

USSR

UDC: 669.782.43

DOBROVOL'SKAYA, V. I., RATNIKOV, D. G.

"Modeling of the Heat Field in a Rod in the Process of Crucibleless Zone Melting on the EGDA-9/60 Electrical Integrator"

Tr. Vses. N.-I. i Proyekt.-Konstrukt. In-ta Tokov Vysok. Chastoty [Works of All-Union Scientific Research and Planning-Design Institute for High Frequency Currents], 1973, No 13, pp 162-169 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G199, by the authors).

Translation: A method is presented for modeling of the heat field in ingots with axial symmetry in the process of crucibleless zone melting on electrically conducting paper, considering nonlinear boundary conditions. Experiments on models are described, which define the heat field in an Si ingot in the zone of plasticity and produce the distribution of specific power over the length of the ingot, corresponding to the selected zone shape. 4 figures, 1 table, 4 biblio. refs.

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USSR

UDC 546.28

RATNIKOV, D.G., DOBROVOL'SKAYA, V.I., LEV, L.R.

"Electromagnetic Profiling During Non-Crucible Growth Of Silicon Crystals"

Tr. Vses. n.-i. i proyekt.-konstrukt. in-ta tekov vysok chasty (Works Of The All-Union Scientific-Research And Planning-Design Institute Of High-Frequency Currents), 1972, Issue 12, pp 87-93 (from RZh: Elektrotehnika i energetika, No 6, June 1972, Abstract No 6B87)

Translation: A method is described of preparing Si crystals by the electromagnetic profiling method, at the base of which is located the technology of preparing single crystals of circular cross section by non-crucible pulling from the pedestal. A melting inductor was used as a shaper [formobrazovatelya]. The current frequency was chosen for the condition of the maximum electrodynamic effect on the column of the melt at the crystallization front with a minimum thermal effect on the crystals being pulled. It is established that melting of the end of the pedestal and profiling of the crystals can lead to one and the same frequency by one and the same inductor. In the method developed, the requirement on the precision of production and the arrangement of the inductors is higher than with non-crucible melting and pulling of crystals of circular cross sections. 4 ill. 4 ref. V.I.Telyetnikov.

1/1

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USSR

UDC 621.315.592:546.28

DOBROVOL'SKAYA, V. I.

"Effect of Growth Conditions on the Quality of Silicon Crystals Prepared by the Non-Crucible Zone Melting Method"

Tr. Vses. n.-i. in-ta tokov vysok. chastoty (Work of the All-Union Scientific-Research Institute of High-Frequency Currents), Issue 10, pp 103-117 (from RZh--Elektronika i yeye primeneniye, No 3, Mar 70, Abstract No 3B96)

Translation: In this survey, the effect of various factors on the structure of crystals which are being grown is considered. The quality of seed crystal and the inoculation and initial growth rate influence dislocations originating during inoculation. Dislocations distributed in volume are produced by plastic deformations, originating in the growth process under the influence of thermal stresses. For preparation of qualitative single crystals it is necessary to have a flat or slightly convex crystallization front to the melt and to stabilize the thermal conditions in the region of the crystallization front. 11 ill. 1 table. 12 ref. Summary.

1/1

USSR

UDC 621.315.592

RATNIKOV, D. G., DOBROVOL'SKAYA, V. I.

"Investigation of Some Induction Systems of Semiconductor Metallurgy"

Tr. Vses. n.-i. in-ta tokov vysok. chastoty (Works of the All-Union Scientific-Research Institute of High-Frequency Currents), Issue 10, pp 70-80 (from RZh-Elektronika i yeye primeneniye, No 3, Mar 70, Abstract 3B85)

Translation: Calculations are presented for the simplest induction system, consisting of a thin inductive coil encompassing an infinitely long cylinder. The layer of the current in the cylinder, and the active and reactive added resistance are determined. Various induction systems applicable with noncrucible zone melting are experimentally investigated. Recommendations are made with respect to the choice of optimum systems. 10 ill. 2 tables, 1 ref. Summary.

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USSR.

UDC 612.66+612.833.81

OBRAZTSOVA, G. A., DOBROVOL'SKAYA, V. N., FEDOROV, V. K., BOGDANOVA, A. Ye.,  
Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR,  
Leningrad

"The Relation of Training and Long-Term Memory in the Ontogenesis of Rats"

Moscow, Doklady Akademii Nauk SSSR, Vol 204, No 3, 1972, pp 763-765

Abstract: The ontogenetic method of investigation permits discovery of the functional characteristics of the brain activity from the time of their development when the relations are simpler and more available for analysis than in mature animals. A study was made of the characteristics of the relation of the education rate and the retention of the defensive conditioned reflex of active escape in the postnatal ontogenesis of a rat. The reproduction of the developed habit in the case of "complete" and "incomplete" training as a different mechanism [J. A. Deutsch, et al., Nature, No 213, 742, 1967] and with a known degree of training, changes in reflexes are almost never observed even after a prolonged interruption (6-8 months). Thus, the so-called "incomplete" training was used.

The development of a conditioned reflex of active escape takes place most rapidly in month-old baby rats. The dynamics of changes in the number of  
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USSR

OBRAZTSOVA, G. A., et al., Doklady Akademii Nauk SSSR, Vol 204, No 3, 1972, pp 763-765

conditioned reflexes of active escape from experiment to experiment and from combination to combination determined by the linear regression coefficient demonstrate that the least increment is observed in 12-month old rats. The period of optimal training in rats up to 1 year old does not coincide with the period of best retention of memory of the developed habit: when developing the escape reflex, the 1- and 2-1/2-month-old rats were the best, and when checking for retention they were the worst. The basis for poor memory in the defined ontogenesis period is the following: a) more pronounced nature of the induction relations at an early age, b) greater susceptibility of unreinforced associations to interfering effects, c) insufficient myelination of the gray matter of the cerebral cortex.

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USSR

UDC 621.314.57

SOKOLOV, S.D., BEY, YU.M., DOBROVOL'SKIS, T.P., LUPYAN, A.G., FIRSOVA, L.D.,  
AYZENSHEYN, L.S., GURAL'NIK, YA. D.

"System Of Control Of Thyristorized Inverter"

Tr. VNIIT Zh.-d. transp. (Works Of The All-Union Scientific-Research Institute Of  
Railroad Transportation), 1970, Issue 420, pp 69-85 (from REh--Elektronika i yeye  
primeneniye, No 4, April 1971, Abstract No 43665)

Translation: The paper describes a system of control of thyristorized converters [sic] arranged according to the circuit "two reverse stars with an equalizing reactor" or according to a 3-phase bridge scheme which assures turn-on of a large number of series-parallel connected thyristors. In the control circuit, individual (for each thyristor) output current transformers are used. This assures high efficiency and makes it possible to obtain identical currents through the thyristor gates with a considerable dispersion of their input characteristics. The circuit for pulse shaping consists of two 3-loop networks and a discharge thyristor. The first loop produces a steep initial burst, and the remainder the necessary duration of the control pulse. The experimental characteristics are considered of the pulse shapers with various parameters of the current of the output transformers, parameters of the thyristors, and length of the connecting conductors. A block diagram is presented of the modeling on an analog computer of the system for control of thyristors. 10 ill. 2 tab. 4 ref. L.R.

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1/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--PRODUCTION OF REFRACTORY COMPOUND POWDER GRINDING MATERIALS -U-

AUTHOR--(04)-BEZYKORNOV, A.I., DOBROVOLSKY, A.G., KOVALCHENKO, M.S., FOMIN, L.M.

COUNTRY OF INFO--USSR

SOURCE--POROSHKOVAYA MET., FEB. 1970, (2), 108-110

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--INDUSTRIAL PRODUCTION, REFRACTORY MATERIAL, GRINDING, TUNGSTEN CARBIDE, ZIRCONIUM CARBIDE, BORIDE, SINTERING FURNACE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0135

STEP NO--UR/0226/70/000/002/0108/0110

CIRC ACCESSION NO--AP0123907

UNCLASSIFIED



2/2 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123907

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SIMPLE METHODS OF OBTAINING FINE GRAINED WC, ZRC, AND W SUB2 B SUB5 POWDERS FOR THE MANUFACTURE OF GRINDING WHEELS AND ABRASIVE CLOTH ARE DESCRIBED. THE ORIGINAL COMMERCIALY PURE MATERIALS ARE PRESSED INTO BLOCKS IN A HYDRAULIC PRESS AND SINTERED; THESE ARE LATER CRUSHED AND THE GRAINS ARE GRADED BY SIZE (TYPICAL YIELD 20PERCENT 400-500 AND 15PERCENT 120-160 MU M). THE MICROHARDNESS OF THE GRAINS ARE SIMILAR TO 2000-3000 KG-MM PRIME2, DEPENDING ON THE PRECISE METHOD OF PROCESSING. REPEATED PROCESSING OF ABRASIVE POWDER WASTE MAY LEAD TO A DISADVANTAGEOUS CHANGE IN CHEMICAL COMPOSITION.

UNCLASSIFIED

USSR

UDC 666.764.1.001.4

KUKOLEV, G. V., NEMETS, I. I., ~~DOBROVOL'SKIY~~, G. B., and NESTERTSOV, A. I., Kharkov Polytechnical Institute imeni V. I. Lenin

"Production and Properties of Dense Magnesia Refractories With Increased Thermal Stability"

Moscow, Ogneupory, No 3, Mar 71, pp 43-48

Abstract: It was found that magnesia refractories can be produced with improved thermomechanical properties using a spinel binder for synthesis instead of technical alumina. Experimental studies revealed the substantial effect of crystallization and spatial distribution of the spinel in the structure of the material on the thermomechanical properties of magnesia parts. From a chemical analysis it was found that at 1070°C in MgO-Al<sub>2</sub>O<sub>3</sub> mixtures the spinel content was less than 1%, while in a mixture of MgO and Al the spinel content was almost 1% at 750°C and increased with temperature, so that at 1070°C the spinel content was 8.5%. This confirmed the fact that in MgO-Al the spinel starts forming at 770°C but in MgO-Al<sub>2</sub>O<sub>3</sub> mixtures the spinel does not form until a temperature of 1000°C is reached.

1/1

USSR

UDC:: 621.396.6-181.5

DENISOV, A. I., DOBROVOL'SKIY, G. F., LOMOVITSEV, A. M., STROYEV, I. S.,  
Active Members of the Scientific and Technical Society of Radio Engineering,  
Electronics and Communications

"Setting and Mounting Micromodules With Planar Leads on Printed Circuit Boards"

Moscow, Radiotekhnika, Vol. 26, No 5, May 71, pp 99-101

Abstract: A new method is proposed for stand-off mounting of micromodules with planar leads on printed circuit boards. Essentially, the module is held away from the board by a "bridge" of lacquer. After completion of the mounting process, the "bridge" is destroyed by heat. With the proposed method, the entire process of assembly can be mechanized and simultaneously shortened. Sources of contamination which have an adverse effect on the electrical parameters of the board can be completely eliminated, and the finished units can be repaired.

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AA0040718

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UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, <sup>1-70</sup>

240791 ULTRASONIC CLEANING of small articles is more effective when the cleaned components are placed in a hermetically sealed container and the internal pressure is increased before agitating the liquid medium.

19.1.68 as 1212064/26-9. G.F. DOBROVOLSKIY & I.D. SAZONOV (26.8.69.) Bul 13/1.4.69. Class 41a, Int.Cl.H05k, C 23g.

Lp

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19750359

DOBROVOL'SKIY, I. P.

TECHNICAL TRANSLATION

PTIC-IR-11-2291-72

ENGLISH TITLE:

Interaction Between Plane Compression Waves in Ground and the Elastic-Plastic Coverings of Underground Structures

AUTHORS:

I. P. Dobrovolskiy, A. K. Mikhel'sev, G. S. Stupitskiy

SOURCE: *izvestiya* Deformatsiya Yezhikh Tverdykh Tel, Baku, Elm, 1970, p. 50-59

Translated for ETRC by

LEO KANNER ASSOCIATES

NOTICE

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An element which lies below a thick layer of homogeneous ground of unit width is discussed as a single-span beam with wing supports (Fig. 1). The moment-curvature diagram for the beam is taken in the form of the Prandtl diagram (Fig. 2). It is assumed that the element does not have an underlying stratum, and that its height is small. The pressure  $P_0$  which

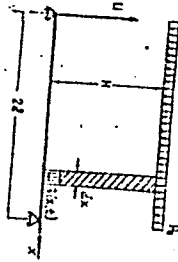


Fig. 1

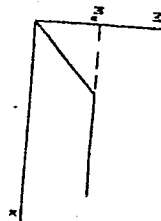


Fig. 2

does not vary over time is applied instantaneously to the surface of the soil. We assume that the instant  $t = 0$  corresponds to the instant when the shock wave reaches the element under consideration which is bent.

