATOR, ELECTROMAGNETIC WAVE DIFFRACTION,
MICROWAVE GENERATOR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/1807 STEP NO--UR/0185/70/015/005/0717/0723
CIRC ACCESSION NO--AP0133712

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133712

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS ARE CONSIDERED OF AN EXPERIMENTAL STUDY OF THE BWO CONDITIONS TOGETHER WITH ACCOMPANYING DIFFRACTION RADIATION. THE LATTER WAS FOUND IN GENERATORS OF DIFFRACTION RADIATION (GDR) WHEN OPERATING IN A SHORTWAVE MILLIMETER RANGE UNDER AN INTERRUPTED REGIME. A COMPARISON WAS MADE OF THESE OPERATING CONDITIONS WITH A 'PERFECT' REGIME OF DIFFRACTION RADIATION.

UNCLASSIFIED

USSR

UDC: 621.372.413

BALAKLITSKIY, I. M.

"An Open Resonator With Reflective Diffraction Grating"

Radiotekhnika. Resp. mezhved. nauchn.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 13, pp 37-42 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5B128)

Translation: The author determines conditions for excitation of natural oscillations in a system formed by a flat non-ideal screen and a reflective diffraction grating. Losses in the grating can be accounted for. In the general case, the dispersion equation has the form of an infinite determinant, the method of reduction being suitable for calculating this determinant. For the special case of modes which can be excited by the diffraction emission phenomenon, the solution is found in explicit form. Optimum values of the geometric parameters of a structure are presented where the modes in this structure are most effectively excited by an electron beam. Resumé.

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- 13 -

USSR

UDC 621.317.76

BALAKOV, V. F., RADCHENKO, V. F., PUCHKOV, V. S.

"Measuring Pulse Superhigh-Frequency Power"

Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970. Sekts. Radiotekhnicheskaya. Podseks. Ferritovoy SVCh radiofiziki (Reports of the Scientific and Technical Conference on the Results of Scientific Research Work for 1968-1969. Moscow, Power Engineering Institute, 1970. Radiotechnical Section. Ferrite Superhigh Frequency Radio Physics Subsection), Moscow, 1969, pp 40-46 (from RZh-Radiotekhnika, No 3, Mar 70, Abstract No 3A310)

Translation: A ferrite cross multiplier is used as the sensor for a frequency-selective pulse wattmeter. The cross multiplier consists of a ferrite sample around which a coil is wound. The sample is placed in the field of a permanent magnet, and a low frequency voltage F is fed to the coil from the modulator. On placement of the sample in a waveguide and feeding a superhigh-frequency power to it in the circuit formed by the coil, a voltage $2F$ is created with an envelope proportional to the input power and repeating the formula of the superhigh-frequency pulse. A watt-meter can be used in the panoramic scan mode. The meters using the cross multiplier can operate in the 1-40 gigahertz range. The range of measurable powers is from units to hundreds of milliwatts, the minimum superhigh

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USSR

BALAKOV, V. F., et al, Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970. Sekts. Radiotekhnicheskaya. Podseks. ferritovoy SVCh radiofiziki, Moscow, 1969, pp 40-45

frequency pulse length is 0.2-0.5 microseconds, and the selectivity with detuning of 50 megahertz is greater than 20 decibels. The error is less than 15%. The bibliography has two entries.

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1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--USE OF A METHOD OF ACCELERATED TESTING WITH A PROGRESSIVE LOAD FOR
THE DETERMINATION OF STATISTICAL FATIGUE CHARACTERISTICS -U-
AUTHOR-(02)-KRAMARENKO, O.YU., BALAKOVSKY, O.B. B

COUNTRY OF INFO--USSR

SOURCE--PROBLEMY PROCHNOSTI, JAN. 1970, (1), 36-41

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT

TOPIC TAGS--GRAPHIC TECHNIQUE, CAST IRON, STEEL, TEST METHOD, FATIGUE
STRENGTH/(U)ST45 STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0115

STEP NO--UR/3663/70/000/001/0036/0041

CIRC ACCESSION NO--AP0123887

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123887

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD OF STATISTICAL TREATMENT OF RESULTS OF FATIGUE TESTS WITH PROGRESSIVE AMPLITUDE OF LOADING IS DISCUSSED. THE METHOD IS APPRAISED IN COMPARISON WITH TESTS USING A CONSTANT AMPLITUDE. TEST RESULTS FOR PEARLITIC AND FERRITIC CAST IRONS AND SPECIAL GRADES OF STEEL ST. 45 ARE PLOTTED ON LINEAR-PROBABILITY GRAPH PAPER AND IN EACH CASE THE FATIGUE LIMITS FOLLOW A GAUSSIAN PROBABILITY DISTRIBUTION.

UNCLASSIFIED

USSR

B UDC 621.792.6:678.7

KOGAN, E. A., LOSEV, B. I., BALALAYEV, E. G., and FRIDMAN, M. L.;
All-Union Scientific Research and Design Institute Teploproyekt,
Moscow; Institute of Mineral Fuels, Moscow, Academy of Sciences
USSR; Moscow Petroleum Conversion Plant

"Adhesion of Thermoplasts to Elastomers"

Moscow, Kolloidnyy Zhurnal, Vol 32, No 3, May-Jun 70, pp 373-376

Abstract: Elastomer-thermoplast sheets of the type used as coatings protecting against corrosion were prepared from butyl rubber, butadiene-styrene rubber (SKS-30), and butadiene-acrylonitrile rubber (SKN-40) that contained S and molten polypropylene joined to them under pressure. The two-layer sheets were subjected to vulcanization at 143° under pressure. The adhesion between the elastomer and polypropylene decreased in the order butyl rubber > SKS-30 > SKN-40. It was highest for butyl rubber because of the mutual compatibility of the two polymers, lower for SKS-30 because the rigid styrene groups interfered with mutual penetration, and lowest for SKN-40 because the cumbersome nitriloacrylic groups reduced interpenetration by diffusion. The adhesion was at a maximum after a 1/2