

Automatic Control: Instruments

USSR

UDC 577.4

RAKURIN, N. Ya., and VASILENKO, Yu. A.

"Minimization of Discrete Devices by the Method of Graphs"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb.
(Automation Devices and Systems. Republic Interdepartmental Thematic
Scientific-Technical Collection), 1972, No 24, pp 134-148 (from RZh-
Matematika, No 11, Nov 72, Abstract No 11V335)

Translation: An algorithm is proposed for designing discrete devices that is based on the method of modeling graphs. Examples of carrying out effective minimization are given. When used manually, the algorithm is applicable to minimization of circuits with 8-9 inputs. Computer formulation of the algorithm is required for a larger number of inputs. Authors abstract.

USSR

UDC: 577.4

KAKURIN, N. Ya., VASILENKO, Yu. A.

"Minimization of Discrete Devices by the Method of Graphs"

Pribory i Sistemy Avtomatiki. Resp. Mezhved. Temat. Nauch.-tekhn. Sb. [Automation Devices and Systems. Republic Interdepartmental Thematic Scientific and Technical Collection], 1972, No 24, pp 134-148 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V355, by the authors)

Translation: An algorithm is suggested for planning discrete devices, based on the method of modeling graphs. Approaches are given for effective minimization. With manual application, the algorithm can be used for minimization of circuits with eight to ten inputs. When there are many inputs, the algorithm must be run by a computer.

USSR

UDC 621.375.82

DUBNISHCHEV, Yu. N., KORONKEVICH, V. P., SOBOLEV, V. S., STOLPOVSKIY, A. A.,
SENIN, A. G., UTKIN, Ye. N., VASILENKO, Yu. G., SHMOYLOV, N. F.

"Development of the Doppler Method for Measuring Flow Rate"

V sb. Konf. po avtomatiz. nauch. issled. na osnova primeneniya ETsVM, 1972
(Conference on the Automation of Scientific Research on the Basis of Com-
puter Applications, 1972 -- Collection of Works), Novosibirsk, 1972,
pp 63-70 (from RZh-Fizika, No 11, Nov 72, Abstract No 11D976)

Translation: A two-channel compensation circuit for a laser Doppler device
for measuring velocity is proposed. Use of this device makes it possible to
lower considerably the level of the low-frequency component of the signal,
which causes disturbance in processing the signal. The potential possibi-
lities of the method of electronic processing of a Doppler signal are con-
sidered theoretically from the aspect of the accuracy of the measurements.
The possibilities of the device are illustrated by an autocorrelation func-
tion for different average flow rates. A. I. Serbin.

1/1

USSR

UDC 621.378.3

VASILENKO, YU. G., DONTSOVA, V. V., DUBNISHCHEV, YU. N., Novosibirsk

"Laser Doppler Velocity Meter Using a Fabry-Perot Interferometer"

Novosibirsk, Avtometriya, No 3, 1971, pp 90-92

Abstract: An experiment is described in which the linear local velocity of a rotating disc was measured. A single-frequency laser was used to increase the measurement accuracy. In the experimental setup, a helium-neon laser beam is passed through a lens and focused on the scattering disc. The backscattered light was observed on a Fabry-Perot etalon in front of which there was a collimating diaphragm. The experimental measurements were performed for a linear velocity of the investigated part of the disc of 60 m/sec. The mean square error of the measurements was ± 5 m/sec, and the relative error, 5%. The relative error decreases with an increase in velocity. A photograph of the interference rings obtained is presented.

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USSR

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UDC 613.6:612.766.1

NAVAKATIKYAN, A. O., KUNDIYEV, Yu. I., AKHRIMENKO, A. P., MAKSIMOVA, O. F.,
VASTILENKO, Yu. I., SAVENKO, N. P., BUZUNOV, V. A., TOMASHEVSKAYA, L. I., and
BERKACH, V. S., Institute of Industrial Hygiene and Occupational Diseases,
Kiev.

"Principles for Quantitative Evaluation of the Difficulty and Strenuousness
of Work on the Basis of Physiological Data"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1971, pp 3-9

Abstract: A four-level classification of jobs by difficulty and stress is pro-
posed on the basis of research conducted by the Institute and the literature
data. The criteria used to measure the amount of effort involved as well as
the changes therein during the course of the workday include energy consump-
tion (ranging from under 150 kcal/hour for class 1 work, e.g., computer pro-
gramming, to 351 kcal/hour or more for class 4 work, e.g., steel casting),
muscular, cardiovascular, central nervous, and endocrine functions. A table
lists average values of several physiological functions in different kinds of
work while another evaluates the difficulty and strenuousness of different
kinds of jobs (e.g., operation of office machines is classified as class 1 in
difficulty and class 2 in strenuousness, lathework 2 and 2, steel casting 4
1/2

AVAKATKYAN, A. O., et al., *Gigiyena Truda i Professional'nyye Zabolevaniya*,
No 7, 1971, pp 3-9

and 3). The article also discusses some of the theoretical and practical problems in establishing adequate criteria and in applying them to specific jobs, work conditions, and various groups of people (e.g., adolescents, females, elderly workers).

1/2 024

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--ORIENTATION AND CRYSTALLINITY OF POLY(ETHYLENE TEREPHTHALATE)
STUDIED BY AN ACOUSTICAL METHOD -U-
AUTHOR--(05)-PEREPECHKO, I.I., GRECHISHKIN, V.A., KAZARYAN, L.G.,
VASILENKO, ZH.G., BERESTNEV, V.A.

~~SECRET~~

V

COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(2), 438-42
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTALLINE POLYMER, AMORPHOUS POLYMER, POLYETHYLENE
TEREPHTHALATE, X RAY DIFFRACTION ANALYSIS, ULTRASONIC VELOCITY, POLYMER
STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0246

STEP NO--UR/0459/70/012/002/0438/0442

CIRC ACCESSION NO--AP0106902

UNCLASSIFIED

2/2 024

CIRC ACCESSION NO--AP0106902
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--02OCT70

MOSELEY, 1960) OF POLY(ETHYLENE TEREPHTHALATE) I CONTS. BOTH CRYST. AND AMORPHOUS REGIONS WAS DETD. BY X RAY DIFFRACTOMETRY. IT WAS DEMONSTRATED THAT MOSELEY'S FORMULA ALPHA SIMILAR TO 1 MINUS (C PRIME2 SUBO2-C PRIME2) (C SUBO2 AND C ARE THE ULTRASOUND VELOCITIES IN 100PERCENT ISOTROPIC MATERIAL AND IN THE SAMPLE, RESP.) MUST BE REPLACED BY ALPHA EQUALS (1 MINUS(C PRIME2 SUBO2-C PRIME2))-(1 MINUS (C PRIME2 SUBO2-C PRIME2 SUBO1)), WHERE C SUBO1 IS THE ULTRASOUND VELOCITY IN 100PERCENT CRYST. MATERIAL. C SUBO1 OF I WAS ESTD. FROM THE DIFFRACTOMETRY DATA AND C SUBO2 WAS DETD. EXPTL. USING A FULLY AMORPHOUS I SAMPLE.

UNCLASSIFIED

USSR

Polymers and Polymerization

UDC 678.049.9

VASILENOK, YU. I., KONOPLEV, B. A., LAGUNOVA, V. N., SIMONOV, A. M.,
POSHARSKIY, A. F., AVEZDINA, E. A., and ADREYCHIKOV, YU. P.

"Novel Antistatic Agents for Plastic"

Moscow, Plasticheskiye Massy, No 10, 1971, pp 11-13

Abstract: Results are reported of a study of the antistatic efficiency of imidazolinium bromohydrates, sodium salts of imidazolinium hydroxides, and adipic salts of imidazolinium and pyridinium after deposition on the surface of low density polyethylene, high density polyethylene, block polyethylene, and polymethylmetacrylate as well as with introduction of these agents directly into the polymer mass. It has been determined that deposition of these substances on the surfaces of polymers decreases the specific surface resistance at $20 \pm 2^\circ\text{C}$ and relative humidity $65 \pm 3\%$. The sodium salts of the substituted imidazolium hydroxides are especially effective in lowering the surface resistance. Addition of 1-4 weight-% of the investigated antistatic agent directly into the polymer mass has practically no effect on the mechanical properties of low density polyethylene; high density polyethylene shows a lower relative elongation at the tearing point after addition of the antistatic agents.

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1/2 025

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--PROPERTIES OF ANTISTATIC AND CONDUCTING POLYMERIC MATERIALS -U-

AUTHOR--(06)-VASILENOK, YU.I., DEYANOVA, A.S., KONOPLEV, B.A., LAGUNOVA, V.N., LELCHOK, SH.L., SAZHIN, B.I.

COUNTRY OF INFO--USSR

V

SOURCE--PLAST. MASSY 1970, (5), 57-60

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--SURFACE ACTIVE AGENT, POLYETHYLENE, PROPYLENE, COPOLYMER, BUTENE, ACETATE, POLYMETHYLMETHACRYLATE, ELECTRIC RESISTANCE, PLASTIC FABRICATION, ANTISTATIC ADDITIVE, MONOETHANOLAMINE, AMMONIUM CHLORIDE, ALCOHOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0923

STEP NO--UR/0191/70/000/005/0057/0060

CIRC ACCESSION NO--AP0134652

UNCLASSIFIED

2/2 025

CIRC ACCESSION NO--AP0134652
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT. THE ADDITION OF SURFACE ACTIVE COMPS. TO POLYETHYLENE, ETHYLENE, PROPYLENE COPOLYMER, ETHYLENE, ALPHA, BUTYLENE COPOLYMER, ETHYLENE, VINYL ACETATE COPOLYMER, OR POLY(METHACRYLATE) REDUCED THEIR SP. SURFACE ELEC. RESISTANCE (RHO SUBS). THE REDN. OF RHO SUBS INCREASED THE RATE OF THE ELEC. CHARGE DISSIPATION AND IMPROVED THE ANTISTATIC PROPERTIES. THE REDN. OF RHO SUBS DEPENDED ON THE THICKNESS OF THE SURFACTANT LAYER ON THE POLYMER SURFACE, WHICH WAS THE FUNCTION OF THE SURFACTANTS (HYDROXYETHYLATED CETYL ALC., STEARYL ALC., OCTADECYLAMINE, MONOETHANOLAMINE, OR DIMETHYLOCTADECYLAMMONIUM CHLORIDE) WAS DURING THE EXTRUSION.

UNCLASSIFIED

USSR

UDC: 536.24:532.526

ZAVARZINA, I. F. and VASIL'EV, A. A.

"Experimental Investigation of Local Heat Transfer on Axisymmetrical Bodies with Spherical Ends in Rarefied Gas Flow"

Novosibirsk, Sb. Experm. Issled. i Vopr. Modelir. Teheniy Razrezhen. Gaza i Piazmy (Symposium on Experimental Investigation and Modeling Problems of Rarefied Gas and Plasma Flow), 1971, pp 112-117 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No. 2B872 by B. I. Bakum)

Translation: Experimental results are given of heat transfer on the surface of cone and cylinder with spherical ends obtained with $M_{\infty} = 3.7 \div 8$, $Re_{\infty} = U_{\infty} \rho_{\infty} S / \mu_{\infty} = 4 \times 10^4$ (S is the curvilinear coordinate along the generatrix with the origin in the center of the spherical surface), angles of attack 0° and 20° and temperature factor $T_w/T_0 = 0.43$. The results obtained are compared with calculated values and with data by other authors. 9 references.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--BOILING CRISIS IN LONGITUDINAL FLOW PAST ROD BUNDLES -U-
AUTHOR--(03)--TOLUBINSKIY, V.I., MAZKA, S.A., VASILEV, A.A.
COUNTRY OF INFO--USSR
SOURCE--HEAT TRANSFER SOV. RES.; 2: 1-6 JAN 1970
DATE PUBLISHED--70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--HEAT TRANSFER RATE, BOILING, TWO PHASE FLOW, METAL ROD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1138 STEP NO--US/0000/70/002/000/0001/0006
CIRC ACCESSION NO--AP0124793
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124793

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AS ESTIMATE, OBTAINED BY ANALYSIS OF SOVIET AND WESTERN PUBLICATIONS ON THE HEAT TRANSFER CRISIS IN ROD BUNDLES IN LONGITUDINAL FLOW, OF THE POSSIBLE EFFECT OF VARIOUS GEOMETRIC CHARACTERISTICS OF MULTIROD ASSEMBLIES ON THE CRITICAL HEAT FLUX DENSITY IS PRESENTED. FACILITY: INST. OF ENGINEERING THERMOPHYSICS, KIEV.