We will represent the soil layer above the beam in the form of a system of elementary poles with width  $dx$  and height  $H$ , and we will ignore tangential stresses which arise between these poles due to the curvilinear nature of the reflected shock wave. This problem has been studied in this formulation for the case of an elastic core in article [1], and the following

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Acc. Nr.

**AP0036334**

Abstracting Service:  
CHEMICAL ABST. 4-70

Ref. Code

*UR 0068*

*0*

69809z Welding conditions and corrosion resistance of welded seams. Klochkov, A. I.; Emel'yanova, V. P.; Dobrovolskii, I. P.; Koval, A. B.; Gribanov, L. F.; Grigor'ev, N. P.; Klishevskii, G. S.; Shchapova, V. V. (Chelyabinsk. Politekh. Inst., Chelyabinsk. USSR). *Koks Khim.* 1970, (1), 50-2 (Russ). The corrosion resistance of welds depends on the type of the welding process applied, on the electrode type, on the compn. of additives, on addnl. thermal treatment, and on the cooling of the seam. For min. corrosion in connections and app. for sulfate plants the following procedure is recommended: in arc welding the A-type electrode (C 0.11, Mn 0.9-1.5, Si 0.6-1.1, Cr 16.5-19.5, Ni 7.8-10.0, Mo 1.7-1.5, S 0.02 and P 0.03%) should be preferentially used with Mo as additive. The max. current intensity is 110 A for the welding in Ar atm. with addnl. rod of 1Kh18N9T steel (C  $\leq$  0.12, Mn 1-2, Si  $\leq$  0.80, Cr 17-19, Ni 8-9.5, Ti (C -0.02)  $\times$  5-0.7, S  $\leq$  0.02, P  $\leq$  0.035%).  
Z. Sterbacek

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REEL/FRAME  
**19721172**

USSR

UDC: 8.74

DOBROVOL'SKAYA, M. K., ZOZULEVICH, D. M.

"One Method of Coding of Geometric Objects"

Vychisl. Tekhn. v Mashinostr. Nauch.-Tekhn. Sb. [Computer Equipment and Machine Building, Scientific and Technical Collection], 1971, pp 3-15 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V598, by the authors)

Translation: A special skeletal method is suggested for coding of flat objects, oriented toward performance of analysis of images during the process of planning of machines. The relationship between the skeleton and the circular coverage of an area is established, the existence and uniqueness of the skeleton are proven and the form of skeletal graphs of areas topologically equivalent to a circle is defined.

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1/3 008 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--SPECTROPHOTOMETRIC STUDY OF HONDA COMET 1968C -U-  
AUTHOR--DOBROVOLSKIY, G.V. *D*  
COUNTRY OF INFO--USSR  
SOURCE--ACADEMICIAN ACADEMY OF SCIENCES TADZHIK SSR; DUSHANBE, DOKLADY  
AKADEMII NAUK TADZHIKSKEY SSR VOL XIII, NO 4, 1970, PP 10-13  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS  
TOPIC TAGS--COMET, SPECTROPHOTOMETRIC ANALYSIS, SPECTRUM  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1990/0260 STEP NO--UR/0425/70/013/004/0010/0013  
CIRC ACCESSION NO--AT0108569  
ZZZZZZZZZZZ UNCLASSIFIED

2/3 008

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AT0108569

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SLIT SPECTRUM OF THE HONDA COMET 1968C WAS OBTAINED AT DUSHANBE USING AN AZT-7 TELESCOPE (D EQUAL 200 MM, D:F EQUAL 1:10) AND AN ASP-9 SPECTROGRAPH. DISPERSION WAS 80 A-MM AT LAMBDA 3883 A, 200 A-MM AT LAMBDA 4317 A. MEAN DISPERSION FOR THE ENTIRE SPECTRUM WAS 120 A-MM. LENGTH OF THE SPECTRUM WAS LAMBDA LAMBDA 3870-4970. THE SLIT WAS ORIENTED ALONG ALPHA; SLIT LENGTH WAS 2 MM OR 3.4 MINUTES OF ARC. EXPOSURE WAS FOR 4.5 HOURS ON 3 SEPTEMBER. DURING THE OBSERVATION TIME COMETARY ZENITH DISTANCE CHANGED FROM 37 DEGREES 58 MINUTES TO 53 DEGREES 11 MINUTES. CAPELLA SERVED AS A COMPARISON STAR; ITS SPECTRUM WAS PRINTED ON THE SAME PLATE AS THE COMETARY SPECTRUM. THE SPECTRUM CONSISTS OF A DISTINCT CONTINUUM AND TYPICAL COMETARY EMISSIONS, INCLUDING THE (0-0), (0-1) AND (1-2) TRANSITIONS OF THE VIOLET SYSTEM CN, A GROUP AT ABOUT LAMBDA 4050 BELONG TO C SUB3 AND THE SEQUENCE DELTA SQUARE ROOT EQUAL 1 AND DELTA SQUARE ROOT EQUAL 2 OF THE C SUB2 SWAN SPECTRUM. CH AND CH POSITIVE EMISSIONS WERE ALSO OBSERVED. THE RELATIVE INTENSITIES OF THE PRINCIPAL EMISSION MAXIMA WERE DETERMINED. ALL OBSERVED VALUES ARE TABULATED. AN INTERESTING PECULIARITY OF THE COMETARY SPECTRUM IS AN APPRECIABLE ASSYMETRY IN BRIGHTNESS DISTRIBUTION RELATIVE TO THE PHOTOMETRIC NUCLEUS. IN THE DIRECTION OF THE INCREASING ALPHA THE EMISSIONS ARE PROPAGATED FOR A GREATER DISTANCE FROM THE NUCLEUS THAN IN THE OPPOSITE DIRECTION. ABOUT THIRTY EMISSIONS WERE OBSERVED; THEY ARE IDENTIFIED WITH THE FREE RADICALS CN, CH, C SUB2, CH POSITIVE AND C SUB3. CYANOGEN EMISSION PREDOMINATES OVER ALL OTHERS.

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PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AT0108569

ABSTRACT/EXTRACT--THE DISTRIBUTION OF MATTER IN THE HEAD IS ASYMMETRICAL  
RELATIVE TO THE PHOTOMETRIC NUCLEUS.

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UNCLASSIFIED

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USSR

UDC 541.15+66.05

BREGER, A.KH., GOL'DIN, V. A., DOBROVOL'SKIY, S. P., and KOZLOV, YU. D.

"Radiation-Chemical Construction of Instruments -- the Principles for the Establishment of Material-Technical Basis of Applied Radiation Chemistry"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleev, Vol 18, No 3, 1973, pp 312-322

Abstract: A review with 127 references devoted to the problem of principal goals and current status in the area of radiation-chemical construction of instruments -- one of the more important components of radiation-chemical technology. The review covers experimental and design results of the construction of radiation-chemical instruments using: 1)  $\gamma$ -irradiation of long life radioactive isotopes ( $Co^{60}$ ) as well as of the short lived ones in the nuclear power reactors (complex energy-chemical use of nuclear fuel); 2) electron streams generated by the accelerators. Areas have been pointed out in which the potential of the utilization of various radiation sources was the highest, considering both the radiation-technological parameters of these processes and their economic indicators. The state of the art satisfies the requirements originating in the realization of these results in agriculture.

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USSR

UBC: 621.039.526

~~DOBROVOL'SKIY, V. F.~~, ZHUKOV, A. V., SVIRIDENKO, YE. YA., SUBBOTIN, V. I. and  
~~USHAROV, P. A.~~

"A Study of the Temperature Fields of Fuel Elements in Fast Reactors During  
Variable Energy Release with Respect to Zone Height"

Moscow, Atomnaya energiya, Vol 28, No 6, Jun 70, p 490

Abstract: The authors experimentally determined the temperature fields of the central, lateral, and corner elements of a BOR [expansion unknown]-type reactor cassette model during cosinusoidal energy release along the height of the model. The results show that the heat flux varying with respect to length evokes deformation of the temperature profile in the channel because of the varying amount of heat supplied at each section of the channel. As a result of this, a change takes place in the numerical values of the heat-transfer coefficients along the channel. A reduction of the heat-transfer coefficients in the upper part of the active zone of a BOR-type reactor as the result of variable energy release does not present a danger to the operation of the fuel elements since the numerical values of the mean temperature difference for wall-fluid are small in the case of sodium heat-transfer agent. The maximum temperature nonuniformity of the fuel elements of a BOR-type reactor can be estimated with respect to the mean along the height of the heat flux zone starting with test data obtained for  $q = \text{const}$ .

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AA0046412

DOBROVOLSKIY V.I.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

1/70

241778 MEASURING LOW CYCLE FATIGUE in material subjected to bending is carried out by a testing machine comprising frame 1, devices 1 and 2 for fixing test pieces 4 and 5 mechanism for light or heavy loading of test pieces 6 and 7 respectively, drive 8 and control and measuring equipment. The arrangement for loading lightly the samples under test is in the form of a shaft on which there are clamps for fastening the samples.

27.6.67 as 1167275/25-28. V.I. DOBROVOLSKIY & V.A. KARPUNIN. IZHEV MECHANICAL INST, (1.9.69) Bul 14/18.4.69. Class 42k. Int.Cl.G 01n.

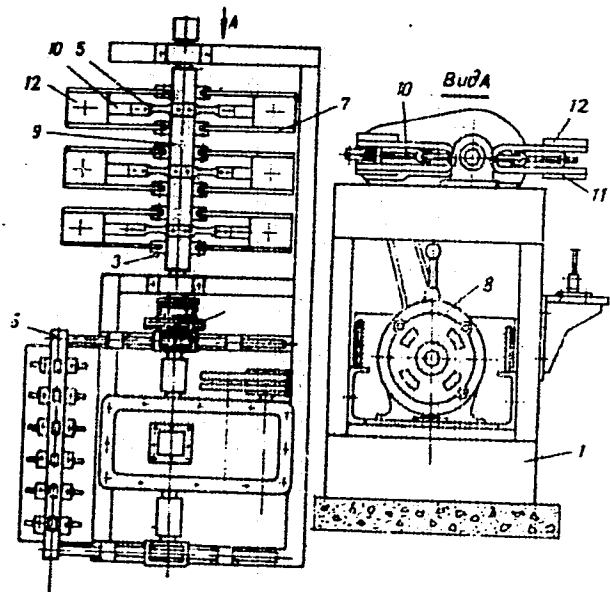
Izhevskiy Mekhanicheskiy Institut

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USSR

UDC 539.376+532.135

DOBROVOL'SKIY, V. L.

"Viscous-Plastic Layer on an Inclined Plane"

Tr. Mosk. in-ta elektron. mashinostr. (Works of Moscow Institute of Electronic Machine Building), 1972, No. 24, pp 116-126 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V536)

Translation: The problem of the flow of a heavy viscoplastic layer on an inclined plane is discussed. The case of one-dimensional flow is investigated. It is assumed that for stresses lower than a given value the material is absolutely rigid and above this limit it is viscous. Various cases of the distribution of viscous and rigid zones over the cross section are considered. The case of the effect of a one-dimensional stationary temperature field on the zone distribution is considered in more detail. M. A. Yumasheva.

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USSR

UDC 621.791.762.5:536.2

KRIVENKO, V. G., Candidate of Technical Sciences, and DOBROVOL'SKIY, V. P.,  
GORSHKOV, A. F., and FORTURATOVA, N. N., Engineers, Institute of Electric  
Welding imeni Ye. o. Paton, Academy of Sciences Ukrainian SSR

"Heating Type EP199 Heat-Resistant Alloys in Resistance Welding with Impulse  
Fusion"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 74, pp 12-15

Abstract: The effect of the basic parameters of the impulse fusion process on heating the ends of parts prior to upsetting were studied and the values of these parameters, ensuring a minimum welding time, were determined in the welding of type EP199 heat-resistant alloys. The Hartley-Kono scheme was used in this work for selecting the controlling and output parameters. It was found that in resistance welding of heat-resistant alloys by impulse fusion with low-frequency vibrations (up to 5 Hz), the heating of parts is determined by the main control parameters and to a large degree by their interaction. The optimum values of the vibration parameters in welding EP199 alloys were vibration amplitude  $A = 1-1.3$  mm and vibration frequency  $f = 3-4$  Hz. The required temperature of not less than  $1000^{\circ}$  C at the upset zone boundary can be achieved in 90 seconds, which is 50% less in comparison with continuous preheating prior to welding. Three figures, two tables, four bibliographic references. 1/1

UNCLASSIFIED

PROCESSING DATE--17JUL70

D

TITLE--CHARACTERISTIC FEATURES OF CONTACT WELDING BY FUSION WHEN EXECUTING T JOINTS -U-

ALTHOR--CHEPECHICK, V.T., COBROVLSKIY, V.P., GORSIKOV, A.P., PRITZHALLV, V.A.

COUNTRY OF INFO--USSR

SOURCE--KIEV, AVTOMATICHESKAYA SVARKA, NO 1, 1970, PP 53-56

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5  
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DATE PUBLISHED-----70

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

TOPIC TAGS--WELD JOINT, PRESSURE WELDING, WELD EVALUATION, WELDING INSPECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REF/IR/ML--1979/0050

STEP NO--01/0129/79/000/001/0053/0056

CIRC ACCESSION NO--AP004740

Acc. Nr.: AP0046746

Ref. Code: UR0125

USSR

UDC 621.791.053.96

CHEREDNICHOK, V. T., DOBROVOL'SKIY, V. P., GORSHKOV, A. P., PRITUZHALOV, V. A.

"Characteristic Features of Contact Welding by Fusion when Executing T-Joints"

Kiev, Avtomaticheskaya Svarka (Automatic Welding), No 1, 1970, pp 53-56  
(from Avtomaticheskaya Svarka, No 1, 1970, p 80)

Translation: The interrelation of the parameters characterizing upsetting when executing T-joints and the quality of the welds obtained are studied. There are 7 illustrations and a 5-entry bibliography.

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Reel/Frame  
19790050

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--EFFECT OF POWDERED ADDITIVES ON THE PROPERTIES OF AMMONIUM NITRATE  
-U-  
AUTHOR--(04)--GANZ, S.N., VILESOV, G.I., DOBROVOLSKIY, YE.I., KHARICHKOV,  
I.N. D  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. PROM. UKR. 1970, (1), P 10-11  
DATE PUBLISHED-----70  
SUBJECT AREAS--AGRICULTURE  
TOPIC TAGS--AMMONIUM NITRATE, WASTE CHEMICAL CONVERSION, ZINC OXIDE,  
MAGNESIUM, CALCIUM CARBONATE, CALCIUM SULFATE, MINERAL FERTILIZER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1993/0385 STEP NO--UR/0436/70/000/001/0010/0011  
CIRC ACCESSION NO--AP0113303  
UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70  
CIRC ACCESSION NO--AP0113303  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WASTE FROM PRODUCTION OF ZND  
PIGMENT AND SLIME FROM MN MINES WERE DRIED AND MIXED IN THE RATIO OF 3  
TO 2 AND AN EQUAL AMT. OF CACO SUB3 PLUS CASO SUB4 WAS ADDED. THIS  
MIXT., CONTG. ALL TRACE ELEMENTS REQUIRED FOR FERTILIZING, WAS ADDED TO  
NH SUB4 NO SUB3 (1, 3, 5, OR 6PERCENT) TO PROLONG THE STORAGE LIFE OF  
THE FERTILIZER. THE AGRONOMIC EFFECTIVENESS WAS INCREASED BY  
8-15PERCENT. FACILITY: DNEPROPETROVSK. KHIM.-TEKHOL. INST.,  
DNEPROPETROVSK, USSR.

UNCLASSIFIED

DOBROVOL'SKIY, Yu. A.

Public Health

SO: JPRS 54019  
9 SEP 71

UDC: 616-073.75:362.12(47-21)

SOME PROBLEMS PERTAINING TO ROENTGENOLOGICAL SERVICES TO THE URBAN POPULATION IN POLYCLINICS

Article by Yu.G. Vol'finzon, L.M. Kuhlman, Chair of Social Hygiene and Public Health Organization (headed by Professor Yu.A. Dobrovolskiy), Leningrad Institute for the Advanced Training of Physicians, ~~191011, Leningrad~~ Sovetskoye Zdravookhraneniye, Russian, No 7, 1971, submitted 14 January 1971, pp 48-51] *AN - Public Health*

The roentgenological method of examination occupies a prominent place in the diagnosis of a number of diseases. At the present time about 25 percent of all diagnoses are made with its use (I.G. Lagunova, 1960).

Roentgenology is of inestimable importance in the detection of such diseases as tuberculosis, cancer, and inflammatory processes. Yet its role is more modest with reference to identification of acute respiratory infections, influenza, acute bronchitis, and others. Some clinicians are not sufficiently acquainted with the limitations and capabilities of roentgenology and often refer patients for x-rays when the diagnosis is such that roentgenology does not yield any positive results while the patient is unjustifiably exposed to ionizing radiation. In this connection we cannot help but agree with S.A. Keyserberg (1960) that the hazard of the examination should be rationally consistent with the expected benefit. Not a single fluoroscopy or x-ray should be taken without substantiated indications.

We investigated the justification of referrals of polyclinic patients for x-rays and also analyzed the coincidence of clinical diagnosis and roentgenological findings on these patients. This study was pursued at the 37th polyclinic of Frunzenskiy Rayon of Leningrad, which is one of the large polyclinics in the city connected with a hospital. There is a traumatology center at the polyclinic. The x-ray department consists of three diagnostic, a roentgen-therapeutic, and a fluoroscopic examination rooms. It has been the practice of the department to provide for 6.5 posts of roentgenologist. The size of the population serviced by the polyclinic numbers 90,000 people, with 37,000 males (41.1 percent) and 53,000 females (58.9 percent).

Acoustical

USSR

UDC 534.232

DOBROVOL'SKIY, YU. YU.

"On Correction of Mutual Radiation Resistance Calculation of Pistons  
in a Convex Screen"

Moscow, Akusticheskiy Zhurnal, Vol 17, No 3, Jul-Aug-Sep 71,  
pp 385-388

Abstract: Approximate formulae are available, to determine the mutual radiation resistance of strips or small pistons enclosed inside cylindrical screens. These formulae have been obtained by the use of Green functions.

The expression of a correction term is derived by the use of two-dimensional Green functions. The numerical values are given in a table.

USSR

DOBROVOL'SKIY, Yu. Yu., Akusticheskiy Zhurnal, Vol 17, No 3, Jul-Aug-Sep 71,  
pp 385-388

Fig. 3 shows the ratios of the mutual resistance to the self-resistance of two strips inside a cylindrical screen.

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D  
USSR

UDC 669.271

KOLOBOV, G. A., MAKSIMENKO, V. M., ZHURAVLEV, A. I., VAZHENIN, S. P., and  
DOBRIGOV, Yu. V.

"Use of Titanium Equipment in Magnesium Production"

Moscow, Tsvetnyye Metally, No 6, Jun 70, pp 39-40

Abstract: An account is given of investigations conducted jointly by the Solikamsk Magnesium Plant and the Titanium Institute on the use of titanium alloys in equipment intended for magnesium production. The corrosion resistance of the VT1, VT14, and VT5-1 titanium alloys was investigated. The results of tests conducted at chlorine and electrolysis plants are presented in a table. The VT1 alloy was found to be more corrosion-resistant than the VT14 and VT5-1 alloys. A brief history of the use of equipment made of titanium alloys at the Solikamsk plant is given. An inventory of various equipment, such as valves, pumps, gas-pumps, calorizers, gas scrubbers, etc., is presented, and the planned installation of new titanium alloy equipment is described. It is stated that the use of such equipment in the plant has already resulted in savings of 60,000 rubles.

1/1

C. Application of Theoretical Probability and Statistical Methods

USSR

DOBRUSHIN, R. L.

"Gibbs State Describing the Existence of Phases for a Three-Dimensional Ising Model"

Teoriya Veroyatnostey i Ee Primeneniya [Theory of Probabilities and its Application], 1972, Vol 17, No 4, pp 619-639 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1975, Abstract No 4V251, by the author).

Translation: Suppose  $Z^v$  is a v-dimensional discrete grid consisting of vectors  $t = (t_1, \dots, t_v)$  with integer coordinates  $t_i$ . We will state that the system of random quantities  $\{\xi_t, t \in Z^v\}$  with values of 0 and 1 forms a Gibbs field with parameters  $(\mu, \beta)$ , where  $\mu$  is the chemical potential,  $-\infty < \mu < \infty$ , and  $\beta$  is the inverse temperature,  $0 < \beta < \infty$ , if with all  $t \in Z^v$ ,  $x_s = 0, 1, s \in Z^v$ , the conditional probability

$$P\{\xi_t = x_t \mid \xi_s = x_s, s \in Z^v \setminus t\} = \frac{\exp\left\{-\beta\left(-\mu x_t - \sum_{s: |s-t|=1} x_s x_t\right)\right\}}{1 + \exp\left\{-\beta\left(-\mu - \sum_{s: |s-t|=1} x_s\right)\right\}}$$

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(1.1)

USSR

Dobrushin, R. L., Teoriya Veroyatnostey i Eyc Primeneniya, 1972, Vol 17, No 4, pp 619-639.

The Gibbs field can naturally be characterized by the finite-dimensional distribution

$$\begin{aligned} r(\hat{x}_t, I(C)) = P \{ \xi_t = \hat{x}_t, I(C), \hat{x}_t = 0, 1, \\ I(C), C \subset Z^v \text{ is finite,} \end{aligned} \quad (1.2)$$

the set of which will be referred to as the Gibbs state with parameters  $(\mu, \beta)$ . The Gibbs state describes the state of an equilibrium system in an infinite vessel.

The problem naturally arises of describing all Gibbs states with fixed parameters  $(\mu, \beta)$ . We know that for any values of parameters  $(\mu, \beta)$ , this set forms a non-empty convex set. If dimensionality  $v = 1$ , this set always consists of one Gibbs state. However, where  $v \geq 2$ , the Gibbs state is not necessarily unique. As a results of an entire series of works by various authors, it has been determined that where  $v \geq 2$  and  $\mu = -v, \beta \geq \beta_0$ , where the explicitly estimated constant  $\beta_0$  depends only on dimensionality, there are at least two

USSR

Dobrushin, R. L., Teoriya Veroyatnostey i Ego Primeneniya, 1972, Vol 17, No 4, pp 619-639.

different Gibbs states  $P_0$  and  $P_1$ . These states are converted one into the other by replacement of variables  $\hat{x}_t \leftrightarrow 1 - \hat{x}_t$ , and are such that  $r(\hat{x}_t = 0, t \in \{t\}) \geq 1 - g(\beta)$  for the state  $P_0$  and  $r(\hat{x}_t = 0, t \in \{t\}) \leq g(\beta)$  for the state  $P_1$ , where  $\{t\}$  is an arbitrary set of one point and  $g(\beta) \rightarrow 0$  as  $\beta \rightarrow \infty$ . They describe the states of two possible phases in this situation.

The main result of this work is as follows.

Theorem 1. Suppose  $v \geq 3$ . There is a constant  $\beta_v$  such that where  $\beta \geq \beta_v$  and  $\mu = -v$ , there is an infinite set of Gibbs states  $P_{j,a}^1$  with these  $(\mu, \beta)$ , where  $j = 1, \dots, v$ ;  $a = \dots, -1, 0, 1, \dots$ ;  $\epsilon = 0, 1$ . For state  $P_{j,a}^1$ , the finite-dimensional distribution  $r(\hat{x}_t = 0, t \in \{t\}) \geq 1 - g(\beta)$ , if  $\epsilon = 0$ ,  $t_j < a$  and if  $\epsilon = 1$ ,  $t_j \geq a$ , for the remaining  $t \in Z^v$ , where  $g(\beta) \rightarrow 0$  where  $\beta \rightarrow \infty$ .