UNCLASSIFIED

ACC. NO:

AP0100918

Abstracting Service:

CHEMICAL ABST. 5-70 ✓

Ref. Code:

U/0366

110743p Herbicide derivatives of hydroxylamine. XXXV.

Reaction of N-alkylcarbamoyl-N-alkylhydroxylamines with iso-

cyanates. Konstantinova, I. V.; Shvindlerman, G. S.; Va-

silovskiy, E. Baskakov, Yu. A. (Vses. Nauch.-Issled. Inst.

Khim. Serdstv Zashch. Rast., Moscow, USSR). Zh. Org. Khim.

1970, 6(2), 300-6 (Russ). Condensation of RNHOH with

R¹NCO in Et₂O or benzene at 0-5° gave RN(OH)CONHR¹ (I)(R and R¹ given): Me, Me; Me, Et; Me, iso-Pr; Me, Bu; Me,

iso-Bu; Me, sec-Bu; Me, tert-Bu; Et, Me; Et, Et; Et, Pr;

Et, iso-Pr; Et, Bu; Et, iso-Bu; Et, sec-Bu; Et, tert-Bu; Et,

3-C₆H₅; and iso-Pr, tert-Bu. At 20° RNHOH react withR¹NCO to give besides I also RN(O₂CNHR¹)CONHR² (R, R¹,and R² given): Me, Me, Me; Et, Me, Me; Et, iso-Pr, iso-Pr;Me, iso-Pr, iso-Pr; Et, sec-Bu, sec-Bu; Et, tert-Bu, 3-C₆H₅;and Et, 3-C₆H₅, 3-C₆H₅. The "transisocyanation" reac-tion (N. V. Konstantinova *et al.*, 1969) of I with isocyanates

gives a variety of products depending on the reaction conditions

and the relative reactivity of the reactants: e.g. EtN(OH)-

CONHBu-*tert* + 3-C₆H₅NCO → EtN(OH)CONHC₆H₅Cl-3 →EtN(O₂CNHBu-*tert*)CONHC₆H₅Cl-3. Also MeN(OH)CONH-Bu + MeNOC → MeN(O₂CHNMe)CONHMe + BuNCO.

CPJR

REEL/FRAME
19850436

USSR

UDC: 533.6.011.8

VASIL'EV, L. A., ZHDANOVA, L. N. and KINAYCHEV, A. D.

"Moment Characteristics of 15-Degree Cones in Flow of Rarefied Gas"

Novosibirsk, Sb. Eksperim. Issled. i Vopr. Modelir. Tsecheniy Razrezhennogo Gaza (Symposium on Experimental Investigations and Modeling Problems of Rarefied Gas Flow), 1971, pp 105-111 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2B266 by A. I. Bunimovich)

Translation: Results are presented of an experimental investigation to determine the aerodynamic moment of cones with 15° half-opening angle and with apex rounded to the radius of 0, 0.3, 0.6, 0.9 and 1.0, with Mach number of 4 to 7 and angle of attack from 0 to 180° . A continuous increase of non-dimensional aerodynamic moment coefficient with the decrease of Reynolds number is observed. The experimental data are compared to the calculation results based on Newton theory, Free Molecular Flow theory and theory based on local interaction hypothesis.

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1/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--ACTION OF NITROGEN OXIDES ON BROMOLEFINS. 4. ACTION OF NITROGEN
TETROXIDE ON 2,BROMO,1,1,DIPHENYLETHYLENE -U-
AUTHOR-(02)-VASILEV, S.V., BURDELEV, O.T.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1), 73-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--NITROGEN OXIDE, BROMINATED ORGANIC COMPOUND, ETHYLENE,
NITROGEN TETROXIDE, BENZENE DERIVATIVE, CHROMATOGRAPHY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1923 STEP NO--UR/0153/70/013/001/0073/0075
CIRC ACCESSION NO--AT0112095
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AT0112895
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. OF 65 G 2,BROMO, 1,1,DIB
ENYLETHYLENE IN 75 ML ET SUB2 O WITH 23.3 G N SUB2 O SUB4 IN 100 ML ET
SUB2 O AS KEPT 6 HR AT 10DEGREES, WASHED WITH H SUB2 O, ET SUB2 O
REMOVED, 100 % H SUB2 O ADDED, AND THE MIXT. REFLUXED 4 HR TO GIVE
4PERCENT 1,1,DINITRO,2,2,DIPHENYLETHYLENE (I), M. 141.5-200DEGREES,
(ETOH), AND 49.5PERCENT 1,BROMO,1,NITRO,2,2,DIPHENYL,ETHYLENE (II).
CHROMATOG. OF THE MOTHER LIQUORS GAVE 3PERCENT I, 15PERCENT II,
14PERCENT 1,NITRO,2,2,DIPHENYLETHYLENE, M. 88-88.5DEGREES, 5PERCENT PH
SUB2 O, M. 48.5-49DEGREES, AND 2PERCENT PH SUB2 C (NO SUB2). CO SUB2 H,
M. 139-40DEGREES. FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL.
IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 532

VASILEV , V. A., SHEVCHENKO, Ye. Ya.

"On Calculating the Heat Capacities of Aqueous Solutions of Halogenides of Alkali Metals"

Tr. Mosk. khim.-tekhrol. in-ta im. D. I. Mendeleyeva (Works of Moscow Chemical Engineering Institute imeni D. I. Mendelejev), 1972, No. 71, pp 48-51 (from RZh-Fizika, No 1, Jan 73, Abstract No 1Yel48)

Translation: The equations relating the value of the specific heat capacity C_p of aqueous solutions of halogenides of alkali metals and their concentration are presented in the form of an interpolation series in terms of the concentration. Calculations of C_p are given for 25°C over a wide temperature range with an accuracy sufficient for practical purposes.

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USSR

UDC 539.3

VASIL'EV, V. V., DUDCHENKO, A. A. and ELPAT'EVSKIY, A. N.

"Bending of Cylindrical Shell Made of Nonlinearly-Elastic Glass-Plastic"

Moscow, Prochnost' i Ustoychivost' Tonkostennykh Aviatsionnykh Konstruktsiy, 1971, pp 228-234

Abstract: The subject cylindrical shell is produced by winding of a glass filament tape. The stress-strain diagram of the material is shown on fig. 1. The diagram is a straight line until a certain stress is reached causing cracks in the plastic between the filaments. Then the slope of the diagram changes corresponding to a lower modulus of elasticity.

The cylindrical shell is subject to a bending moment. Cylindrical coordinates are used. The section is divided into two zones having different modules of elasticity.

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USSR

VASIL'EV, V. V., et al., Prochnost' i Ustoychivost' Tonkostennykh
Aviatsionnykh Konstruktsiy, 1971, pp 228-234

Theoretical and experimental values of strain at various points
of the shell section closely agree as shown on fig. 2.

Fig. 3 shows moments and shears versus the angle between
the neutral axis and the boundary between the two zones.

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USSR

UDC 539.3

VASIL'EV, V. V. and YELPAT'EVSKIY, A. N.

"Optimum Shape of the Shell of Revolution Made of Glass Filament Plastic by the Continuous Winding Method"

Moscow, Prochnost' i Ustoychivost' Tonkostennykh Aviatsionnykh Konstruktsiy, 1971, pp 220-228

Abstract: The paper analyzes the shells of revolution generated by continuous winding of glass filament tape and subject to internal pressure.

The differential equation (12) gives the meridional shape of the shell for a given equatorial pitch angle of the tape and neglecting the strength of the bonding plastic. Integration of this equation results in equations (14). The meridional shape for the equatorial pitch angle of 33° is shown on fig. 3.

If the shell has a hole at the axis reinforced by a ring then the meridional shape of this ring is given by equation (22).

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USSR

VASIL'EV, V. V. and YELPAT'EVSKIY, A. N., Prochnost' i Ustoychivost'
Tonkostennykh Aviatsionnykh Konstruktsiy, 1971, pp 220-228

The constant of integration is determined from the condition
at the outer boundary of the reinforcing ring.

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USSR

UDC 539.3

OBRAZTSOV, I. F. and VASIL'EV, V. V.

"Some Problems of Optimum Design of Filament Reinforced
Plastics"

Moscow, Prochnost' i Ustoychivost' Tonkostennykh Aviatsionnykh
Konstruktsiy, 1971, pp 201-216

Abstract: Review of literature on the subject matter is made.

First the case of a cylindrical plastic shell reinforced by
left and right hand spiral filaments and subject to internal pressure
and axial load is considered. Equations (1) give the stress for the
two loads. Equation (3) is the condition of equality of the two
stresses. The wall thickness of the pressure vessel made out of
filament is 1.5 times the wall thickness of a solid wall pressure
vessel made of the same material. It is assumed that all the load
is carried by the filament and none by the binder.

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USSR

OBRAZTSOV, I. F., and VASIL'EV, V. V., Prochnost' i Ustoychivost' Tonkostennykh Aviatsionnykh Konstruktsiy, 1971, pp 201-216

Next the shells formed by wound tape are considered. In this case the binder cracks under load equal to 10-20% of the load causing failure of the tape.

An analysis is also made of a general case of shell of revolution. Conditions for uniform stresses are given.

2/2

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1/2 025
 TITLE--EFFECT OF A LOCAL LOAD ON THE CYLINDRICAL SHELL OF AN ORTHOTROPIC
 FIBERGLASS PLASTIC -U-
 AUTHOR--VASILEV, V.V.
 COUNTRY OF INFO--USSR
 SOURCE--MEKHANIKA PGLIMERUV, VOL. 6, JAN.-FEB. 1970, P. 95-101
 DATE PUBLISHED-----70

UNCLASSIFIED

PROCESSING DATE--09DCT70

SUBJECT AREAS--MATERIALS, PHYSICS, MECH., IND., CIVIL AND MARINE ENGR
 TOPIC TAGS--CYLINDRIC SHELL STRUCTURE, FIBERGLASS, LAMINATED STRUCTURE,
 STRESS LOAD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1992/1892

STEP NO--UR/0374/70/006/000/0095/01 01

CIRC ACCESSION NO--APO112872

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT79

2/2 025

CIRC ACCESSION NO--AP0112872

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE STRAINS INDUCED IN A LAMINATED ORTHOTROPIC CYLINDRICAL SHELL BY A NORMAL CONCENTRATED LOAD, USING EQUATIONS FREE FROM HYPOTHESIS OF RECTILINEAR NORMALS. AN ATTEMPT IS MADE TO ESTIMATE THE ERROR COMMITTED WHEN THE HYPOTHESIS OF RECTILINEAR NORMALS IS USED. AN EXPERIMENTAL VERIFICATION OF THE RESULTS OBTAINED WAS CARRIED OUT AND A GOOD AGREEMENT WITH THE THEORY WAS FOUND. FACILITY: MOSKOVSKII AVIATIONNIY INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

1/2 045 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--FEATURES OF THE DEFORMATION OF AN ORTHOTROPIC FIBERGLASS PLASTIC
DURING STRETCHING -U-
AUTHOR--(03)-VASILEV, V.V., DUDCHENKO, A.A., YELPATEVSKIY, A.N.
COUNTRY OF INFO--USSR
SOURCE--MEKHANIKA POLIMEROV, VOL. 6, JAN.-FEB. 1970, P. 144-147
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--FIBERGLASS, REINFORCED PLASTIC, MATERIAL DEFORMATION, POLYMER
BINDER, COMPOSITE MATERIAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1890 STEP NO--UR/0374/70/006/000/C144/0147
CIRC ACCESSION NO--AP0112870

UNCLASSIFIED

2/2 045

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112870

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXAMINATION OF THE DEFORMATION OF AN ORTHOTROPIC FIBERGLASS REINFORCED PLASTIC WITH ALLOWANCE FOR THE BREAKDOWN OF THE BINDER IN THE TRANSVERSE LAYER. ANALYSIS IS MADE OF THE DEFORMATION OF A THREE LAYER COMPOSITE SUBJECTED TO TENSION. A NUMERICAL EXAMPLE IS PRESENTED FOR ILLUSTRATING THE METHOD USED. FACILITY: MOSKOVSKII AVIATIONNYI INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 613.816:374

BEYTEL'MAN, M. C., and VASILEVSKAYA, A. D.