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USSR

Dobrushin, R. L., Teoriya Veroyatnostey i Ego Primeneniya, 1972, Vol 17, No 4, pp 619-639.

The Gibbs state  $P_{j,a}^{\ell}$  describes the case of existence of two phases in one vessel, when the phase division boundary passes along plane  $t_j = a$  with certain fluctuations of limited scale. The assumption  $\nu \geq 3$  is significant, since where  $\nu = 2$  this Gibbs state does not exist with sufficiently large  $\beta$ .

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USSR

DOBRUSHIN, R. L.

"The Gibbs Condition Describing the Coexistence of Phases for the Three-Dimensional Ising Model"

Moscow, Teoriya Veroyatnostey i Yeye Primeneniya, vol 17, No 4, 1972, pp 619-639

Abstract: The Gibbs field with parameters  $(\mu, \beta)$  is defined as a system of random quantities with values of 0 and 1, where  $\mu$  is the chemical potential varying between minus and plus infinity, and  $\beta$  is the inverse temperature varying between zero and plus infinity. It is characterized by finite-dimensional distributions whose totality defines the Gibbs condition with the parameters  $(\mu, \beta)$ . This definition is specified for the Ising model with generally defined repulsion, as introduced by an earlier paper of the same author, published in the same journal named above (Gibbs-ovskiyе sluchaynyye polya dlya reshetchatykh sistem s parnym vzaimodeystviyem -- Gibbs Random Fields for Grid Systems with Paired Interaction -- vol 2, No 4, 1968, pp 31-43). The problem of the paper is to describe all the Gibbs conditions.

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USSR

UDC 519.27

DOBRUSHIN, R. L.

"Markov Processes with Large Numbers of Locally Interacting Components -- The Existence of a Limiting Process and Its Ergodicity"

Moscow, Problemy Peredachi Informatsii, Vol 7, No 2, 1971, pp 70-87.

Abstract: Markov processes with continuous time are studied, the elements of the phase space of which are a set of a large number of components, each of which takes on a discrete series of values. It is suggested that these components be compared with the points of a discrete lattice in space and that the statistical regularities of the change of the individual components be determined by the states of the neighboring components. Similar processes appear in various cybernetics problems. Their investigation is performed by means of a transfer to the limiting case, when the number of components is infinite.

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USSR

DOBRUSHIN, R. L.

D

"Definition of a System of Random Variables by Means of Conditional Distributions"

Moscow, Teoriya Veroyatnostey i Yeye Primeneniya, Vol 15, No 3, 1970, pp 469-496


Abstract: This study deals with the conditions or the existence and uniqueness of random fields with a given system of conditional distributions.

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USSR

UDC: 541.183 546.631

  
DOROSHINA, G. D., BELYAVSKAYA, T. A., Department of Analytical Chemistry, Moscow State University imeni M. V. Lomonosov, Moscow Ministry of Higher and Secondary Specialized Education RSFSR

"Sorption of Zirconium from Nitrate Solutions in the Presence of Some Organic Acids and Solvents"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/Feb 70, pp 84-87

Abstract: The authors studied the sorption behavior of zirconium on KU-2 cation-exchange resin and AV-17 anion-exchange resin in nitrate solutions in a mixture with methyl and propyl alcohols, acetone, dioxane and organic acids (formic, acetic and propionic). Zirconium sorption was studied as a function of the concentration of nitric acid and organic component. The concentration of organic components in the solution was varied from 0 to 80% by volume, and the concentration of nitric acid was varied from 0.5 to 5.0 N. in nitrate solutions of organic solvents, and from 0.5 to 2.0 N. in nitrate solutions of organic acids. It was found that zirconium sorption on KU-2 cation-exchange resin increases with an increase in the concentration of organic solvent when the acidity of the solution is 0.5-1.0 N. Acetone produces the maximum increase in sorption, and methanol has hardly any effect. At acidities of 3.0-5.0 N., the introduction of organic  
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USSR

DOBRUSHINA, G. D., BELYAVSKAYA, T. A., Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/Feb 70, pp 84-87

solvents either slightly reduces sorption or has no effect. In the case of AV-17 anion-exchange resin, zirconium sorption decreases in the presence of small quantities of organic solvents. However, when the volume of organic solvent is increased to 40-60% or more, zirconium sorption begins to increase. Again, acetone has the strongest effect, and methanol causes no increase in sorption. The presence of organic acids decreases zirconium sorption by KU-2. Formic acid reduces sorption to a lesser degree than do acetic and propionic acids. When the maximum possible quantity of organic acid is added, there is somewhat of an increase in sorption which shows up most strongly in solutions of low acidity. Acetic acid causes the greatest change in this respect. The slight sorption of zirconium by AV-17 resin is hardly changed at all by formic or acetic acid, and is only slightly increased by the addition of 80-90% propionic acid.

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1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--ZIRCONIUM ADSORPTION FROM NITRIC ACID SOLUTIONS MIXED WITH CERTAIN  
ORGANIC ACIDS AND SOLVENTS -U-  
AUTHOR-(02)-DOBRUSHINA, G.D., BELYAVSKAYA, T.A.  
COUNTRY OF INFO--USSR  
SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11(1), 84-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ZIRCONIUM, NITRIC ACID, ORGANIC ACID, CATION EXCHANGE RESIN,  
ADSORPTION/(U)KUZ CATION EXCHANGER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/1472 STEP NO--UR/0189/70/011/001/0084/0087  
CIRC ACCESSION NO--AP0120259  
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--A0120259

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADSORPTION OF ZR WAS STUDIED ON KU-2 CATION EXCHANGER AND THE AB-17 ANION EXCHANGER IN HNO SUB3 SOLNS. MIXED WITH MEOH, PROH, ME SUB2 CO, DIOXANE, AND ORG. ACIDS (HCOOH, ACOH, PRCOOH). THE ADSORPTION WAS DETD. AS A FUNCTION OF THE CONCN. OF HNO SUB3 AND THE ORG. COMPONENT. THE CHANGE IN THE ADSORPTION IN THE MIXED SOLNS. AS COMPARED TO AQ. SOLNS. IS DUE TO THE NO. OF FACTORS RELATED TO THE CHANGE IN THE IONIC STATE OF THE ELEMENT AND TO CHANGES IN THE PROPERTIES OF THE ION EXCHANGERS IN THE PRESENCE OF ORG. COMPS. THE INCREASE OBSERVED ON THE CATION EXCHANGER FOR THE ADDN. OF ORG. SOLVENTS TO A 0.5-1.0N ACID SOLN. IS APPARENTLY RELATED TO THE STABILIZING OF THE POS. CHARGED COMPLEX IONS, ZR(NO SUB3) PRIME3 POSITIVE WHICH EXIST IN THE SOLN. AND THE ADSORPTION OF ZR PRIME4 POSITIVE IONS. THE ADDN. OF THE ORG. SOLVENTS TO MORE ACIDIC SOLNS. BRINGS ABOUT A DECREASE IN THE ADSORPTION. THUS, IN THIS CASE THE IONIC STATE OF THE ELEMENT IS THE CONTROLLING FACTOR. ADSORPTION OF ZR BY THE ANION EXCHANGER IS SMALL FROM AQ. SOLNS. OF HNO SUB3. ADDN. OF AN ORG. SOLVENT DECREASES THE SWELLING OF THE EXCHANGER WHICH DECREASES THE ADSORPTION STILL MORE. AN INCREASE IN THE VOL. OF THE ORG. SOLVENT ABOVE 60 PERCENT BRINGS ABOUT AN INCREASE IN THE ADSORPTION DUE TO THE EXTN. OF THE ELEMENT INTO THE RESIN PHASE WHICH IS ENRICHED WITH RESPECT TO THE MORE POLAR SOLVENT.

UNCLASSIFIED

USSR

UDC 621.316.1.015.002.235.003.13

~~DOBRUSHKIN, G. A.~~

"Determination of the Economic Effectiveness of Conversion of 6 kv Networks to 10 kv Networks"

V sb. Tekhn. progress v elektrosnabzh. gorodov (Technical Progress in Electric Power Supply of the Cities -- collection of works), Leningrad, Energiya Press, 1970, pp 130-132 (from RZh-Elektrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Ye 281)

Translation: Conversion of the 6 kv networks to 10 kv networks is expedient when the total calculated expenditures for rebuilding the network considering the step-up coefficient together with the cost of losses of the 10 kv version does not exceed the total calculated expenditures and cost of losses of keeping the 6 kv version by more than 15%. [Ukrgiproenergo (Ukrainian State Planning Institute of the Power Industry)] see also RZh-Elektrotehnika, 1970, Abstract No 2 Ye 57.

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1/2 009 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--DEALKYLATION OF P TERT ALKYLPHENOLS IN THE PRESENCE OF SULFURIC  
ACID -U-  
AUTHOR-(03)-VOLEPSHTEIN, A.B., YULIN, M.K., DOBRUSHKINA, I.N.  
COUNTRY OF INFO--USSR  
SOURCE--NEFTEKHIMIYA 1970, 10(1), 76-82  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--DEALKYLATION, ALKYLPHENOL, SULFURIC ACID, ISOBUTENE, PROPANE,  
STYRENE, BENZENE DERIVATIVE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1992/1884 STEP NO--UR/0204/70/010/001/0076/0082  
CIRC ACCESSION NO--AP0112864  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112864

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE PHENOLS WERE HEATED WITH 0.5 WT. PERCENT CONCD. H SUB2 SO SUB4 60 MIN AT 100-204DEGREES. 4,TERT,BUTYLPHENOL (I) AT 130-60DEGREES FORMS PHENOL AND 2,4,DI,TERT,BUTYLPHENOL, AND, AT 180-204DEGREES, ISOBUTYLENE AND PHENOL. P,TERT,OCTYLPHENOL (II) AT 190DEGREES FORMS 39.4 WT. PERCENT DIISOBUTYLENE, 33.0 PHENOL, 5.2 I, AND 19.4 II. AN EQUIMOLAR MIXT. OF PHENOL AND II AT 190DEGREES GAVE 29, 15.7, 26.8, AND 23.0PERCENT, RESP. 2,PHENYL,2, (4,HYDROXYPHENYL)PROPANE (III) AT 204DEGREES GAVE 2.9 ALPHA,METHYLSTYRENE, 27.9 PHENOL, 32.1 1,1,3,TRIMETHYL,3,PHENYLINDAN, AND 37.1PERCENT III. 2,2,BIS(4,HYDROXYPHENYL)PROPANE (IV) AT 204DEGREES GAVE 53.5PERCENT PHENOL; THE REST WAS UNIDENTIFIED. THE RELATIVE DEGREES OF DEALKYLATION AT 190DEGREES ARE: I, 3.7; II, 80.6; III, 42.9; IV, 72.0. FACILITY: INST. GORYUCH. ISKOP., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.316.542.001.5

SOLDV'YEV, E. P., Engineer, DOBRUSIN, A. I., Engineer, KERPELEV, S. G., Engineer, GROMOV, YU. I., Engineer, ZAGAYKEVICH, B. D., Engineer

"Electrical Testing of the Material of Insulating Pull Rods for VVB-750m High-Voltage Breakers"

Moscow, Elektrotehnika, No 8, 1971, pp 46-47

Abstract: Results are presented from testing the electrical properties and moistureproofness of various fiberglass rods obtained by drawing. The superiority of the developed polyester epoxy fiberglass is demonstrated, and this material is recommended for the insulating pull rods of high voltage breakers. Graphs are presented showing the moisture absorption of the new material and the variation of its specific surface drag as functions of time spent in a wet chamber. Comparative data are presented for rods 12 mm in diameter and 50 mm long using PN-1 binder with GF-82GS protective coating and without the coating, fiberglass made of polyester epoxy binder without a coating and with GF-82GS and PKE-22 protective coatings and fiberglass using an epoxy binder manufactured in Poland and presently widely used in 35 kilovolt breakers. The specific surface drag of the Polish fiberglass dropped as much in 24 hours as that of the polyester epoxy fiberglass after a month. Measurements of the electric strengths of the materials after a month in a wet chamber produced the

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USSR:

SOLOV'YEV, E. P., et al., Elektrotehnika, No 8, 1971, pp 46-47

following data: for material without a coating 4 kv/cm and with the PKE-22 coating, .3.52 kv/cm.

2/2-

1/2 018

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--RESISTANCE OF THE POROUS STRUCTURE OF SILICA GELS PREPARED FROM  
CONCENTRATED AQUEOUS SOLS OF SILICIC ACID TO THERMAL TREATMENT -U-

AUTHOR--BELOTSEKOVSKIY, G.M., DOBRUSKIN, V.KH., KIREYEVA, G.YE.,  
PLACHENOV, T.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 445-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SILICA GEL, ISOTHERM, GAS ADSORPTION, VAPOR STATE, SOLUTION  
CONCENTRATION, AQUEOUS SOLUTION, BENZENE, POROSITY, THERMAL EFFECT,  
VACUUM CHAMBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1983/0920

STEP NO--UR/0080/70/043/002/0445/0447

CIRC ACCESSION NO--AP0053844

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0053844

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADSORPTION QUALITY OF 2 BRANDS OF SILICA GEL WHICH WERE HEATED TO 200, 550, AND 750DEGREES WAS TESTED BY TAKING THE ADSORPTION ISOTHERMS OF C SUB6 H SUB6 VAPOR AT 20DEGREES AND OF N AT MINUS 196DEGREES BY MEANS OF A QUARTZ COIL IN A VACUUM CHAMBER EQUIPPED WITH A BALANCE. THE QUALITY OF THE GEL AT ELEVATED TEMPS. AND ITS RESULTING POROUS STRUCTURE DEPEND MAINLY ON THE AMT. OF RESIDUAL ALKALIES IN SILICA GEL FROM THE MANUFACTURING PROCESS. WHEN THE ALKALIES WERE WASHED WITH HCL AND H SUB2 O, THE POROSITY AFTER HEAT TREATMENT WAS BEST. THE RESULTS OBTAINED WERE VERIFIED BY MEASUREMENTS OF D. AND OF SP. SURFACE.

UNCLASSIFIED

Mechanical Properties

USSR

UDC 669.14.018.298.621.78

ZADOROZHNYAYA, L. K., ~~DOBRIUSKINA, Sh. R.~~, KURMANOV, M. I., Ukrainian Institute of Metals

"Properties of Steel Hardened by Alloying or Heat Treatment"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 5, 1972, pp 47-50.

Abstract: This work compares the mechanical properties of steels heat treated to a strength of over 60 kg/mm<sup>2</sup> and additionally alloyed hot forged steel of the same strength. In steels type 3sp, 18G2, 19G and 14KhGS in the heat treated state with identical tensile strength, all other mechanical characteristics are equal. With identical strength, heat treated and hot forged steels have different ratios of mechanical characteristics. As tensile strength increases, the yield point increases rapidly in heat treated steels, more slowly in hot forged steels. Relative elongation is somewhat higher in hot forged steels; impact toughness is somewhat higher in heat treated steels.

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USSR

UDC 576.85(478)

MARITS, A. A., CHASHCHINA, I. N., CHERVINSKAYA, S. I., ELKIS, K. U., KORNES, R. V., BELYAYEVA, N. S., CHEBAN, Ye. D., KOTSEFAN, A. S., DOBRUSKINA, S. V., GURCHIOGLUYANTS, L. V., and MIKHAYLOVA, A. A., Moldavian Scientific Research Institute of Hygiene and Epidemiology and Kishinev Sanitary Epidemiological Station

"Fermentation Reaction Types and Colicinogenic Properties of Shigella Sonnei Circulating in the City of Kishinev, and Determining Their Sensitivity to Antibiotics"

Kishinev, Zdravookhraneniye, No 5, Sep/Oct 71, pp 7-9

Abstract: The Shigella sonnei strain accounted for 97.9-99 percent of the cases of dysentery in Kishinev in 1968-70. The object of this study was to identify the types of fermentation reactions of Shigella sonnei isolated in 1968-70 (4,507 cultures), and to study their colicinogenic properties and sensitivity to antibiotics. Shigella bacilli isolated from victims in 1968 were found to be primarily fermentation type II (71.4 percent); in 1969-70, type I bacilli predominated (66.4-94.1 percent); Shigella type III was most frequently isolated from the healthy. The results of studies on colicin production showed that, of 922 cultures, 842 were inactive with respect to E. coli K-12 and E. coli B and  $\psi$ ; 76 cultures were colicin type K-12; 4, colicin type  $\psi$ .

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USSR

MARITS, A. A., et al., Zdravoo'hraneniye, No 5, Sep/Oct 71, pp 7-9

Among the K-12 type cultures, 54 percent were fermentation type I; 44.8 percent were type II; and 1.2 percent were type III. The cultures isolated in 1969 exhibited a gradual decrease of strains sensitive to levomycetin, and a growing number of strains sensitive to neomycin and monomycin.

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USSR

UDC 616.935:576.3

MARITS, A. A., CHASHCHINA, I. N., CHERVINSKAYA, S. I., ~~BLUMIS, Y. H., BOBYAYEVA,~~  
N. S., CHEBAN Ye. D., KOTSEFAN, A. S., KONNES, R. B., ~~DOLEGOVICH, S. V.,~~  
GURCHIOGLUYANIS, L. V., and MERKAYLOVA, A. A., Moldavian Scientific Research  
Institute of Hygiene and Epidemiology, and Kishinev Sanitary Epidemiological  
Station

"Enzymatic Types of Sonnei Dysentery Pathogens Circulating in Kishinev"

Kishinev, Zdravookhraneniye, No 3, May/June 1970, pp 43-49

Abstract: The number of *Sh. Sonnei* strains isolated in Kishinev in 1968 was more than four times greater than in 1959. Many healthy individuals are carriers of these bacteria. A total of 1,714 cultures of *Shigella Sonnei* were investigated to determine their morphological, peptolytic, antigenic, and other properties, including their ability to ferment sugars to acids. Pathogens were classified into three enzymatic types. Type I -- cultures ferment rhamnose within the first 24 hours of incubation at 37°C, but do not ferment xylose for a week; type II -- cultures ferment rhamnose with a delay (after three to four days), or do not ferment either rhamnose or xylose; type III -- cultures ferment both sugars within the first 24 hours. Of the 1,714 cultures investigated, 71.4% belonged to type II, 21.5% to type I, and 7.1% to type III. The tests are fairly easy and can be performed in routine clinical laboratories.

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1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--NORMS OF ANTIEPIDEMIC SERVICES OF A RURAL POPULATION -U-

AUTHOR--(05)-BIRKOVSKIY, YU.YE., PONOMAREVA, G.YE., PAVLOV, A.V., GOROBETS,  
E.M., DLBRUSHTAN, YE.V.  
COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 5, PP 150-152

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EPIDEMIOLOGY, PUBLIC HEALTH, MEDICAL PERSONNEL, GEOGRAPHIC  
LOCATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0425

STEP NO--UR/0475/70/000/005/0150/0152

CIRC ACCESSION NO--AP0126178

UNCLASSIFIED



2/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70  
CIRC ACCESSIGN NO--AP0126178  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ANALYSIS OF EPIDEMIOLOGICAL  
SERVICES IN RURAL DISTRICTS MADE IT POSSIBLE TO SUGGEST THE FOLLOWING  
NORMS FOR ADEQUATE SERVICE OF THE RURAL POPULATION: ONE EPIDEMIOLOGIST  
PER 24.2 THOUSAND INHABITANTS AND ONE ACCISTANT EPIDEMIOLOGIST PER 12.6  
THOUSAND INHABITANTS. FACILITY: KIYEVSKIY INSTITUT  
EPIDEMIOLOGII, MIKROBIOLOGIT I PARAZITOLOGII.

UNCLASSIFIED

1/2 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--NATURE OF THE CRYSTALLIZATION OF ZN SUB4 SB SUB3 AND ZN SUB5 SB

SUB2 -U-

AUTHOR--(02)-PSAREV, V.I., DOBRVDEN, K.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 230-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTALLIZATION, ZINC COMPOUND, ANTIMONY COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FAME--1996/0840

STEP NO--UR/0363/70/006/002/0230/0236

CIRC ACCESSION NO--AP0118016

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118016

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDITIONS FOR THE FORMATION OF THE INTERMEDIARY COMPOUNDS. ZN SUB4 SB SUB3 AND ZN SUB3 SB SUB2 DURING THE CRYSTALLIZATION OF THE ZN-SB ALLOYS WITH A CONTENT OF 41.72-100 WT. PERCENT ZN WERE INVESTIGATED. ZN SUB4 SB SUB3 CRYSTALLIZES FOLLOWING THE CRYSTALLIZATION OF ZN SUB3 SB SUB2 IN PROPORTION TO THE ENRICHMENT OF THE MELTS WITH SB. PRIOR HEATING OF THE MELT HAS A SIGNIFICANT EFFECT ON THE QUANTITATIVE CONTENT OF THE PHASES. THE EXISTENCE OF POLYMORPHIC TRANSFORMATIONS FOR ZN SUB3 SB SUB2 WAS NOT CONFIRMED. THE ORTHORHOMBIC LATTICE OF ZN SUB4 SB SUB3 IS CONSTRUCTED ACCORDING TO A "SUBTRACTIONAL" SOLID SOLUTION TYPE (WITH A DEFICIENCY OF ZN ATOMS) BASED ON THE LESS STABLE ZN SUB3 SB SUB2 LATTICE. FACILITY: CHERNOVITS. GOS. UNIV., CHERNOVITSY, USSR.

UNCLASSIFIED

USSR

UDC 620.10

DOBRYAKOV, A. A., Candidate of Technical Sciences, Acting Dean

"Influence of Modulus of Elasticity on Stability and Weight of Fiberglass Reinforced Plastic Shells"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 6, 1972, pp 12-14

Abstract: The experimental values of critical loads on fiberglass reinforced plastic shells are 5 to 30% below the theoretical ones based on modulus of elasticity in two perpendicular directions.

Investigation showed that the modulus of elasticity in bending and in tension are unequal. Graphs are presented giving the reduction of shell strength versus ratio of modulus of elasticity for axial tension to the one for tangential bending. Three cases are given: axial load, torsion and external pressure.

Considerations on the optimum distribution of fiberglass cloth are given.

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USSR

UDC: 55

DOBRYAKOV, L. D.

"On the Polyhedron of Solutions of a System of Linear Incompatible Equations in the Chebyshev Sense"

V sb. Nekotor. vopr. vyssh. mat. (Some Problems of Higher Mathematics--collection of works), Voronezh, 1971, pp 44-51 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V524)

[No abstract]

1/1

USSR

UDC 615.917

DOBRYANSKIY, V. N.

"Toxicology of the Limacide Metaldehyde"

V sb. Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl. (Hygiene of the Application and Toxicology of Pesticides and the Clinical Aspects of Poisoning -- collection of works), vyp. 9, Kiev, 1971, pp 227-234 (from RZh-Farmakologiya. Khimioterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72, Abstract No 2.54.314)

Translation: In rats, 5-8 hours after a single intraperitoneal injection of technical metaldehyde (I) in doses of 22.7, 15.1 and 11.3 mg/kg (1/10, 1/15 and 1/20  $DL_{50}$  respectively), a prolonging of the chronaxy of the flexors and shortening of the chronaxy of the extensors of the rear extremity were observed; the variations of the chronaxy of the antagonistic muscles indicated disturbance of the regulating effect of the central nervous system. In guinea pigs with intraperitoneal injection of I in a dose of 175 mg/kg, disturbances of the respiration were observed in the form of quickening of the respiratory movements and an increase in the respiration volume per minute; the variations reached a maximum after 3 hours; here, the percentage saturation of the arterial blood with  $O_2$  dropped noticeably. In a dose of 50 mg/kg, I had an analogous effect, but the shifts were less expressed.

1/1

USSR

UDC: 632.95

DOBRYANSKIY, V. M.

"On the Toxicology of Methaldehyde Limacide"

V sb. Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl. (Pesticides -- Safety Measures in Using, Toxicology, and the Poison Clinic--collection of works), vyp. 9, Kiev, 1971, pp 227-234 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7N614)

Translation: "The acute oral  $LD_{50}$  doses of methaldehyde (a molluscicide) for guinea pigs, white mice, white rats and rabbits lie in the range of 175-300 mg/kg. The coefficients of cumulation of methaldehyde for a 1/50  $LD_{50}$  injection in white rats and mice are equal to 5.4 and 5.7 respectively, and the cutaneous-oral coefficient is 8.6. Clinically, the pattern of acute poisoning by methaldehyde is predominated by symptoms of affection of the peripheral and central nervous system, respiratory disturbances and signs of oxygen deficiency. P. V. Popov.