"Concerning the Content and Methods of Temperance Propaganda"

Moscow, Zdravookhraneniye Rossiyskoy Federatsii, No 5, 1970, pp 16-19

Abstract: The desiderata and shortcomings of educational campaigns dealing with alcoholism are discussed, with critical reference to several authors in the field. Drunkenness, a social phenomenon, and alcoholism, a true disease must be distinguished. The lack of systematic efforts and a scientific approach to alcoholism are deplored. The need for evaluating the effectiveness of treating alcoholism is urged. Scientific indices by which to measure the effectiveness are the number of alcoholics asking for help, and the percentage of relapses. The need for a broad educational campaign that is accurate and scientific as well as comprehensible to the public is emphasized. The need for winning over the public, for establishing a positive relationship with it, is also stressed. Avoidance of extreme, unrealistic, unconvincing slogans is recommended. The danger of regular use of alcohol as a possible cause of alcoholism is pointed out. An all-out campaign to stop completely the use of alcohol is considered unrealistic. Cooperation of medical and administrative personnel of various enterprises is urged.

1/1

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USSR

UDC 624.132.6:627.82.012.45(282.251.2)

ALEKSANDROVSKAYA, E. K., VASILEVSKAYA, L. A., GUSEV, Yu. N., URAKHCHIN,
V. P., Engineers

"Results of Natural-scale Observations of Shifting of the Krasnoyarsk
Dam and Its Rock Base"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 1, Jan. 1973, pp 17-23.

Abstract: Materials are presented from observations of the settling, horizontal shifting and tilting of the Krasnoyarsk Dam. The materials are analyzed. The measured displacements are used to determine the modulus of elasticity of the dam as a unit structure and the modulus of deformation of the rock base. The measured and calculated horizontal displacements are compared. Analysis and summarization of the materials of observation are used to produce a prediction concerning displacement of the top of the dam during its useful life. The extreme values of displacement can be looked upon in the first approximation as a criterion for safe operation of the structure, and the operating personnel can use them for further testing of the condition of the dam.

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1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--IMPORTANCE OF THE ALIMENTARY PROTEIN FOR EXTERNAL SECRETION OF THE
LIVER IN DERANGED HEPATO INTESTINAL CIRCULATION -U-
AUTHOR-(02)-VASILYEVA, YE.N., VASILEVSKAYA, L.S.
COUNTRY OF INFO--USSR
SOURCE--VOPROSY PITANIYA, 1970, NR 2, PP 26-31
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PROTEIN, SECRETION, LIVER, BILE, RAT, SMALL INTESTINE, DIET,
LIPID, PHOSPHORUS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/1480 STEP NO--UR/0244/70/000/002/0026/0031
CIRC ACCESSION NO--AP0101566

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101566

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF AN ELEVATED PROTEIN LEVEL IN THE DIET UPON THE SECRETION OF BASIC BILE COMPONENTS IN RATS WITH RESECTED PROXIMAL OR DISTAL HALF OF THE SMALL INTESTINE WAS STUDIED. IT IS SHOWN THAT ONE MONTH AFTER RESECTION OF THE INTESTINE IN ANIMALS WHOSE RATION CONTAINED 30PERCENT OF PROTEIN THE LIPIDS COMPLEX, CHOLIC ACID AND TOTAL PHOSPHORUS WERE SECRETED INTO THE BILE IN A HIGHER CONCENTRATION THAN THIS WAS THE CASE IN ANIMALS RECEIVING A RATION WITH 20PERCENT OF PROTEIN. SUCH A POSITIVE EFFECT OF PROTEIN IS ESPECIALLY MARKED IN THE EVENT OF LOW INITIAL LEVEL OF SECRETION, OBSERVED AFTER RESECTION OF THE DISTAL PART OF THE SMALL INTESTINE. SUBJECT TO INVESTIGATION WAS ALSO DIGESTION OF FAT WITH DIFFERENT DEGREES OF DISTURBED HEPATO INTESTINAL CIRCULATION OF THE BILE COMPONENTS. THE RESULTS OBTAINED BEAR OUT THAT AN INCREASE IN THE AMOUNT OF PROTEIN IN THE FOOD FAVOURS RESTORATION OF THE EXTERNAL SECRETORY FUNCTION OF THE LIVER DERANGED AFTER RESECTION OF THE SMALL INTESTINE.

UNCLASSIFIED

USSR

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UDC 591.461.1

VASILEVSKAYA, N. YE., and UBALOVA, G. P.

"Bioelectrical Reactions in the Thalamic Nuclei in Response to Stimulation of the Intestinal Receptors"

Leningrad, Vestnik Leningradskogo Universiteta, No 1, 1970, pp 84-98

Abstract: Stimulation of the intestinal receptors of anaesthetized cats with hydrochloric acid (0.25-1%) and sodium chloride (5-15%) solutions was followed by two forms of bioelectrical activity in the thalamic nuclei and motor cortex: (i) changes in the background rhythms and (ii) appearance of evoked potentials. The particular response varied largely with the depth of anaesthesia. The background reactions, elicited by light anaesthesia, were highly variable: depression of electrical activity, synchronization, or decrease/increase in amplitude without a change in frequency, and vice versa. The evoked potentials were likewise variable in configuration, duration, amplitude, speed and frequency of appearance.

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YASILEVSKAYA, V.I.

SPPS 59008
6-73

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XIV-11. STUDY OF THE STRUCTURAL PERFECTION OF THE HETEROPHASED Si-Ge SYSTEM

[Article by V. I. Yasilevskaya, L. I. Ivatenko, Ye. H. Kistovskiy, I. V. Pankov, A. V. Stashuk, Kiev; *Kovkobilbrak, III Sibirskiy nauchno-issledovatel'skiy tsentr Poluprovodnikoviy Kristalloy I Pribor*, Krasnodar, 12-17 June 1972, p 203]

The structural perfection of the heterophase Si-Ge system obtained by the method of sublimation of Si on the Ge substrate in the temperature range of 470-490°C at a growth rate of 0.1 micron/minute was investigated using the x-ray topographic diffraction and metallographic methods. It was demonstrated that the degree of structural perfection of Si films on Ge is lower than the Ge film on Si. A sharp increase in the halfwidth of the rocking curves of the double-crystal spectrometer obtained from the film and the substrate was detected by comparison with the values characteristic of ideal crystals. The x-ray topography, however, did not reveal clear fragmentary structure characteristic of Ge film grown on Si substrates. The cause of this phenomenon is discussed.

USSR

UDC 669.71.042.6

MIKHAYLOV, K. N., GAVRILOV, S. S., VASILEVSKIY, A. M., MARCHENKO, A. M.,
FOL'KHIN, G. D., and PEGHENEV, V. S.

"Casting of Ingots of Aluminum Alloys in Multiple-Crystallizer Systems"

Tekhnol. legkikh splavov. Nauchno-tekhn. byul. VILSa [Technology of Light Alloys. Scientific and Technical Collection of All-Union Institute of Light Alloys], No. 4, 1970, pp. 30-34, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No. I G113 by G.Svodtseva).

Translation: A 24-crystallizer system for casting of aluminum alloy ingots 112, 145, and 165 mm in diameter on a single casting machine from a single tap hole has been developed and tested in order to increase the productivity of labor and casting equipment. A diagram and drawing of the installation are presented. 3 illustrations.

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3

USSR

UDC 669.71.042.6

MIKHAYLOV, K. N., GAVRILOV, S. S., VASILEVSKIY, A. M., MARCHENKO, A. M.,
FOL'KHIN, G. D., and PEGHENEV, V. S.

"Casting of Ingots of Aluminum Alloys in Multiple-Crystallizer Systems"

Tekhnol. legkikh splavov. Nauchno-tekhn. byul. VILSa [Technology of Light Alloys. Scientific and Technical Collection of All-Union Institute of Light Alloys], No. 4, 1970, pp. 30-34, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No. I G113 by G.Svedtseva).

Translation: A 24-crystallizer system for casting of aluminum alloy ingots 112, 145, and 165 mm in diameter on a single casting machine from a single tap hole has been developed and tested in order to increase the productivity of labor and casting equipment. A diagram and drawing of the installation are presented. 3 illustrations.

1/1

USSR

UDC 681.326

PRZHIYALKOVSKIY, V. V., SMIRNOV, G. D., PYKHTIN, V. YA., VASTILEVSKIY, A. N.,
ZAPOL'SKIY, A. P., MAL'TSEVA, V. A., IVANOV, G. A., REMOROVA, H. A., REZENMAN,
M. YE., and KUSHNEREV, N. T.

"Processor for Digital Data Processing System"

USSR Authors' Certificate No 305477 Cl. G06 f 15/16, filed 18 Apr 69,
published 29 Jul 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya
Tekhnika, No 5, May 72, Abstract No 5B220F)

Translation: The proposed device can be used in general-purpose computers operating in the binary and decimal number systems, under fixed- and floating-point conditions, and with representation of information in the form of machine levels and alphanumeric symbols, which have the capability of a wide build-up of peripherals. The processor contains arithmetic and logic units broken down into sections, a data store with word addressing and symbolic addressing, a control device to perform operations in accordance with a program routine, built-in multiplex and selector channels to communicate with the set of peripherals operating simultaneously with the arithmetic and logic unit, a symbol isolation unit, a number unit, and a storage address register.

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USSR

UDC 620.17:669.71

VASILEVSKIY, KH., G., and FED'KINA, S. A.

"Anisotropic Characteristics of the AK6 Alloy"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov,
No 8, 1970, pp 65-66

Abstract: An investigation was made of the effect of thermal processing on the structural nonuniformity and the mechanical characteristics of the AK6 alloy. Rods 150 mm in diameter, with nonuniform structure over their cross section after tempering from 520° C and subsequent aging at 1600° C, were tested. Their inner layers, to a depth of 12 mm, had a coarse crystalline structure, with a finer structure in the inner layers. To determine the effect of various types of thermal processing on the nonuniformities of the castings, the rods were cut into six equal segments, five of which were processed in various ways. Table gives the details of the processing for all six of the segments and its effect on the outer layers and inner core. The macro- and microstructures of all six segments were also examined. It was found that reduction of the hardening temperature from 520° + 5° C to 500 + 5° C delays the appearance of the coarse-crystalline ring with conservation of the high durability.

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USSR

UDC 576.12+577.4+611.8

VASILEVSKIY, N. N., ed.

Evolyutsiya, Ekologiya i Mozg (Evolution, Ecology, and the Brain), Leningrad, 1972, 312 pp

Translation:

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USSR

VASILEVSKIY, N. N., *Evolyutsiya, Ekologiya i Mozg*, 1972, 312 pp

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VASILEVSKIY, N. N.

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102. USSR

VASILEVSKIY, N. N.

UDC 611--018,866 : 612.821.2

COLEEN

SO: FOREIGN PRESS DIGEST

27 OCT 1971

"Functional Organization of the Receptive Fields of Cortical Neurons, the Properties of Their Plasticity, and Their Role in the Integrative Activity of the Brain"

Kiberneticheskiye Aspekty v Izuchenii Raboty Mozga, (Cybernetic Aspects of the Study of the Brain's Functioning), Moscow, Nauka Publishing House, 1970, pp 128-145

Abstract: Data on the characteristics of the plastic properties of individual regions of the receptive field in cortical neurons of various types is presented. In the first series of experiments, the characteristics of the change in the activity produced by repeated application of stimuli (that is, by the dying down of the preliminary reaction to an indifferent stimulus) were studied. In the second series of experiments, the characteristics of the activity of cortical neurons of various types were investigated during the production of temporary associations in a model of the defense reflex.

The reaction elicited from cortical neurons with a specific receptive field is the most stable and essentially does not change, neither during the dying down of the preliminary reaction nor during the development of temporary associations. On the

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29 Oct 71

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FPD:CYBERNETICS

USSR

VASILEVSKIY, N. N., Kiberneticheskiye Aspekty v Izuchenii Raboty Mozga, Nauka Publishing House, 1970, pp 128-145.

other hand, the activity produced by the same situations in neurons with a nonspecific receptive field displays a marked plasticity. When the preliminary reaction dies down, impulsion either disappears completely or slows down substantially, during which the action of urgent new stimuli releases the reaction that had died down. During the development of temporary associations, intensified impulsion is observed when an isolated action of a conditioned stimulus occurs. In this way, neurons whose receptive fields have an associative type of organization possess essentially plastic properties.

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USSR

UDC 612.822.3.08

BATUYEV, A. S., VASILEVSKIY, N. N., ZIMENKO, N. V., TAIROV, O. P., and KARANYAN, L. A., Laboratory of the Physiology of the Motor Analysor, Physiological Institute imeni A. A. Ukhtomskiy, Leningrad University, and Department of Ecological Physiology, Institute of Experimental Medicine, Academy of Medical Sciences USSR

"A Simple Method of Recording Cerebral Neuronal Activity in Alert Animals"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 11, 1972, pp 1774-1776

Abstract: In preliminary surgery performed on the anesthetized animal, the head is held in a standard stereotaxic apparatus, the frontal bones (if the frontal cerebral lobes are to be investigated) are opened and the periostemu is removed, two screws are firmly implanted in each temporal bone, and the edges of the wounds are sealed with protacrylon. Penicillin is administered, and a certain period is allowed for recovery from surgery. Prior to the actual experiments, the animal is trained for several days to become accustomed to the motionless position in the modified stereotaxic instrument SEZh-1 or SEZh-2. During the test, the head is affixed to the stereotaxic instrument by means of the implanted screws. Holes are drilled in the frontal bones (painless

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USSR

BATUYEV, A. S., et al., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov,
Vol 58, No 11, 1972, pp 1774-1776

because of absence of periosteum), a local anesthetic is applied to the dura mater, the meninges are pierced, the recording electrode is inserted into the brain (with one of the implanted screws serving as the indifferent electrode), and the edges of the wound are covered with warm vaseline or agar. After completion of the test and withdrawal of the electrode, the opening is sealed with wax or dental cement. If proper antiseptic measures are taken, one chronic animal can be used for over 2 months, with three experiments performed each week.

2/2

Single Crystals

USSR

UDC 546.289:548.55

ROMANENKO, V. N., BESSONOVA, N. V., VASILEVSKIY, S. A., LAVINZON, D. I.,
MALOROSSIIYANOV, V. S., OSTANINA, K. V., and SMIRNOV, YU. M.

"Investigation of Programmed Growing of Germanium Single Crystals"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 10,
No 3, Mar 74, pp 536-539

Abstract: A more detailed program for growing single crystals of germanium was compiled and studied which made it possible to control the process parameters (rate of elongation and angular rotation velocity) simultaneously. With simultaneous control of the elongation and angular rotation rates the constancy of crystal diameter can be maintained, thus yielding a crystal with a constant resistivity throughout. This same control also aids in keeping impurity content low and uniformly distributed. Two figures, 11 bibliographic references.

Acc. No. **AP0053458**

Abstracting Service:
CHEMICAL ABST.

5170

Ref. Code:
UR 0366

110742n Synthesis of some n-(thio acyl) amino acids, their S-derivatives, and related compounds. Vasilevskii, V. L.; Georgiadis, Kharalambos; Abdel-Maged, Ibrahim M. (Univ. Druzhby Nar. im. Lunumby, Moscow, USSR). *Zh. Org. Khim.* 1970, 6(2), 244-9 (Russ). The reaction of $RCHBrCONHCH_2CO_2H$ (I) with $R'OCS_2K$ gave 60-93% $RCH(S,COR')$ CONHCH₂CO₂H (II) (R and R' given); Me, H; Et, H; Bu, H; H, iso-Pr; Me, Me; iso-Pr, Me; and Et, Me. Ammonolysis of II gave $RCH(SH)CONHCH_2CO_2H$ (III). This reaction path gave better yields of III than other routes: $NaS + I \rightarrow III$ or $Na_2S_2 + I \rightarrow [RCH(CONHCH_2CO_2H)S]_2$ (IV), followed by redn. of IV with Zn/HCl to III. Reacting III with chlorides gave $RCHXCONHCH_2CO_2H$ (V) [X is SCH₂Ph or 2,4-(O₂N)₂C₆H₃S]. Similarly, other IV were prepd. (R is iso-Pr) (X given): EtOCS₂, BuOCS₂, AcS, SO₂H, PhCH₂S, 2,4-(O₂N)₂C₆H₃S, iso-PrCH(CONHCH₂CO₂H)S, iso-PrCH(CONHCH₂CO₂H)S₂, iso-PrCH(CONHCH₂CO₂H)SO₂. The following $RCHXCONHCONH_2$ were also prepd. (R and X given): iso-Pr, EtOCS₂; iso-Pr, PhCH₂S; iso-Pr, iso-Pr with $RCH(CONHCONH_2)S$; iso-Pr, AcS; Et, EtOCS₂; and Et, EtCH(CONHCONH₂)S₂. Reacting $ClCH_2CONHCH_2CO_2H$ with Na₂S gave $S(CH_2CH_2CONHCH_2CO_2H)_2$. Oxidn. of $S(CH_2CH_2CONHCH_2CO_2H)_2$ with KMnO₄ gave $O_2S(CH_2CH_2CONHCH_2CO_2H)_2$ (R is Me, CH₂CO). Similarly, oxidn. of III gave $RCH(SO_2H)CONHCH_2CO_2H$. Condensation of I with PhCH₂SH gave directly V (X = SCH₂Ph). CPJR

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1/2 024
UNCLASSIFIED
TITLE--IMMUNODIFFUSION ANALYSIS OF PROTEINS SYNTHETIZED BY SINGLE SPLENIC
COLONY OF HEMATOPOIETIC CELLS -U- PROCESSING DATE--13NOV70
AUTHOR--VASILEYSKIY, S.S.
COUNTRY OF INFO--USSR
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,
NR 6, PP 120-123
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SPLEEN, HEMATOPDESIS, PROTEIN, IMMUNODIFFUSION TEST, BIOLOGIC
STAIN, ELECTROPHORESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/0576 STEP NO--UR/0219/70/049/005/0120/0123
CIRC ACCESSION NO--AP0131199
UNCLASSIFIED

2/2 024

CIRC ACCESSION NO--AP0131199

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HEMATOPOIETIC COLONY IS PUNCTURED BY A GLASS NEEDLE IN TANGENTIAL DIRECTION. A DROP OF THE MATERIAL IS SQUEEZED OUT AND SUSPENDED IN 2 MM PRIME3 ISOLOGOUS SERUM OR BLOOD. A SHEAR MADE FROM THE SUSPENSION IS STAINED AFTER GIEMSA. A SECOND DROP OF THE MATERIAL IS SQUEEZED OUT ON THE MOIST CELLOPHANE MEMBRANE OF STEINER'S GLASS CELL COVERED IMMEDIATELY AFTERWARDS WITH PARAFFIN OIL AND INCUBATED WITH C PRIME14 AMINO ACID. 1.0 MM PRIME3 OF AGAR SOLUTION SHOULD BE INTRODUCED UNDER PARAFFIN OIL, MIXED WITH THE MATERIAL AND ALLOWED TO CONGEAL. AGAR SLAB IS SEPARATED FROM THE CELLOPHANE, WASHED WITH LIGHT PETROLEUM AND INSERTED INTO THE WELL MADE IN THE MAIN AGAR PLATE, WHICH IS TO BE USED FOR IMMUNOELECTROPHORESIS. A HIGH YIELD COULD BE OBTAINED ONLY WHEN BOTTOM SLAB TECHNIQUE IS USED.

FACILITY: INSTITUTE OF BIOPHYSICS OF THE USSR MINISTRY OF PUBLIC HEALTH, MOSCOW.

UNCLASSIFIED

USSR

UDC 681.828.083.84

VASILEVSKIY, YU. A. and VOLODINA, A. P.; State Scientific-Research Institute
of Chemical-Photographic Design

"New Magnetic Recording Carriers"

Moscow, Tekhnika Kino i Televideniya, No 6, 72, pp 14-21

Abstract: Film with gamma-iron oxide carrier has been undergoing significant improvement for some 35 years, but the inherent physical and technological difficulties associated with this oxide render any further advance in this line improbable. For this reason, new carriers are being sought, and among these chromium dioxide appears the most promising.

The authors obtained pure CrO_2 by decomposing CrO_3 under high pressure in oxygen, and from this prepared modified CrO_2 by adding tellurium and tin, with the formula $\text{Cr}_{0.989}\text{Te}_{0.01}\text{Sn}_{0.001}\text{O}_2$. Tape was prepared from both substances. Physical properties of the two carriers and of the corresponding tapes were determined, and compared with those of conventional iron-oxide tape. The modified CrO_2 tape was found to be superior to conventional tape in several important respects, for example thickness and frictional properties; but its practical use is limited to operating temperatures not higher than $60-70^\circ\text{C}$. The new tape offers distinct advantages in some situations, but will not generally replace iron-oxide tape, with its stable and relatively inexpensive carrier.

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1/2 022

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--TRANSAMINASE ACTIVITY OF THE BLOOD IN PULMONARY TUBERCULOSIS
PATIENTS TREATED WITH SECOND SERIED ANTIBACTERIAL PREPARATIONS -U-

AUTHOR--VASILIK, G.V.

COUNTRY OF INFO--USSR

V

SOURCE--VRACHEBNOYE DELO, 1970, NR 3, PP 60-62

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TUBERCULOSIS, LUNG, TRANSAMINASE, ANTITUBERCULAR DRUG, LIVER
FUNCTION, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1986/0960

STEP NO--UR/0475/70/000/003/0060/0062

CIRC ACCESSION NO--AP0102899

UNCLASSIFIED

272 022

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102899

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF 135 PATIENTS TREATED FOR 3 TO 4 MONTHS WITH ETHIONAMIDE, PYRASINAMIDE AND ETHOXIDE REVEALED THAT THESE PREPARATIONS INSIGNIFICANTLY ELEVATE THE ACTIVITY OF GLUTAMICOLANINE TRANSAMINASE, THE ACTIVITY GLUTAMICO ASPARTIC TRANSAMINASE REMAINING UNCHANGED. GIVEN IN ROUTINE DOSES THE ABOVEMENTIONED PREPARATIONS DO NOT INTERFERE WITH THE FUNCTIONAL STATE OF THE LIVER. DETERMINATION OF THE BLOOD SERUM TRANSAMINASE ACTIVITY IS CONSIDERED A RATHER SENSITIVE TEST OF LIVER FUNCTION IN PATIENTS WITH TUBERCULOSIS TREATED WITH SECOND SERIES ANTITUBERCULAR DRUGS.