1/1

USSR

BOLYCHEVTSEV, A. D., DOBRYDEN, V. A. and RAZUMNYI, V. T.

"The Protection of an Object Servicing a Stable Random Stream"

Pribory i Sistemy Avtomatiki. Resp. Mezhved. Temat. Nauch.-Tekhn. Sb. [Automation Devices and Systems. Republic Interdepartmental Thematic Scientific and Technical Collections], 1973, No 27, pp 62-67 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V269)

Translation: The problem of optimization of an algorithm for protection of a single-line queueing system without waiting and with zero servicing time from failures when the input stream is stationary is studied. A condition is produced, establishing the boundary of economic expediency of introduction of protection. An algorithm is constructed which is optimal with respect to the criterion of mean specific expenditures. It is a threshold-type algorithm. Author's view

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## Reliability Theory

USSA

UDC 621.391.2

BOLYCHEVTSEV, A. D., BOLYCHEVTSEV, E. M., DOBRYDEN, V. A.

"Quantitative Estimates of Overshoot Duration Distribution"

Moscow, Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 313-320

**Abstract:** Simple quantitative approximations were found for the distribution density of the blip duration of a stationary normal random process having continuously twice differentiable realizations for a fixed level. A new quantitative estimate of the distribution density of the overshoot duration of a normal stationary random process for a given level was obtained in the following form:

$$p(t) = \frac{\omega}{2\beta^2\sqrt{1-R^2}} \left\{ \left[ (\beta b)^2 + \frac{k}{2} \right] [1 - \Phi(\beta b)] - \frac{\beta b}{\sqrt{\pi}} \exp[-(\beta b)^2] \right\} \exp \left[ -\frac{1-R}{1+R} \frac{u^2}{2\sigma^2} \right],$$

where all the parameters are expressed in terms of the normalized level  $u/\sigma$ , the normalized correlation function  $R(t)$ , its derivatives and  $\omega$ . This estimate differs from the known estimates (of the same degree of strictness) by its  $1/2$

USSR

BOLYCHEVTSEV, A. D., et al., Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 313-320

simple, clear form. The estimate is close to the known Rice approximation [V. I. Tikhonov, Vybrosy sluchaynykh protsessov, Nauka Press, 1970], but in contrast to the Rice approximation, it approaches zero at  $t \rightarrow \infty$ . Different descriptions of the conditional probabilities of treatment of the horizontal and vertical windows lead to essentially different quantitative solutions.

2/2

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USSR

UDC 681.34'32

DOBRYDEN', V. A., Ukrainian Polytechnical Correspondence Institute

"An Analog-Digital Device for Computing Stieltjes Integrals"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 21, Jul 71, Author's Certificate No 308440, Division G, filed 25 Feb 70, published 1 Jul 71, pp 187-188

Translation: This Author's Certificate introduces an analog-digital device for computing Stieltjes integrals. The device contains interconnected voltage-to-frequency converter, reference frequency oscillator, two-cycle oscillator, time-pulse converters, switches, flip-flops, logic elements, a synchronization circuit, and a reversible counter. As a distinguishing feature of the patent, precision and resistance to interference are improved by connecting the output of the converter which integrates voltage to frequency and the output of the reference frequency oscillator through switches controlled by signals from the outputs of AND logic elements, through OR logic elements, and through a synchronization circuit to the adding and subtracting inputs of the reversible counter. The outputs of the two time-pulse converters of the integrating function, which are connected by trigger inputs to the outputs of the two-cycle oscillator, are

USSR

DOBRYDEN', V. A., Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 21, Jul 71, Author's Certificate No 308440, Division G, filed 25 Feb 70, published 1 Jul 71, pp 187-188

connected through an OR logic element to the one-input of one of the flip-flops, to a pulse delay element, and to the working input of a switch whose controlling input is connected to the one-output terminal of the above-mentioned flip-flop. The outputs of the switch and of the pulse delay element are connected respectively to the one- and zero-inputs of a second flip-flop and through a nonequivalence logic element to the counting input of a third flip-flop whose one-output terminal is connected to the inputs of AND logic elements connected by their second inputs to the zero-output and one-output terminals of the second flip-flop.

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USSR

DOBRYDEN', V. A.

"Optimal Information Selection Algorithms for Systems of One Class"

Otbor i Peredacha Inform. Resp. Mezhved. Sb. [Collection and Transmission of Information. Republic Interdepartmental Collection], 1972, No 54, pp 14-22 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V268, by the author).

Translation: A system is studied which consists of a set of objects interconnected by communications channels, through which information is transmitted at random discrete moments in time and only through one channel at a time, transmission being performed by the object which received information in the preceding communications session. The value of the information transmitted through a channel is determined by its numbers and the time since the preceding communications session. With various assumptions concerning the reliability of receivers and the possibility of group connection to the same channel, control algorithms are constructed for the receivers, providing the maximum mean value of the information received.

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Circuit Theory

USSR

UDC: 621.317.727.4

TSARENKO, V. T., DOBRYDEN', V. A., Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"Mathematical Description and Calculation of Static Operation of a Microwave Power Stabilizer With Semiconductor Attenuator"

Moscow, Radiotekhnika, Vol 27, No 7, Jul 72, pp 73-75

Abstract: The approximation of the control characteristic of a semiconductor microwave attenuator proposed in a previous paper (V. T. Tsarenko, R. A. Valitov, "Radiotekhnika i Elektronika", Vol 11, No 1, 1966) is not adequately precise in many instances. This article proposes a function  $F_{\alpha}(x)$  which approximates the control characteristic with accuracy an order higher than the function used in the previous paper. The paper also contains an analysis and calculation of static operation of a microwave power stabilizer which are based on the use of the function  $F_{\alpha}(x)$ . It is found that the proposed approximation accounts for the saturation actually observed in the power transmission factor as a function of the controlling signal current due to the nonlinearity of recombination processes in the base of the semiconductor

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✓ USSR

TSARENKO, V. T., DOERYDEN', V. A., Radiotekhnika, Vol 27, No 7, Jul 72, pp 73-75

element of the microwave attenuator. This reduces the error in the mathematical description of the properties of the attenuator and improves accuracy in the analysis and calculation of static operation of the stabilizer.

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USSR

UDC 621.375.8

D  
DOBRYKH, G. V., USTIMENKO, V. M.

"Consideration of Reflections in Parametric Devices"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-ta svyazi.  
Vyp. 3 (Materials of the Scientific and Technical Conference. Leningrad Elec-  
trotechnical Communications Institute. Vyp. 3), 1970, Leningrad, pp 185-190  
(from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8 D265)

Translation: A wave transmission matrix was compiled for a multifrequency parametric device of arbitrary structure. The formulas for conversion to the wave transmission matrix of an equivalent four-terminal network are obtained in the two-frequency mode. The expressions for the amplification coefficients of a transfer amplifier and a reflecting amplifier considering reflections from loads in the difference and signal frequency channel are presented.

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USSR

UDC 591.18:577.37:597.21

BRUKMOZER, P. and DOBRYLKO, A. K., Institute of Evolutionary Physiology and Biochemistry imeni T. M. Sechenov, Academy of Sciences USSR, Leningrad

"Evoked Potential in the Telencephalon of the Lamprey *Lampetra fluviatilis* After Stimulation of the Olfactory Nerve"

Leningrad, Zhurnal Evolyutsionnoy Biokhimi i Fiziologii, No 5, 1972, pp 558-560

Abstract: Potentials recorded from the surface of the olfactory bulb of lampreys after stimulation of the olfactory nerve with microelectrodes filled with KCl had a latent period of about 10 msec and consisted of 4 components: (i) rapid, most pronounced in the rostral sections; (ii) small 2- or 3-phase wave preceding the main negative components of the potential; (iii) main negative wave; (iv) positive wave immediately following the negative wave. Evoked potentials from the olfactory lobe were in the form of a negative wave generally followed by a positive phase. Potentials on the surface of the primordial hippocampus had negative polarity and consisted of rapid primary and slow secondary components, usually with considerable amplitude. The results of the study indicate that olfactory potentials in lampreys are similar to those of the olfactory bulb in more highly organized vertebrates and this is thus the  
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USSR

BRUKMOZER, P. AND DOERYLKO, A. K., Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, No 5, 1972, pp 558-560

primary center of olfaction. On the other hand, the above-lying structure, the olfactory lobe, is still very primitively organized. And, judging by the distinct electrical responses, the lamprey primordial hippocampus also performs important olfactory functions.

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USSR

UDC: 621.385.633.1.001.5

YUR'YEV, V. I., ~~DOBRYNCHENKO, V. N.~~, SHESTIPEROV, V. A., NIGMATULLIN, U. A.

"Experimental Study of the Interaction Between Synchronous Waves of an Electron Stream and the Traveling Wave of an Electrodynamic Structure"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 4, Apr 72, pp 830-834

Abstract: The paper presents the results of an experimental study of O-type interaction between the synchronous waves of an electron stream and the field of a special electrodynamic structure. An actual gain of 13 dB is attained as well as an electron amplification factor of more than 20 dB. Quantitative agreement is established between the experimental and theoretical curves for linear gain as a function of beam current and magnetic field strength.

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1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--ELECTROOPTICAL SYSTEM OF COMPARING PULSED SOURCES OF LIGHT -U-  
AUTHOR-(03)-VASILYEVA, R.V., DOBRYNIN, B.M., SHINGARKINA, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKLAD. SPEKTROSK. (USSR), VOL. 12, NO. 1, P. 142-4 (JAN. 1970)  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--ELECTROOPTIC MEASURING EQUIPMENT, ELECTROOPTIC EFFECT, LIGHT PULSE, PULSED ILLUMINATION, LIGHT MODULATOR  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1998/1729 STEP NO--UR/0368/70/012/001/0142/0144  
CIRC ACCESSION NO--AP0122059 UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0122059

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTROOPTICAL LIGHT MODULATOR OPERATING AS A RADIATION SWITCH IS DESCRIBED. THE MAIN ELEMENTS OF THE DESIGN ARE TWO SYSTEMS OF CROSSED POLARIZERS AND A KERR CELL. THE ELECTROOPTICAL LIGHT MODULATOR ALLOWS THE USE OF ONE RECEIVER FOR THE SIMULTANEOUS RECORDING OF LIGHT FROM TWO PULSED SOURCES BY ANTIPHASE MODULATION OF THEIR RADIATIONS.

UNCLASSIFIED

USSR

DOBRYNIN, K. F., Moscow State Pedagogical Institute imeni V. I. Lenin

"Recent Research on Attention"

Moscow, Voprosy Psikhologii, No 3, May/Jun 73, pp 121-128

Abstract: This article is a survey of attempts to "pin down" and quantify the concept of attention. Colin Cherry's renowned work at MIT on the "cocktail party problem" is mentioned in connection with the "filtering" property of attention in man. Colin Cherry's equipment and subsequent research of a more psychological nature provided the basis for D. Broadbent's theory of attention, in which attention is represented by a filter model. A. Treisman's simplified version of the filter concept is described. Some of Treisman's later work (also based on Cheryy's "cocktail party problem") on the differences utilized to distinguish messages is also reviewed. The author feels that the Broadbent-Treisman model of attention comes closest to reality.

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USSR

UDC 621.791.048

KUZ'MIN, G. S., and DOBRYNIN, V. P., Perm' Polytechnic Institute, and  
ISACHENKO, V. A., Motor Construction Plant imeni Ya. M. Sverdlov

"Ceramic Flux for Automatic Welding of Nickel with Steel"

Kiev, Avtomaticheskaya Svarka, No 1, Jan 72, pp 59-61

Abstract: High-quality welded joints of nickel with low-carbon MSt.3 steel and Kh18N10T stainless steel can be produced by using a newly developed ceramic flux in connection with the Sv-04Kh19N9 wire. The slag system of this flux provides for good formation of the seam, stable arc burning, and separability of the slag skin. In connection with various fused fluxes, the Sv-04Kh19N9 wire makes it possible to alloy seams with up to 7-12% Cr. Also given are the chemical composition of the seams in welding of nickel with low-carbon MSt.3 steel with the flux and Sv-04Kh19N9 wire and the optimum relations of the components in the charge of the flux. Microstructures of welded seams demonstrate their high quality. Three illustrations, three tables, two bibliographic references.