UNCLASSIFIED

1/2 014

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--CHARACTER OF THE INCREASED FREQUENCY OF THE REVERSION OF THE THYMINE MUTATIONS IN ESCHERICHIA COLI K-12 ON ENRICHED MEDIUM -U-

AUTHOR--(02)-VASILIAUSKAS, J., BISTRICKAITE, G.

COUNTRY OF INFO--USSR

SOURCE--GENETIKA 1970, 6(3), 59-64 ✓

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ESCHERICHIA COLI, THYMINE, BACTERIA MUTATION, CHLORAMPHENICOL, GENOTYPE, CULTURE MEDIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1140

STEP NO--UR/0473/70/006/003/0059/0064

CIRC ACCESSION NO--AP0130168

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130168

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ENRICHMENT OF ADAM'S MEDIUM WITH THE BROTH OF HOTTINGER INCREASED THE YIELD OF THYMINE REVERTANTS. THE MAGNITUDE OF INCREASE DEPENDED ON THE GENOTYPE OF BACTERIAL CELLS. CHLORAMPHENICOL (2 MUG-ML OF MEDIUM) DECREASED THE AMT. OF REVERSE THYMINE MUTATIONS CAUSED BY ADDN. OF BROTH. ENRICHMENT OF THE MEDIUM WITH THYMINE (0.15 MUG-ML) ALSO CAUSED AN INCREASE OF THE REVERSION FREQUENCY OF THE THYMINE MUTATIONS, BUT ONLY IN THE STRAINS HAVING ONE THYMINE MUTATION IN THE GENOTYPE. FACILITY: INST. BOT., VILNIUS, USSR.

UNCLASSIFIED

USSR

UDC 621.315.592:546.24'48

VASILISHIN, A. P., VORONKOV, E. N., MURAV'YEV, L. N.

"Condensation of Thin Layers of Cadmium Telluride in Conditions Close to Equilibrium"

Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-issled, rabot za 1968-1969 gg. (Apr. 1970g). Sekts. Elektron. tekhniki, Podsekts. Poluprovodnikovyykh priborov. (Report of the Scientific-Technical Conference on the Results of Scientific-Research During 1968-1969. (Apr. 1970), Electronic Technology Section. Semiconductor Devices Subsection), Moscow, 1969, pp 115-121 (in RZh--Elektronika i yeye primeneniye, No 3, Mar 70, Abstract No 3B115)

Translation: Films are studied of CdTe condensed in conditions close to equilibrium on substrates of quartz, pyroceramic, and molybdenum, heated beforehand to temperatures of 540--650°C. It is shown that at a given temperature regime the number and size of the nuclei depend on the time lag. With an increase of the temperature for heating of the substrates, the number of nuclei decreases and the size increases. The most perfect film was prepared on a molybdenum substrate (the density of dislocations was two orders of magnitude lower in 1/2

USSR

VASILISHIN, A. P., et al. Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot az 1968-1969 gg. (Apr. 1970g). Sekts. Elektron. tekhniki. Podsekts. Poluprovodnikovyykh priborov. (Report of the Scientific-Technical Conference on the Results of Scientific-Research During 1968-1969. (Apr. 1970). Electronic Technology Section. Semiconductor Devices Subsection), Moscow, 1969, pp 115-121 (in RZh--Elektronika i yeye primeneniye, No 3, Mar 70, Abstract No 3B115)

comparison with substrates of quartz and pyroceramic). A decrease of the density of dislocations facilitates an improvement of the electrophysical characteristics of devices prepared on the base of CdTe film. 2 ref. F. Kh.

2/2

- 152 -

USSR

UDC 621.315.592:546.24'48

V
VASILISHIN, A.P., VORONKOV, E.N., and MURAV'YEV, L. N.

"Condensation of Thin Cadmium Telluride Layers Under Close-to-Equilibrium Conditions"

Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968--1969 gg. (apr. 1970 g.). Sekts. Elektron. tekhniki. Podseks. Poluprovodnikovyykh priborov (Reports of the Scientific-Engineering Conference on the Results of Scientific Research Work during 1968--1969 (Apr. 1970). Section of Electronic Engineering, Subsection of Semiconductor Instruments), Moscow, 1969, pp 115-121 (from RZh-Metallurgiya, No 4, Apr 70, Abstract No 4G399)

Translation: Films of CdTe, condensed under close-to-equilibrium conditions on quartz, pyroceramic, and Mo substrates, preheated to 540--650° C, were investigated. It was shown that under given conditions, the number and size of seeds depends on the heating time. The number of seeds decreases and the size increases with increasing heating time. A more perfect film was obtained on a Mo substrate (density of dislocations lower by two orders of magnitude) as compared with quartz and pyroceramic substrates. Decreased density of
1/2

VASILISHIN, A.P., et al., Dokl. Nauchno-tekhn. konferentsii po
itogam nauchno-issled. rabot za 1968--1969 gg. (apr. 1970 g.).
Sekts. Elektron. tekhniki. Podsekts. Poluprovodnikovyykh priborov,
Moscow, 1969, pp 115-121

dislocations contributes to the improvement of electrophysical
characteristics of instruments made with CdTe films. (from RZh A i R)

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- 49 -

VASILISHIN M.T.

Acc. Nr.: AN0104123

Ref. Code: UR 9003

TITLE-- ANNOUNCEMENT OF THE COMMITTEE ON LENIN AND STATE PRIZES, U.S.S.R.

NEWSPAPER-- IZVESTIYA, MAY 28, 1970, P 4, COLS 1-5

49

ABSTRACT-- NINETY ONE BASIC AND APPLIED RESEARCH WORKS HAVE BEEN NOMINATED FOR THE STATE PRIZES. TWO OF THESE, "THE MULTI-PURPOSE INDUSTRIAL HELICOPTER KA-26", BY N. I. KAMOV, V. B. ALPEROVICH, V. B. BARSHEVSKIY, A. A. DMITRIYEV, G. I. IOFFE, M. A. KUPFER, L. A. POTASHNIK, N. N. PRIOROV, A. G. SATAROV, I. M. VEDENEYEV, S. B. BREN, AND V. A. NAZAROV, AND "THE DEVELOPMENT OF TURBOFAN JET ENGINES NK-8 AND NK-8-4, AND THE DEVELOPMENT AND REDUCTION TO SERIAL PRODUCTION A SYSTEM OF TECHNOLOGICAL PROCESSES WHICH ASSURED WIDE USES FOR TITANIUM ALLOYS", BY N. D. KUZNETSOV, M. T. VASILISHIN, V. A. KURGANOV, P. M. MARKIN, V. D. RADCHENKO, P. A. SUKHOV, A. A. MUKHIN, V. G. SHITOV, G. I. MUSHENKO, L. A. SHKODO, AND G. P. DOLGOLENKO, HAVE BEEN SUBMITTED BY THE MINISTRY OF THE AVIATION INDUSTRY.

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Reel/Frame
19870555

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Acc. Nr.: ANO104123

"A SERIES OF INVESTIGATIONS INTO THE DYNAMICS OF A BODY WITH FLUID-FILLED CAVITIES", /65-68/, BY N. N. MOISEYEV, A. A. PETROV, V. V. RUMYANTSEV AND F. L. CHERNOUSKO AND "ULTRA HIGH PRECISION JIG BORING MILLS WITH 1,000 X 1,600 AND 1,400 X 2,240 MM PLATENS", BY A. I. KIR, YANOV, V. G. ABRAMOVICH, I. V. GUTKIN, A. S. ALIMPIYEV, G. B. PAUKOV, AND A. S. YEGUDKIN, HAVE BEEN SUBMITTED BY THE COMPUTATION CENTER OF THE ACADEMY OF SCIENCES AND THE MINISTRY OF THE MACHINE TOOL CONSTRUCTION AND TOOL INDUSTRY, RESPECTIVELY.

"THE RADICALLY IMPROVED MELTING TECHNOLOGY OF CRITICAL-PURPOSE HIGH-ALLOY STEELS AND ALLOYS OF IMPROVED QUALITY ACHIEVED BY THE INERT GAS TREATMENT OUTSIDE THE FURNACE", BY YU. V. GERASIMOV, O. M. CHEKHOV, N. V. SIDOROV, S. K. FILATOV, B. A. CHEREMNYKH, R. M. KHAYRUTDINOV, I. P. BARMOTIN, L. K. KOSYREV, K. P. BAKANOV, N. N. VLASOV, P. I. MELIKHOV, AND N. A. TULIN, HAS BEEN SUBMITTED BY THE ZLATOUST METALLURGICAL PLANT.

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Real/Frame
19870556

K2

Refractory Materials

USSR

UDC 666.764:621.928.37

5

MARANTS, A. G., GUTMAN, V. I., All-Union Institute of Refractories; FRANTOVA, E. S., ZEGER, I. Ya., VASILIVITSKIY, A. V., KREYDLIN, P. N., All-Union Scientific Research, Planning, and Design Institute of Metallurgical Machinery; ROMANOVSKIY, L. B., KOREN, L. N., and KOSTYRYA, Yu. F., Dnepropetrovsk Metallurgical Institute

"Prospects of the Application of the Melting Cyclone for the Production of Melted Refractories"

Moscow, Ogneupory, No 5, 1973, pp 50-54

Abstract: The process of cyclone melting was investigated with a view to produce melted refractories of the magnesium-spinel and brazilite-corundum types. Experiments were carried out at the Institute of the Problems of Material Science of the Academy of Sciences UkrSSR. The experiments indicated the possibility of applying melting cyclones with the use of a blast enriched with oxygen for the production of cast fused refractories with a 1800-1900°C fusion temperature in which the melt aggregates in the warming forehearth for aftercasting into molds. The dust removal in cyclone melting does not exceed 5%, thus ensuring the production of a melt which is close to the initial charge in chemical composition. The optimum content of oxygen in the blast at an approximate natural gas consumption of 1.5 nm³/kg charge was determined.

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USSR

MARANTS, A. G., et al., Ogneupory, No 5, 1973, pp 50-54

The properties of the produced materials are analyzed. Four figures, three tables, three bibliographic references.

(5)

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UR 9022

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20

AUTHOR-- VASILIVITSKIY, A., ENGINEER

TITLE-- PURE STEEL

NEWSPAPER-- SOVETSKAYA ROSSIYA, JANUARY 24, 1970, P 4, COLS 1-2

ABSTRACT-- THE UKRAINIAN SCIENTIFIC-RESEARCH INSTITUTE OF METALS HAS DESIGNED AND CONSTRUCTED A PILOT INSTALLATION FOR CASTING STEEL UNDER CONTROLLED PRESSURE /URSD. ITS OPERATION CONSISTS IN PLACING THE LADLE WITH MOLTEN METAL INTO A CHAMBER LOCATED UNDER THE INGOT MOLD. THE CHAMBER'S TOP COVER HAS A PIPE, MADE FROM A REFRACTORY MATERIAL, BUILT INTO IT. THE LOWER END OF THE PIPE IS PLACED INTO THE LADLE WITH MOLTEN METAL WHILE ITS TOP END IS CONNECTED TO THE MOLD. AFTER THE CHAMBER IS SEALED, AIR OR AN INERT GAS IS PUMPED INTO IT FORCING THE METAL INTO THE MOLD. AS SOON AS ONE MOLD IS FILLED, THE PRESSURE IS REDUCED, THE PIPE VALVE IS SHUT, AND THE MOLD IS REPLACED BY ANOTHER. A SLAB MADE BY THE NEW TECHNIQUE NEED NOT BE CROPPED OR SCARFED. THE WASTE IS REDUCED FROM 18 PERCENT TO 3 PERCENT.

19570974

18

USSR

UDC 613.20.014+664.8

BARHENKO, I. P., and VASILIIY, S. G., Kiev Medical Institute

"The Question of the Effect of Food Additives on the Animal Organism," pp 68-71

Stolmakova, A. I., et al (Editors), Factory Vneshney Sredy i ikh Znacheniiye dlya Zdorov'ya Naseleniya (Factors in the External Environment and Their Significance for the Health of the Population), Kiev, "Zdorov'ya," 1969, 188 pp

Abstract: In a chronic sanitary toxicological experiment, the effect of sorbic acid and sodium glutamate, substances used as food additives, on the animal organism was studied.

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- 87 -

173 010

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--THE PERIODICAL SOLUTIONS OF DIFFERENTIAL SYSTEMS WITH A SMALL
PARAMETER IN THE DERIVATIVES, CLOSE TO DISCONTINUOUS ONES -U-
AUTHOR--(03)--VASILIYEVA, A.B., TUPCHIYEV, V.A., YARKIN, A.N.

COUNTRY OF INFO--USSR

SOURCE--FIFTH INTERNATIONAL CONFERENCE ON NONLINEAR OSCILLATIONS, KIEV,
AUGUST 25TH SEPTEMBER 5TH, 1969. ABSTRACTS OF PAPERS, KIEV, 1969, 267 PP
DATE PUBLISHED-----69

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--PERIODIC SOLUTION, DIFFERENTIAL EQUATION SYSTEM, VECTOR
FUNCTION, ASYMPTOTIC METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1532

STEP NO--UR/0000/69/000/000/0001/0267

CIRC ACCESSION NO--AT0130450

UNCLASSIFIED

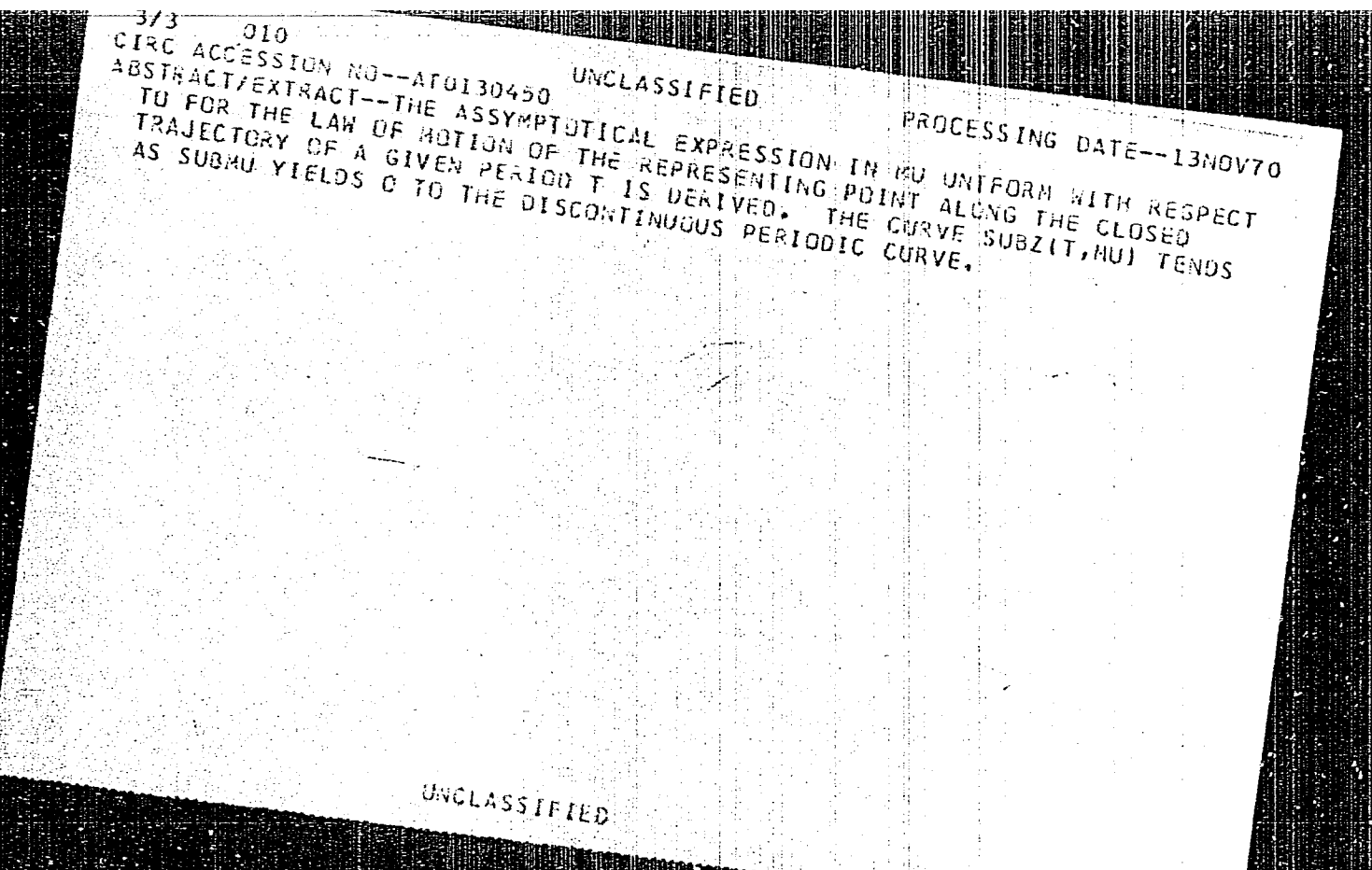
2/3 010
CIRC ACCESSION NO--ATQ130450

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYSTEM $\mu \dot{z}$ DIVIDED BY DT EQUALS $Z(Z)$ WHERE Z IS A TWO DIMENSIONAL VECTOR, μ IS GREATER THAN ALPHA IS A SMALL PARAMETER, IS CONSIDERED. 1. LET THE SYSTEM (1) POSSESS ON THE PHASE PLANE A CELL CONSISTING OF TWO SADDLE POINTS A AND PRIMEBETA CONNECTED WITH SEPARATRICES, AND FILLED WITH CLOSED TRAJECTORIES SURROUNDING THE STATIONARY POINT INSIDE THE CELL. IF ONE TAKES ONE OF THESE CLOSED TRAJECTORIES SUFFICIENTLY CLOSE TO THE CELL BOUNDARY FORMED BY SEPARATRICES, THEN THE MOTION OF THE REPRESENTING POINT ALONG THIS TRAJECTORY WILL BE OF NONUNIFORM CHARACTER: IT WILL BE SLOW NEAR THE SADDLES AND FAST FAR FROM THEM. IN THE μ MINUS 0 LIMIT A DISCONTINUOUS CYCLE IS GENERATED. 2. THE ASYMPTOTICAL REPRESENTATIONS FOR THE TIME OF PASSING THROUGH DIFFERENT PARTS OF THE ABOVE CLOSED TRAJECTORY AND FOR THE PERIOD OF THIS MOTION ARE OBTAINED IN TERMS OF A SMALL PARAMETER δ CHARACTERIZING THE PROXIMITY OF THE TRAJECTORY TO THE SEPARATRICES. 3. AN ASYMPTOTICAL RELATION BETWEEN TIMES T_{SUBA} AND T_{SUBB} OF THE PRESENCE OF THE REPRESENTING POINT NEAR THE SADDLES SUBA (FORMULA SHOWN ON MICROFICHE). 5. ANALOGOUS RESULTS HOLD FOR THE CELL CONSISTING OF MORE THAN TWO SADDLES. 6. A SIMILAR METHOD IS USED TO INVESTIGATE THE CASE OF THE CELL WITH ONE SADDLE (I. E. THE CASE OF LOOP OR DOUBLE LOOP), AND BETA IS OBTAINED. IN THE HIGHER ORDER APPROXIMATION (FORMULA SHOWN ON MICROFICHE) ARE CHARACTERISTIC NUMBERS OF THE SADDLES, L MINUS 1 OR 2 DEPENDING ON THE CHOICE OF SEPARATRIX, NO MATTER WHICH ONE). 4.

UNCLASSIFIED



1/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--HOMOPHASE AND HETEROPHASE ACYLATION OF ALIPHATIC AMINES -U-
AUTHOR--(03)-VASILKEVICH, I.M., PISKOVITINA, G.A., SMIRNOVZAMKOV, I.V.

COUNTRY OF INFO--USSR

SOURCE--DOPOV. AKAD. NAUK UKR. RSR, SER. B 1970, 32(3), 243-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALIPHATIC AMINE, METHYLENE, BENZENE, ADSORPTION, ISOTHERM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0797

STEP NO--UR/0442/70/032/003/0243/0246

CIRC ACCESSION NO--AT0132895

UNCLASSIFIED

2/2 015
CIRC ACCESSION NO--AT0132895
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. THE CONSTS. OF THE 2ND ORDER RATE OF ME(CH SUB2) SUBN NH SUB2 (I, N EQUALS 2-5) BENZOLATION IN C SUB6 H SUB6 WERE 1500-2000 L. PER MOLE SEC AT 18-23DEGREES. THE RATE OF INTERFACE BENZOLATION (H SUB2 O-C SUB6 H SUB6) DEPENDED ON I CONCH. IN THE ADSORPTION LAYER ON THE PHASE INTERFACE. ADSORPTION ISOTHERMS OF I (N EQUALS 2-4) WERE DETD. ON THE INTERFACE H SUB2 O-C SUB6 H SUB6 AT 20DEGREES.
FACILITY: INST. ORG. KHIM., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 621.357.6:66.067.3(088.8)

TARASOV, Yu. A., GARBUZOV, N. V., TSAKHNOVSKIY, I. M., VASIL'KO, N. P.

"Galvanoplastic Method of Manufacture of Metal Filters"

USSR Author's Certificate No 305209, Filed 27/01/70, Published 13/07/71,
(Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No
3 L331 P by K. S. Pedan).

Translation: A galvanoplastic method is suggested for the manufacture of metal filters by means of electrolytic precipitation of a metal layer onto a matrix, differing in that in order to increase the quality of the filters, the process is performed in an electrolyte containing 0.5-4% of a suspension of insoluble organic particles, and the coatings produced are heat treated until the enclosed organic particles are fully burned out. Example. An Ni coating is applied to a matrix from an electrolyte with a composition of (in g/l): $NiCl_2 \cdot 6H_2O$ 300; H_3BO_3 30, temperature 50-55°, D_c 2-4 a/dm² and pH 4-4.5. When a powder of an insoluble organic compound such as polyethylene is dispersed in this electrolyte at between 0.5 and 4% with subsequent heat treatment at 400-450° for 1-1.5 hr, it is possible to regulate the quantity of pores in the Ni coatings produced. The pore size in the filter can be changed by changing the dimensions of the particle introduced to the electrolyte. It is pointed out that this method allows the production of filters with high filtering capacity of many metals and alloys.

USSR

UDC: 539.3

VASIL'KOV, B. S.