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USSR

UDC 621.791.756.019:546.74:669.15.194

KUZ'MIN, G. S., and DOBRYNIN, V. P., Perm Polytechnical Institute

"Special Features of Welding Nickel With Low-Carbon Stainless Steels"

Kiev, Avtomaticheskaya Svarka, No 9, Sep 70, pp 41-44

Abstract: A study was made of the effect of the chemical composition of welds on the quality and properties of joints of NP2 nickel and MSt3 steel made by automatic welding with flux. Sv-08 steel and NP2 nickel wire were used and the angle of the V-butt joint was varied from the steel or nickel side. The nickel content in the welds varied from 15 to 80%. The effect of alloying the nickel-steel welds by manganese, chromium, molybdenum, aluminum, titanium, and other metals, which were introduced by a specially developed ceramic flux, was also investigated. Welds containing 30-60% Ni had a maximum tendency toward pore formation, with the quantity of pores increasing with the oxidizing property of the flux. A table illustrating the effect of harmful impurities (sulfur, phosphorus, oxygen) at various nickel contents in a weld on transverse crack formation is presented. It is concluded that the use of welding materials with low oxygen, sulfur, and phosphorus content, and alloying by 1.8-2% Mn, 8-9% Cr, and 3-4% Mo improve the strength and mechanical properties of the nickel-steel joints.

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USSR

UDC 621.791.756:546.74:546.56

KUZ'MIN, G. S., KUZ'MIN, I. F., and DOBRYNIN, V. P., Perm Polytechnical  
Institute

"Temperature Fields in Welding Nickel With Copper and Stainless Steel Under  
Flux"

Kiev, Avtomaticheskaya Svarka, No 12, Dec 70, pp 26-28

Abstract: A study was made of the heat distribution in automatic welding of NP2 nickel with M1 copper and Kh18N10T stainless steel. The experiments described were made on plates of these three metals measuring 500 x 150 x 5 mm, which were butt-welded without preparation of the edges by the ADF-500 automatic machine. The nickel and stainless steel were welded with Sv-OKh19N9 wire under experimental ceramic flux, and the nickel and copper specimens were welded with NMZhMts 28-2.5-1.5 under fused flux type An-26. To study the heat distribution in welding the different types of plates, the thermic cycles of points at various distances from the seam axis were recorded with the use of Chromel-aluminum thermocouples and the N-700 oscilloscope. It was found that the polarity of the welding current strongly affects the heat distribution.

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Vector Studies

USSR

UDC 614.449.542(571.17)

BELYANTSEVA, G. I., DOBRYNINA, L. I., and GORCHAKOVSKAYA, N. N., Novokuznetsk Municipal Sanitary Epidemiological Station and Institute of Poliomyelitis and Viral Encephalitides, Academy of Medical Sciences USSR

"Results of Long-Term Efforts to Control the Vector of Tickborne Encephalitis in the Novokuznetsk Rayon of Kemerovo Oblast"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 6, 1971, pp 722-730

Abstract: Novokuznetsk is a large industrial center in Kemerovo Oblast located in southwestern Siberia; 28% of the total area of Novokuznetsk Rayon is covered by forests. The incidence of tickborne encephalitis in this region decreased from 214 cases in 1956 to only 4 in 1967. This was achieved by systematic efforts to exterminate the vector, the tick *Ixodes persulcatus*, mostly aerial dusting with DDT and lindane. Some 127,000 hectares (or 21%) of the inhabited area of Novokuznetsk rayon was treated from 1957 to 1968 in order to protect the urban population against ticks (mainly in summer vacation places). DDT was found to be particularly effective in wooded areas visited by persons in connection with their jobs or for recreation both in the year of application and for as long as 11 years thereafter. The acaricide lindane, which remains potent for 1 or 2 years, was used to protect temporary athletic fields, military camps, etc.

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1/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--COMPOSITION AND STABILITY OF A MIXED COMPLEX FORMED BY NEODYMIUM WITH ETHYLENEDIAMINETETRAACETIC AND TARTARIC ACIDS -U-

AUTHOR--(04)-DOBRYNINA, N.A., MARTYNIENKO, L.I., AGEYEVA, L.V., SPITSYN, V.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 477-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COMPLEX COMPOUND, NEODYMIUM COMPOUND, ETHYLENEDIAMINE, ACETIC ACID, TARTARIC ACID, SPECTROMETRIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1997/0647

STEP NO--UR/0062/70/000/002/0477/J479

GIRC ACCESSION NO--AP0119559

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119559

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECTROMETRIC STUDY OF THESE SYSTEMS OF NDCL SUB3 IN VARIOUS PROPORTIONS SHOWED THAT A MONOTARTRATE OF ND WITH FORMULA NDZ PRIME POSITIVE IS FORMED, THE PK OF STABILITY CONST. BEING 4.66. IN A SYSTEM CONTG. TARTARIC ACID (H SUB2 Z) AND THE DI-NA SALT OF EDTA (H SUB4 A), A MIXED COMPLEX IS FORMED WITH COMPN. OF NDAZ PRIME3 NEGATIVE AND STABILITY CONST. 1.03 TIMES 10 PRIME2. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.373.826

DOBRZHANSKIY, G. F., KULEVSKIY, L. A., SAVEL'YEV, A. D., SMIRNOV, V. V.

"Discrete Frequency Tuning of Emission on the Second Harmonic on a Lithium  
Todate Crystal From a Carbon Monoxide Laser"

Kratkiye soobshch. po fiz. (Brief Reports on Physics), 1972, No 6, pp  
13-17 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No R2D146 by A. K.)

Translation: The authors report on achieving emission on the second har-  
monic on a lithium niobate crystal with CO laser pumping. Rearrangement  
of the spectrum of the transformed emission is effected discretely in the  
2.5-2.8  $\mu\text{m}$  range by changing the angle between the optical axis and the  
direction of propagation of the emission on the fundamental frequency.  
The laser operates in the Q-switched mode. Switching is done by a reflect-  
ing wedge rotating at 125 Hz. Peak emission power on the second harmonic  
is 4 mW for a pulse duration of 2  $\mu\text{s}$ . In the emission spectrum of the  
second harmonic, 2-3 lines are observed with effective conversion. By in-  
creasing the length of the crystal (5 mm or more) and reducing the diver-  
gence of pumping emission to 30' or less, it is possible to achieve ef-  
fective conversion of emission in the spectral region of 0.01  $\mu\text{m}$  and less,  
which corresponds to the individual lines of a CO laser.

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Crystals and Semiconductors

USSR

DOBRZHANSKIY, G. E., KITAYEVA, V. F., KULEVSKIY, L. A., POLIVANOV, YU. N.,  
POLUEKTOV, S. N., PROKHOROV, A. M., SOBOLEV, N. N., Physics Institute imeni  
P. N. Lebedev of the Academy of Sciences USSR

"Spontaneous Parametric Radiation of the  $\alpha$ -HIO<sub>3</sub> Crystal"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, No. 11,  
5 Dec 70, pp 505-508

Abstract: The first observation of spontaneous parametric radiation in the biaxial crystal  $\alpha$ -HIO<sub>3</sub> belonging to class 222 of the rhombic system is recorded. It is noted that if a crystal having quadratic nonlinearity is exposed to a laser beam, there is a probability of a laser photon with frequency  $\omega_{||}$  spontaneously decaying into two photons: a photon of the signal frequency  $\omega_1$  and a photon of an additional frequency  $\omega_2$  so that

$$\omega_{||} = \omega_1 + \omega_2.$$

The frequencies of the spontaneous parametric radiation  $\omega_1$  and  $\omega_2$  are determined by the dispersion characteristics of the crystal, since the process is effective if

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USSR

DOBRZHANSKIY, G. F., et al, Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki, No. 11, 5 Dec 70, pp 505-508

the following condition is fulfilled:

$$k_H = k_1 + k_2,$$

where  $k_H$ ,  $k_1$ , and  $k_2$  are the wave vectors of the pumping and of the signal and additional waves. The phenomenon is termed particularly interesting, since it is observed even at pumping powers too small to excite parametric generation, and in the absence of a resonator it can be used to obtain angular, temperature, and electrooptical curves of active media suitable for use in parametric generators of light. The  $\alpha$ -HIO<sub>3</sub> crystal was transparent in the region 0.4-1.4  $\mu$  and had high nonlinear constants. No optical inhomogeneities were observed in the refractive index under the action of optical radiation of high power density, a feature very important in developing parametric generators of light. A continuous argon laser with wavelengths  $\lambda_{H1} = 4880 \text{ \AA}$  and  $\lambda_{H2} = 5145 \text{ \AA}$  with an output power of up to 1 w on each of the wavelengths was used for pumping. Parametric radiation arising in the crystal and polarized along the Y-axis was recorded in the direction of pumping propagation. Typical spectrograms of the spontaneous parametric radiation signal are given which illustrate the dependence of the signal frequency  $\omega_1$  on the direction of propagation of pumping in the crystal. It was noted that such crystals can be used as a material to produce both pulsed and continuous parametric generators tuned in the region 0.6-1.3  $\mu$ .

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1/2 054

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--EFFECT OF HARDENING AND SOFTENING IMPURITIES AND IRRADIATION ON THE THERMOLUMINESCENCE AND THERMOEMISSION OF EXCELECTRONS WITH LITHIUM

AUTHOR--(04)-BELYAYEV, L.M., KNAB, G.G., UROSOVSKAYA, A.A., DOBRZHANSKIY, G.F.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 317-21

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--THERMOLUMINESCENCE, CRYSTAL IMPURITY, LITHIUM FLUORIDE, PHOTON EMISSION, HARDNESS, LUMINESCENCE SPECTRUM, RADIATION EFFECT, URANIUM, MAGNESIUM INDIUM, MERCURY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1476

STEP NO--UR/0070/70/015/002/0317/0321

CIRC ACCESSION NO--AP0118465

UNCLASSIFIED



2/2 054

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0118465

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF DIFFERENT TYPES OF IMPURITIES (U, MG, WHICH HARDEN AND IN, AND HG WHICH SOFTEN THE CRYSTAL) AND OF IRRADN. WAS STUDIED ON THE LUMINESCENCE, EMISSION, AND MECH. PROPERTIES OF LIF. THE PROPERTIES WERE COMPARED FOR PURE AND IMPURE CRYSTALS FOR DIFFERENT IRRADN. TIMES. THE HARDENING IMPURITIES INCREASE THE INTENSITY OF THE LUMINESCENCE AND DECREASE THE EMISSION INTENSITY. IN THE THERMOLUMINESCENCE SPECTRA FOR LIF, MG, U PRODUCES MAX. WHICH CORRESPOND TO THE V BAND ABSORPTION. HG FACILITATES THE ACTIVATION DURING IRRADN. FOR LONG EXPOSURES TO X RAYS OF SOME NEW PROCESSES WHICH SUPPRESS THE ELECTRON EMISSION AND RECOMBINATION. THE SOFTENED CRYSTALS HAVE AN INTENSE EXOEMISSION AND STRONG THERMOLUMINESCENCE. X RADIATION REACTS WITH THE IMPURITIES, BRINGING ABOUT COMPLEX CHANGES IN THE DEFECT STRUCUTRE. FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

Receivers and Transmitters

USSR

UDC: 621.3.019.4

~~DOBZHANSKIY, I. A.~~ and GERASIMENKO, V. F.

"Computing FM Receiver Selectivity"

Kiev, Izvestiya Vuzov SSSR--Radioelektronika, Vol 13, No 3, 1970,  
pp 361-369

Abstract: It is assumed, in making the calculation of the title, that the portion of the receiver from the receiver input to the input of the limiter is linear, and creates no linear distortions of the signal. Other assumptions are that the amplitude-frequency characteristic of the i-f amplifier is symmetrical around the intermediate frequency, that the amplitude limiter realizes inertialess limiting of the process at a particular level, that the frequency detector is inertialess with respect to the frequency equal to the difference between the instantaneous values of the signal and noise frequencies -- that is, with respect to the beat

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USSR

DOBRZHANSKIY, I. A., et al, Izvestiya Vuzov SSSR--Radioelektronika,  
Vol 13, No 3, 1970, pp 361-369

frequency -- and is linear with respect to the amplitude of the process entering it, that the capacitance coupling the low frequency filter and the final voltmeter is infinitely large, that the filter has an ideal amplitude-frequency characteristic within certain frequency limits. The voltmeter terminating the receiver consists of a nonlinear inertialess four-terminal network, an ideal integrator, and an indicator giving average readings. The function of the voltmeter is to measure two-signal selectivity. The aim of this article is, in part, to supply an effective method of computing two-signal and three-signal selectivity which, in turn, is connected with the problem of communications band density.