"Application of the Method of Finite Elements in Displacements to Calculation of Shells, Convolutions, Shell-Beam and Massive Systems"

Tr. TsNII stroit. konstruksiy (Works of the Central Scientific Research Institute of Structural Elements), 1970, vyp. 13, pp 90-100 (from RZh-Mekhanika, No 7, Jul 71, Abstract No TV157)

Translation: The surfaces of cylindrical shells and shells of double curvature are replaced by inscribed convolutions. The faces of the convolutions are broken up by means of grids into square, rectangular or similar figures which are the finite elements. The known values are assumed to be the longitudinal, transverse and normal displacements of the points of intersection of the grid. It is assumed that the displacements vary according to a linear law between intersection points. A system of algebraic equations is presented for determining displacements. This system is made up on the basis of the principle of possible displacements. Three-dimensional shell-beam and massive systems are analogously calculated. In these cases, the finite elements are: for the shell-beam system -- parts of plates which coincide with the cells of the spatial grid, and for the

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VASIL'KOV, B. S., Tr. TsNII stroit. konstruktsiy, 1970, vyp. 13, pp 90-100
massive systems -- cubes, parallelepipeds and other types of spatial ele-
ments. Algebraic equations which define the displacements of points of
intersection are presented for shell-beam systems. V. P. Il'in.

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USSR

VASIL'KOV, F. V.

UDC 539.4:[624.011.1+624.014]

"Some Problems of Optimal Design of Steel Beams with Prestressed Spanpieces"

V sb. III Mezhdunar. konf. po predvarit. napryazhennym metal. konstruksivam.
T. 2 (Third International Conference on Prestressed Metal Structural Elements,
Vol 2--collection of works), pp 32-40 (from RZh-Mekhanika, No 11, Nov 71,
Abstract No 11V938)

Translation: In 1965-1970, the Moscow Engineering Construction Institute imeni
V. V. Kuybyshev and the State Union Institute for the Design of Metallurgical
Plants performed joint economic and structural studies in the field of sectional
steel beams with prestressed high-strength spanpieces. A study was made of the
lowering of the level of the spanpiece as a means of increasing the economic
effectiveness of such beams. The investigation procedure is described, and
practical recommendations are made with respect to designing single-span beams
with lowered spanpieces.

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USSR

UDC 666.11.01:621.3.019.39

BYURGANOVSKAYA, G. V., Candidate of Technical Science, and VASIL'KOVA, A. A.
"The Radiation-Optical Resistance of Lanthanum Glass"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 1, Jan 72, pp 40-42

Abstract: The influence of the content of lanthanum oxide (La_2O_3) upon the radiation-induced absorption of cerium-containing silicate and borosilicate glass, irradiated by gamma rays and neutrons, is shown. The addition of 10-50 parts of lanthanum oxide by weight into cerium-containing silicate and borosilicate glass somewhat decreases radiation-induced absorption in the visible region of the spectrum. The formation and destruction of coloration centers in lanthanum glass is subject to the usual rules governing alkali silicate glass. The introduction of 1% CeO_2 into lanthanum silicate glass and lanthanum borosilicate glass increases their gamma-resistance by a factor of 80 and 10 (for a dose of 2×10^6 roentgen). The addition of thirty parts of lanthanum oxide by weight to borosilicate glass changes the structure of the coloration centers that are responsible for absorption in the short-wave region, increasing their similarity to the coloration centers observed in alkali silicate glass. One figure, 1 table, 13 references.

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Glass and Ceramics

USSR

UDC 539.12.04.666.11

BYURGANOVSKAYA, G. V., VASIL'KOVA, A. A., and KASUMOVA, L. N.
"Radio-Optical Properties of High Silica Glass"

Moscow, Neorganicheskiye Materialy, Vol 6, No 1, Jan 70, pp 63-69

Abstract: In studies of the radiation stability of industrial glass it has been noted that the effect of cerium in glass with a relatively high silica content (80 wt % SiO₂) is less effective than in other silicate glasses. In order to investigate this phenomenon, a series of types of glass with systematically varying molecular composition of Na₂O·SiO₂ (x = 3, 4, 5, 10, 20) with additions of cerium and iron were fused. It is noted that the "protective" effect of cerium in high-silica glass is low, but increases with an increase in the content of alkali metal oxides in the glass.

The most radiation-stable glass had the composition Na₂O·4SiO₂ with 1 wt % CeO₂. With an increase in silica content in sodium-silicate glass, the proportion of four-valent cerium decreases. In glass with the composition Na₂O·20 SiO₂, the absorption band of the Ce⁴⁺ iron was not detected. The introduction of small additions of B₂O₃ or Li₂O into high-silica glass (up to 1 wt %) increased the induced absorption by increasing the structural sensitivity of the glass to radiation at the expense of formation of additional defects.

USSR

BYURGANOVSKAYA, G. V., et al, Neorganicheskiye Materialy, Vol 6, No 1, Jan 70,
pp 63-69

The negative difference absorption, connected with the destruction of the centers responsible for the adsorption band in the ultraviolet range of the spectrum of unirradiated glass, passes over to the region of positive values for doses which are larger the more intense these bands. A decrease in the regression coefficient of irradiated glass with an increase in silica content arises from the formation of deeper electron traps in the high-silica glass. This is confirmed by thermoluminescence spectra. Complete data from the experiment are tabulated and illustrated graphically.

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- 35 -

UNCLASSIFIED
 TITLE--EQUATION OF EUTECTIC AND PERITECTIC CURVES OR TERNARY SYSTEMS. I.
 DERIVATION OF EQUATIONS -U-
 AUTHOR--(02)--STORONKIN, A.V., VASILKOVA, I.V.
 PROCESSING DATE--13NOV70
 COUNTRY OF INFO--USSR
 SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 699-703
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY, MATERIALS
 TOPIC TAGS--EUTECTIC, TERNARY ALLOY, DIFFERENTIAL EQUATION
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1999/1101
 CIRC ACCESSION NO--AP0123093
 STEP NO--UR/0076/70/044/003/0699/0703
 UNCLASSIFIED

CIRC ACCESSION NO--AP0123093 UNCLASSIFIED PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFERENTIAL AND INTEGRAL
EQUATIONS ARE DERIVED FOR THE EUTECTIC AND PERITECTIC CURVES IN A
TERNARY SYSTEM. THE EQUATIONS ARE EXPRESSED IN TERMS OF THE COMPN. OF
THE SYSTEM AND THE HEAT OF CYRSTN. OF THE COMPONENTS. THE APPLICATION
OF THE EQUATIONS TO AN IDEAL SYSTEM IS DISCUSSED. FACILITY:
LENINGRAD. GOS. UNIV. IM. ZHDANOVA, LENINGRAD, USSR.

UNCLASSIFIED

011
 TITLE--RUBIDIUM AND CESIUM CHLOROALCITES -U- UNCLASSIFIED PROCESSING DATE--EP70
 AUTHOR--SOROKINA, V.V., SMIRNOVA, YE.K., VASILKOVA, I.V.
 COUNTRY OF INFO--USSR
 SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 577-8
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--X RAY DIFFRACTION PATTERN, RUBIDIUM COMPOUND, CESIUM COMPOUND,
 TRICHLORIDE, CALCIUM COMPOUND, MELTING
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--1983/0948
 CTIC ACCESSION NO--AR0053871
 STEP NO--UR/0078/70/015/002/0577/0578
 UNCLASSIFIED

2/2 011
 CIRC ACCESSION NO--AR0053871 UNCLASSIFIED PROCESSING DATE--11SEP70
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONGRUENTLY MELTING RBCACL SUB3
 AND CSCACL SUB3 WERE PREPD. IN AN AUTOCLAVE. THE X RAY POWDER
 DIFFRACTION PATTERN OF RBCACL SUB3 IS GIVEN. DELTA H OF FORMATION OF
 MCACL SUB3 FROM THE CORRESPONDING CHLORIDES IS 5.9 AND 8.7 AND FROM
 ELEMENTS 298.8 AND 302.2 KCAL-MOLE FOR H EQUALS RB AND CS, RESP. DELTA
 H OF DISSOLN. OF EQUIMOLAR CONCNS. OF RBCL AND CACL SUB2 IS MINUS 15.61
 AND OF CSCL AND CACL SUB2 MINUS 15.31 KCAL-MOLE.

UNCLASSIFIED

7/2 . 035 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--PHOTOCHEMICAL CHLORINATION OF METHYLENE CHLORIDE USING LIGHT
FILTERS--U-
AUTHOR--BRATOLYUBOV, A.S., VASILKOVA, L.I. ✓
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGARD) 1970, 43(1), 199-202
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHLORINATION, CHEMICAL REACTION RATE, METHANE, METHYL
CHLORIDE, FILTERATION, PHOTOSYNTHESIS, RADIATION EFFECT/(U)PRK2
RADIATION LAMP
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1218 STEP NO--UR/0080/70/043/001/0199/0202
CIRC ACCESSION NO--AP0104584
UNCLASSIFIED

2/2 035

CIRC ACCESSION NO--AP0104584
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT. THE TITLE CHLORINATION WAS CARRIED OUT IN A CONTINUOUS FLOW 27 TIMES 400 MM REACTOR KEPT AT MINUS 30 DEGREES AND IRRADIATED BY A PRK-2 LAMP. THE PRODUCTS WERE WASHED WITH 1 PERCENT NAOH, DRIED WITH K SUB2 CO SUB3, AND ANALYZED BY GAS LIQ. CHROMATOG. AND IODOMETRY. THE DEGREE OF CHLORINATION DEPENDED ON THE MATERIAL OF THE REACTOR AND FILTER AND DECREASED IN ORDER: QUARTZ, PYREX, MOLYBDENUM GLASS.

UNCLASSIFIED

0123

VASIL KOVA, N.

Computer

VOL. XXIII, NO. 34

I asked the Bureau directors how things stand with software for computers. That, after all, was the initial situation: there are not enough trained specialists, mostly as a result of the lack of specialists. The specialists are going to return to their practical work in industry and other enterprises and, under their own initiative, tackle the so-called enterprise problems.

Zelinskaya's report's findings will result of the computerization of the USSR, with its two billion people. This means that development will find a great market. The Bureau has developed an economic-stimulation plan by which, beginning in 1975, the only for the performance of many plants will be the effect, it is not by chance, that the USSR is going to produce a lot of computers. This will undoubtedly be the main reason for the success of the program. The Bureau's plan for these plants, perhaps such action measures will be taken in the future that will be necessary. It will be the electronic relay will work at the full technical level.

Information For Computers

The first of the reports: HOW DO YOU TALK TO A MACHINE (by Alexander Trovtsov, Moscow, Nov. 3, 1970) reveals a number of interesting facts. The first is that, at the present time, you can't talk to a computer. The second is that the computer is still a very primitive machine, it is necessary to enter all data manually. The third is that the computer is still a very expensive machine, it is necessary to have a lot of money to buy it. The fourth is that the computer is still a very unreliable machine, it is necessary to have a lot of money to buy it. The fifth is that the computer is still a very slow machine, it is necessary to have a lot of money to buy it.

The Lvov System of Computer Management

Computerized in the Soviet Union (by V. Kovalov, L'viv, Nov. 15, 1970). In 1962 the Lvov plant and factory had an electronic computer, the first of its kind in the USSR. It was a Minsk-2 computer. The plant was the first in the USSR to use a computer for its production management. The plant's director, V. Kovalov, reported that the computer had been used for the first time to solve the problem of the plant's production management. The plant's director, V. Kovalov, reported that the computer had been used for the first time to solve the problem of the plant's production management.

Information For Computers

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THE CURRENT DIRECT OF THE SOVIET PRESS

to solve the problems that arise in the course of economic and technical progress.

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Computer

VOL. XXIII, NO. 38

THE CURRENT DEBATE ON THE SILENT PAGES

PAGE 11

of the difficult past, but one which we fully wish our people to see in the light of the future. It is necessary for the people to know the truth about the past, and we must think about the past in the light of the future. The people must know the truth about the past, and we must think about the past in the light of the future. The people must know the truth about the past, and we must think about the past in the light of the future.

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divisions of the country. Why three dissident chapters, not one? ... Here in the United States, already there are many ways of working ... that carries any kind of technical or economic information ...

There is a very real danger of a large-scale ... of all types of information ... to reduce the flow of information ...

The second danger is the danger of ... and constantly ... of all operations ... have been ...

There is a very real danger of a large-scale ... of all types of information ... to reduce the flow of information ...

The second danger is the danger of ... and constantly ... of all operations ... have been ...

BRANDT

Continued from Page 4
 The ... is possible to ... in ... of ... and will allow ...

USSR

UDC: 8.74

GALUSHKIN, A. I., VASIL'KOVA, T. F., SLOBODENYUK, V. I., TYUKHOV, B. P.
"Analysis of the Dynamics of Systems for Recognition of Nonstationary
Patterns"

Tr. Mosk. in-ta elektron. mashinostr. (Works of the Moscow Institute of
Electronic Machine Building), 1971, vyp. 23, pp 210-227 (from RZh-Kiber-
netika, No 4, Apr 72, Abstract No 4V584)

Translation: The article is devoted to analysis of the dynamics of
closed-cycle and open-cycle adaptive systems for recognition of non-
stationary patterns. The use of nonstationary pattern recognition sys-
tems enables consideration of modes of operation which are fundamentally
new for recognition systems, including anticipation of a decision in a
recognition system with finite memory. Authors' resumé.

1/1

USSR

UDC 536.58:537.525

VASIL'KOVSKIY, A. A. and GOL'FENSHTEYN, P. N.

"Contactless Method of Measuring and Stabilizing the Temperature of Electron Emitters in a Vacuum"

Moscow, Metrologiya, No 5, May 73, pp 31-37 -

Abstaact: A method of measuring the temperature of a body emitting electrons in a vacuum is examined along with the possibility of stabilizing the emitter temperature by means of achieving a feedback between the current direction in the circuit of the measuring electrode and the filament voltage of the emitter. Theoretical relationships between temperature of the surface and magnitude of the sustaining potential were determined for tungsten, molybdenum, and tantalum emitters. 3 figures, 1 table, 6 bibliographic references.

1/1

- 69 -

1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INVESTIGATION OF THE CRYSTAL PERFECTION BY THE SINGLE CRYSTAL
SPECTROMETER IN THE LAUE DIFFRACTION CASE -U-
AUTHOR-(04)-SKOROKHOD, M.YA., DATSENKO, L.I., GUREYEV, A.N., VASILKOVSKIY,
A.S.
COUNTRY OF INFO--USSR
SOURCE--UKRAYIN. FIZ. Zh. (USSR), VOL. 15, NO. 5, P. 789-98 (MAY 1970)
DATE PUBLISHED----MAY70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--CRYSTAL DIFFRACTION SPECTROMETER, SINGLE CRYSTAL PROPERTY,
CRYSTAL DEFECT, X RAY SPECTRUM, ABSORPTION EDGE, RADIATION INTENSITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1798 STEP NO--UR/0185/70/015/005/0789/0797
CIRC ACCESSION NO--AP0133703
UNCLASSIFIED

2/2 027
 CIRC ACCESSION NO--AP0133703 UNCLASSIFIED
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF THE
 INVESTIGATIONS OF THE CRYSTAL PERFECTION BY A SINGLE CRYSTAL
 SPECTROMETER WAS SHOWN. THE DIFFERENT FACTORS WHICH CAN INFLUENCE THE
 MEASURED INTENSITIES ARE DISCUSSED. A GOOD AGREEMENT BETWEEN THE
 INTEGRAL FACTORS OF THE ANOMALOUS TRANSMISSION PI SUBI MEASURED BY A
 SINGLE AND DOUBLE CRYSTAL SPECTROMETER WAS OBTAINED. THESE MEASUREMENTS
 WERE CARRIED OUT ON THE CHARACTERISTIC AND CONTINUOUS X RAY SPECTRA.
 THE VALUES CHI SUBIH1 AND CHI SUBIH2 WHICH ARE RELATED TO THE SHORT AND
 LONG WAVE REGIONS OF K EDGE OF ABSORPTION RESPECTIVELY, WERE FOUND FROM
 THE LOGARITHM DEPENDENCE OF THE INTENSITY JUMPS UPON THE CRYSTAL
 THICKNESS. THESE VALUES ARE IN GOOD AGREEMENT WITH THE DATA OBTAINED
 FROM THE MEASUREMENTS PI SUBI MADE BY THE DOUBLE CRYSTAL SPECTROMETER.

PROCESSING DATE--13NOV70

UNCLASSIFIED

USSR

VASIL'KOVSKIY, V. A., KOVTUN, N. M., KUPROYANOV, A. K., NIKITIN, S. A., and OSTROVSKIY, V. F.

"Study of Nuclear Magnetic Resonance in $Gd_x Y_{1-x} Fe_2$ Compounds"
Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 65, No 2 (8), 1973, pp 693-697

Abstract : The nuclear magnetic resonance spectra were measured on gadolinium and yttrium nuclei in $Gd_x Y_{1-x} Fe_2$ compounds at a temperature of 77° K. The contributions to the hyperfine fields in the gadolinium and yttrium nuclei on the part of the nearest neighbors of the gadolinium atom sublattice were evaluated. The primary contribution to the hyperfine fields in yttrium and gadolinium is made by the iron atom sublattice.

The variation of the position of the center of gravity of the nuclear magnetic resonance spectra of gadolinium and yttrium as a function of the atom % concentration of gadolinium and the variation with temperature, of the nuclear magnetic resonance of Gd^{155} in $GdFe_2$ and Y^{89} in YFe_2 are plotted. A table is presented for the probability of replacement of the nearest Gd atoms by a Y atom and the experimental procedure for obtaining and recording the

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VASIL'KOVSKIY, V. A., et al., Zhurnal Eksperimental'noy i Teoreticheskoy fiziki, Vol. 65, No 2 (8), 1973, pp 693-697

nuclear resonance spectra is described in detail. The dependence on composition and temperature of the nuclear magnetic resonance of Gd^{155} , Gd^{157} , and γ^{89} is determined both by the iron and gadolinium sublattices.

2/2

Cytology

USSR

UDC 578.63

BUDANTSEV, A. YU., TSADKINA, YE. G., and VASILOY, YU. V., Department of Memory Problems, Institute of Biophysics, Academy of Sciences USSR, Pushchinona-Oke

"Lyophilization of Histological Material. II. A Vacuum Lyophilizer of Histological Specimens"

Leningrad, Tsitologiya, No 4, 1971, pp 532-535

Abstract: The apparatus designed by the authors consists of a preliminary vacuum pump with a vacuum rubber hose and 3-way vacuum valve connected to a diffusion pump. The valve is used to inject air into the preliminary vacuum pump. The diffusion pump is connected to a drying chamber through a nitrogen entrainment separator, which serves to prevent oil from the drying chamber from entering the drying chamber. A vacuum valve between the pumps and the entrainment separator disconnects the drying chamber from the pumps. A feature of the device is the use of thermocouples to measure the temperature of a specimen at any time, thereby permitting objective determination of the end of lyophilization. The final vacuum in the drying chamber is 10⁻⁵ mm. The temperature of the lyophilized specimens averages -40 to -50°C. Some 10 to 15 specimens can be dried simultaneously. Lyophilization of 10 specimens of brain tissue weighing as much as 1 g takes 12 to 14 hours.

1/1

USSR

UDC 578.088.6

TSADKINA, YE. G., BUDANTSEV, A. YU., and VASILOY, YU. V., Institute of Biological Physics, Academy of Sciences USSR, Pushchino

"Lyophilization of Histological Material. I. Investigation of the Length of Time of Drying"

Leningrad, Tsitologiya, Vol 13, No 3, Mar 71, pp 398-401

Abstract: Lyophilization was studied on an apparatus designed and constructed at the Laboratory of Physiological and Physicochemical Bases of Memory, Institute of Biological Physics, Academy of Sciences USSR. Drying by lyophilization of samples of porolon-water (water content 83.4%), porolon-gelatin-water (porolon treated with a 14-17% solution of gelatin; water content 75.7%), and of various rabbit tissues (hippocampus, lungs, intestine, liver, adrenals, heart) was carried out. The time that was necessary for drying was determined from temperature-time curves. The quantitative relations pertaining to drying by lyophilization could be expressed by the Knudsen-Langmuir equation in the form $m = S t k p \sqrt{M/2 \pi} RT$, where m is the amount of water vaporized during time t from the surface S , G the coefficient of vaporization (the ratio of observed vaporization in vacuo to the maximum

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TSADKINA, YE. G., et al., Tsitologiya, Vol 13, No 3, Mar 71, pp 398-401

value of vaporization), p the vapor pressure, and $k = I - q$, where q is the coefficient of resistance to vaporization produced by the dried layer at the surface. The value of k was in the range of 0.14 - 0.9, 3.9×10^{-3} - 8.4×10^{-2} , and 1.8×10^{-3} - 1.2×10^{-2} for porolon-water, porolon-gelatin-water, and hippocampus tissue, respectively - i.e., the resistance of the dried layer increased in the order porolon water, porolon-gelatin-water, biological tissue.

2/2

TITLE—PREPARATION OF SIPHON AND LADLE CERAMICS USING ARKALYK CLAYS —U—
 UNCLASSIFIED
 PROCESSING DATE--09OCT70
 AUTHOR—(03)—BRUDETSKIY, G.G., KARPOVA, N.D., VASILTSOV, V.M.
 COUNTRY OF INFO--USSR
 SOURCE--OGNEUPORY 1970, 35(2), 1-3
 DATE PUBLISHED—70
 SUBJECT AREAS—MATERIALS
 TOPIC TAGS—CLAY, TECHNICAL STANDARD, REFRACTORY MATERIAL
 CONTROL MARKING—NO RESTRICTIONS
 DOCUMENT CLASS—UNCLASSIFIED
 PROXY REEL/FRAME--1992/1980
 CIRC ACCESSION NO—AP0112944
 STEP NO--UR/0131/70/035/002/0001/0003
 UNCLASSIFIED

007
CIRC ACCESSION NO--AP0112944 UNCLASSIFIED PROCESSING DATE--09OCT70
ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. ARKALYK CLAYS ARE HETEROGENOUS AL
SUB2 0 SUB3 CONTENT AVS. 42-50PERCENT. THE CLAYS, USED IN THE AMT. OF
33PERCENT FOR PRODUCTION OF SIPHON TUBES, ENSURES REQUIREMENTS OF SOVIET
STD. GOST. AT CONCURRENT BURNING OF SKEWBACK BRICKS IT IS POSSIBLE TO
INCREASE TEMP. 50DEGREES, THIS LOWERING POROSITY OF THE BRICKS 1PERCENT.
FACILITY: CHELYAVINSK MET. ZAVOD, CHELYABINSK, USSR.

UNCLASSIFIED

VASIL' TSOV, V.V.

NUCLEAR PUMPING IN MOLECULAR GAS LASERS

JPRS 60244
10 October 1973

Article by V. M. Andriyakhin, V. V. Vasil'tsov, S. S. Kravtsov, and V. P. Rizmenyiy of the Institute of Nuclear Physics of Moscow State University, Imeni M. V. Lomonosov, Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Russian, Vol 63, No 5 (11), 1972, submitted 13 June 1972, pp 1635-1644

The mechanism of the populating of vibrational levels of molecules by electrons produced during the ionization of a gas by the products of nuclear reactions or by a beam of charged particles is examined. It is demonstrated that the mode, which contains the lowest excited level of a molecule, is highly populated by a diffuse stream of electrons, arising in the energy space due to the large negative gradient in the distribution of electrons by energies at the excitation threshold of this level. Criteria for accomplishing population inversion during nuclear pumping are established and it is shown that mixtures based on CO₂ do not satisfy these criteria.