2/2

USSR

UDC: 531.7.087.92

DOBYEN V. V., STABNIKOV, M. V., IOFFE, A. F., Physical-Technical Institute  
imeni A. F. Ioffe

"Displacement Sensor Receiving Head"

USSR Authors' Certificate No 242413, Filed 26 December 1967, Published 11  
September 1969 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika  
i Vychislitel'naya Tekhnika, No 7, 1970, Abstract No 7A114P, by N. S.)

Translation: The receiver head of a movement sensor is described. It con-  
tains a light source, large and small diffraction gratings, a clamp contain-  
ing a rotating drum with four lenses, and four phototransistors. The photo-  
sensitive layer of each transistor is located in the focal plane of the  
corresponding lens. In order to increase the reliability and simplify the  
design, the phototransistors are placed in the rotating drum in the angles  
of a parallelogram, the sides of which are described by lines connecting  
the sensors where the axes of the phototransistors intersect. The distance  
between these axes is equal to four times the width of the small diffraction  
grating, providing a phase shift of 90° between the phototransistor signals.  
Two illustrations.  
1/1

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USSR

UDC: 541.183

GURFEYN, N.S., DOBYCHIN, D.P., KOBLIVENKO, L.S., Institute of Scientific Research  
Industry USSR  
"APPROVED FOR RELEASE: 08/09/2001" CIA-RDP86-00513R002200630011-6

"Computation of the Increase in Adsorption Energy in Pores of Molecular Dimensions  
for the Model Case of Nonspecific Nonlocalized Adsorption"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 3, Mar 70, pp 741-746

Abstract: A method is proposed for calculating the energy of nonspecific adsorp-  
tion in pores of molecular dimensions for an idealized model, and the corresponding  
computer calculations and solutions are given. The picture of change in the  
shape of the potential curves is followed as the size of the pores approaches that  
of the molecules. It is shown that the bottom of a potential well shifts as a re-  
sult of a change in adsorption energy, as well as a change in the distance of the  
molecule from the wall. A conclusion is drawn on the possibility of effects of  
apparent reduction in the pore volume and nonhomogeneity of pore dimensions when  
the molecular probe method is used. It is noted that the calculated value of the  
maximum energy in pores of molecular dimensions coincides satisfactorily with the  
experimentally observed values. The effect which nonhomogeneity of pore distribu-  
tion with respect to size has on the integral energy of nonspecific adsorption on  
molecular sorbents is studied.  
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USSR

UDC 518

DOBYSH, A. D.

"Algorithm for Minimization of a Function Computed With Random Error"

Sb. tr. Mosk. inzh-stroit. in-t (Collection of Works of the Moscow Construction Engineering Institute), No 83, 1970, pp 124-139 (from Referativnyy Zhurnal - Matematika, No 8, Aug 71, Abstract No 8B781)

Translation: A heuristic algorithm is proposed for finding the minimum of a smooth convex function which is contained within a given multidimensional parallelepiped. The function is given by means of an operator that permits the calculation at any point of its value with an additive random error that has zero mathematical expectation. In addition to the function, the dispersion of the error calculated exactly or approximately can be assigned. The algorithm was implemented in the form of a procedure in abbreviated algorithmic language ALGOL-60. The operation of the algorithm is illustrated with its numerical results obtained on a computer for quadratic and near-quadratic functions. Author's Abstract.

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USSR

UDC 621.791.052:620.178.2:62-97

DOBZHENKO, A. S. Candidate of Technical Sciences, Central Scientific Research Institute of Steel Construction Planning

"Transition Temperature of Intense Destruction in Ferro-Perlite Steel Welds"

Moscow, Svarochnoye Proizvodstvo, No 1, Jan 71, pp 36-39

Abstract: A study is made of the causes of intense destruction in welded structures designed for extended operation. Cyclical variations in loading and temperature, the necessity of operation at high temperature levels, and operation under neutron bombardment are examined. The tests were made on flat welded specimens of 22K steel after high tempering at 620-640° C, normalization at 920-950° C, and further tempering. For hand and automatically welded joints, the tests were made directly after the first tempering; for electroslag welding, the tests were not begun until the entire preliminary process was completed. Transverse cross sections measuring 260-500 cm<sup>2</sup> at maximum testing machine stress were than made in flat, 90-mm-thick form. Curves are plotted for the transition temperature of damaged specimens and for the stress deformations of the specimens, as well as for irradiated materials.

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- 78 -

DOCHKIN, I. I.

Effect of UHF WAVES ON HEMOPOLYTES

HISTORIC AND EPIDEMIOLOGY

J-9603

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DISSE

UDK 616.411-003.971:621.396.967  
S3: Military Medical Journal  
No. 1 1970  
THE EFFECT OF UHF WAVES ON HEMOPOLYTES  
(Experimental investigation)  
I. I. Dochkín, Lieut.-Col., Medical Service

Ultra high frequency electromagnetic waves have a high level of biological activity, but our knowledge of the nature and degree of the influence of a UHF field on many of animals is still far from complete. Exposure to heavy doses of UHF can lead to serious consequences, but smaller doses, too, may prove to be no less dangerous. It is known that the effect is not always apparent immediately after exposure. We have studied the changes in peripheral blood and morphology of the bone marrow in experiments on white mice, exposing them to both acute and chronic doses of UHF radiation with a peak pulse power of 30 microwatts per cm<sup>2</sup>. Two groups of animals with a peak pulse power of the first consisted of 10 rabbits, and the second -- of 7 dogs. All of them were exposed to UHF radiation by means of a UHF-36 device (wavelength 12.62 cm, frequency 2375 mc., peak pulse power 30 microwatts per cm<sup>2</sup>). The duration of exposure was 60 minutes, the distance from the source of the radiation to the surface of the subject was 30 cm. The output capacity of the device was 5% water. The diagram of the irradiation of the rabbit is shown below, in table 1.

Table 1.

Rabbit No.	Number of exposures	How soon after last exposure the test was made
1	1	After 2 hours
2	2	After 24 hours
3	3	After 5 days
4	4	After 24 hours
5	5	After 5 days
6	6	After 24 hours
7	7	After 5 days
8	8	After 24 hours
9	9	After 5 days
10	10	After 24 hours

First test -- after 24 hours  
Second test -- after 5 days  
First test -- after 24 hours  
Second test -- after 10 days

1/2 036 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--EFFECT OF POLY(VINYL CHLORIDE) PLASTICIZATION ON THE LIFE OF FILM  
WELDS -U-  
AUTHOR-(03)-DODIN, M.G., RATNER, S.B., BARSHEYN, R.S.  
COUNTRY OF INFO--USSR  
SOURCE--PLAST. MASSY 1970, (3), 54-6  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--POLYVINYL CHLORIDE, PLASTIC FILM, WELD EVALUATION, PLASTIC  
MECHANICAL PROPERTY, RUPTURE STRENGTH  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1999/1790 STEP NO--UR/0191/70/000/003/0054/0056  
CIRC ACCESSION NO--AP0123587  
UNCLASSIFIED



2/2 036

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123587

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DURABILITY OF PLASTICIZED POLY(VINYL CHLORIDE) (I) WELDED BONDS OBEYED THE RATNER EQUATION (S. B. RATNER, 1968). PLASTICIZATION OF I DID NOT AFFECT THE MAX. ACTIVATION ENERGY OF FAILURE OF THE WELDED BOND, BUT DID AFFECT THE STRUCTURE SENSITIVE CONST. UPSILON, ANALOGOUS TO UPSILON IN THE ZHURKOV EQUATION (S. N. ZHURKOV, 1961). INCREASED DEGREE OF PLASTICIZATION LOWERED THE TEAR STRENGTH AND INCREASED THE PEELING STRENGTH.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--EXPERIENCE FROM SURGICAL INTERVENTION ON SHIPS SAILING AT LOW  
LATITUDES -U-  
AUTHOR--(03)-NOVOZHILOV, G.N., BONADYSEV, N.Z., DODDCHKIN, N.A. *D*  
COUNTRY OF INFO--USSR  
SOURCE--VOYENNO MEDITSINSKIY ZHURNAL, MOSCOW, USSR, JULY 1969, NR 7, P  
69-70  
DATE PUBLISHED----JUL70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--SURGERY, NAVAL MEDICINE, WOUND, MICROORGANISM CONTAMINATION,  
PAIN, STOMACH  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/1734 STEP NO--UR/0177/69/000/007/0069/0070  
CIRC ACCESSION NO--AP0135312  
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135312

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT LOW LATITUDES THE POST OPERATIVE COURSE OF THE DISEASE WAS CHARACTERIZED BY THE BANDAGE COVERING THE INCISION BEING SOAKED THROUGH WITH PERSPIRATION. THE INCREASED LEVEL OF PERSPIRATION WHICH CAUSES MACERATION AND LOWERING OF THE ACIDITY OF THE SKIN CREATES FAVORABLE CONDITIONS FOR THE VITAL ACTIVITY OF MICROORGANISMS AND FOR THEIR PENETRATION INTO THE INCISION. IN ORDER TO PREVENT INFECTION OF THE INCISION IT WAS NECESSARY EACH DAY UNTIL THE REMOVAL OF THE STITCHES TO CLEAN THE SKIN AND CHANGE THE BANDAGE. THE STITCHES WERE REMOVED ON THE SEVENTH TO EIGHTH DAY. MOST OF THE PATIENTS (61 PERSONS) STAYED IN THE INFIRMARY FOR 8 TO 11 DAYS; THE REMAINING ONES STAYED 12 TO 14 DAYS. THE LONGER TREATMENT OF THE 7 PATIENTS WAS IN CONNECTION WITH SUPPURATION OF THE INCISION FROM THE OPERATION. THE APPEARANCE OF SUPPURATION DURING THE POST OPERATIVE PERIOD, IN SPITE OF THE CAREFUL INDIVIDUAL ATTENTION, APPARENTLY IS EXPLAINED BY THE INFECTION OF THE INCISION AS A CONSEQUENCE OF THE INCREASED LEVEL OF PERSPIRATION UNDER THE UNFAVORABLE MICROCLIMATIC CONDITIONS. NO OTHER COMPLICATIONS WERE OBSERVED AFTER THE OPERATIONS. UPON RECOVERING THE PATIENTS RECEIVED A SHORT PERIOD OF REST AND RELAXATION AND WERE FREED FROM HEAVY WORK AND FROM STANDING WATCH. IN CONCLUSION WE FEEL THAT IT IS NECESSARY TO NOTE THAT IN ORDER TO BE ABLE TO OPERATE EARLIER IN THE CASE OF ACUTE APPENDICITIS THE MEDICAL INDOCTRINATION WORK SHOULD INCLUDE CONSTANT REMINDERS TO THE PERSONNEL OF A SHIP TO GO IMMEDIATELY TO THE MEDICAL SECTION IN THE CASE OF THE OCCURRENCE OF ACUTE PAINS IN THE STOMACH.

UNCLASSIFIED

AA0040727- Dodoka, V.G.

UR 0482

1-70

Soviet Inventions Illustrated, Section I Chemical, Derwent,

242338 HEAT-INSULATION of the top part of a steel ingot is provided by a rapidly hardening composition which is poured between the casting mould and a model. In an example, the composition consists of 95-96% of quartz sand and 4-5% of ferrochrome slag, with addition of 7-10% of a binder comprising water glass and a foaming agent). The insulation does not require any additional drying; it is porous and permeable to gases. This method is simpler and more rapid than the conventional methods.

12.5.68 as 1239974/22-2. V.G. DODOKA et alia.  
"ZAPOROZHSTAL" WORKS. (2.9.69) Bul 15/25.4.69.  
Class 31b. Int.Cl.B 22d.

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