

USSR

UDC 615.373:616.981.553-078.73

BHILATOVA, T. I., IVANOVA, L. G., and MATVEYEV, K. I., Institute of
Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences
USSR

"The Use of Highly Specific Antibotulinus Sera to Detect Cl. botulinum
Types A and B by the Fluorescent-Antibody Method"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971,
pp 101-106

Abstract: Inoculation of rabbits with O-type-specific antigen isolated
from Cl. botulinum types A and B yielded highly specific sera suitable for
detecting the microorganisms by the fluorescent antibody method in envi-
ronmental objects. Study of pure cultures and over 150 samples of soil and
food in which Cl. botulinum types A and B were detected both by the neu-
tralization test in mice and by the indirect fluorescent antibody method
confirmed the high specificity of the sera. Cl. botulinum was detected by
the fluorescent antibody method in every one of the samples containing
botulinus toxin.

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DC 576.851.553.097.29.074

PAVLOVA, I. B., and BULATOVA ~~.....~~, Institute of Epidemiology and Microbiology
izeni Gazaleya

"Electron Microscope Study of Type B Clostridium botulinum During Toxin Formation"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, Jul 70,
pp 109-112

Abstract: A study was made of ultrathin sections of botulinum type B (strain 175) cultured on casein-mushroom medium for 24 to 48 hours. Most of the cells were found to be in the vegetative stage; the cell walls consisted of five layers 300 to 350 Å thick. Toxin formation was most intense after 5 to 7 days, and many bacterial cells were simultaneously undergoing lysis. Within, around, and between the cells were osmiophilic masses that often formed crystals. The periodicity of the crystal lattice was about 150 Å. The lattice was symmetrical in three dimensions and its construction was like that of protein crystals. The osmiophilic masses are believed to be the protein-toxin produced by the cells and released into the medium upon complete or partial lysis.

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UDC 576.851.553.097.2


B
BULATOVA, T. I. and PEROVA, Ye. V., Institute of Epidemiology and Microbiology
Imeni Gamaleya, Academy of Medical Sciences USSR

"Antigenic Structure of *Cl. botulinum* Types E and F"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1970, pp
28-32

Abstract: Study of nine type E *Cl. botulinum* strains (188-20, 8/E, Nanaimo, 4240, 809, 714, 153, Detroit 8, 45) and three type F strains (470, Craig, Eklund) showed that their toxins consist of two toxic components, a main or homologous component and a heterologous component present only in very small amounts. The toxins of the three type F strains were identical in antigenic structure because they were completely neutralized by type F serum against strain 470, and vice versa. Strain 470 is therefore suitable for use in preparing toxoids as well as therapeutic and diagnostic sera. Of the three strains, only strain 470 has nontoxic soluble and insoluble antigens in common with *Cl. botulinum* types A and B, but it has no nontoxic antigens in common with either the Craig or Eklund strains. Of the nine type E strains studied, 188-20 seems to be the most suitable for preparation of diagnostic type-specific antitoxin serum, because it contains an insignificant amount of the toxic component of type F.

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1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ANTIGENIC STRUCTURE OF CL. BOTULINUM, TYPES E AND F -U-
AUTHOR--(02)-BULATOVA, T.I., PEROVA, YE.V. 
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 4,
PP 28-32
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CLOSTRIDIUM BOTULINUM, HEMAGGLUTINATION, BACTERIAL TOXIN,
ANTIGEN, BLOOD SERUM

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/1471 STEP NO--UR/0016/70/000/004/0028/0032
CIRC ACCESSION NO--AP01C9531

UNCLASSIFIED

2/2 027

CIRC ACCESSION NO--AP0109531

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. BY CROSS REACTION OF NEUTRALIZATION, REACTION OF AGGLUTINATION AND HEMAGGLUTINATION THE AUTHORS STUDIED THE ANTIGENIC STRUCTURE OF CL. BOTULINUM TYPES E AND F. IT WAS ESTABLISHED THAT BOTULIN TOXINS, TYPES E AND F CONSISTED OF TWO TOXIC COMPONENTS. THE PRINCIPAL IN EACH ONE OF THEM IS HOMOLOGOUS COMPONENT. THE AMOUNT OF HETEROLOGOUS COMPONENT IS INSIGNIFICANT (0.005) (A PERCENT) IN COMPARISON WITH THE HOMOLOGOUS COMPONENT. ANTIBOTULINUM SERUM, TYPE F AGAINST THE STRAIN NO. 470 COMPLETELY NEUTRALIZES THE TOXINS OF TWO OTHER STRAINS OF THIS TYPE UNDER STUDY, AND, ON THE CONTRARY; THEREFORE, STRAIN NO 470 MAY BE RECOMMENDED FOR THE PREPARATION OF TOXOIDS, AND ALSO OF THE THERAPEUTIC AND DIAGNOSTIC SERA. OF THE THREE CL. BOTULINUM STRAINS TYPE F ONLY STRAIN NO. 470 HAS NONTOXIC SOLUBLE AND INSOLUBLE ANTIGENS COMMON WITH THE CAUSATIVE AGENTS OF BOTULISM, TYPES A AND B. NO COMMON NONTOXIC ANTIGENS IN THE F 470 STRAINS WITH OTHER TYPE F STRAINS (CRAIG AND EKLUND) WERE DETECTED.

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USSR

UDC: 519.2

BULATOVIĆ, Jelena

"On the Theory of Spectral Multiplicity of Random Fields"

Mat. vesn. (Mathematics Bulletin), 1972, 9, No 1, pp 59-65 (from RZh-Kibernetika, No 5, May 73, abstract Nō 5V141 by M. Yadrenko)

Translation: Representations are derived for regular random fields which are analogous to the expansion of a completely indeterminate random process given by Kramer (RZhMat, 1962, SV20).

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USSR

UDC 543.544.6:546.831'185

DOLMATOV, YU. D., BULAVINA, Z. N., and DOLMATOVA, M. YU.

"Structure and Ion Exchange Properties of Zirconium Phosphate"

Leningrad, Radiokhimiya, Vol 14, No 4, 1972, pp 530-534

Abstract: Structural and ion-exchange properties of two samples of zirconium phosphate were investigated. ZrP_{C1} was obtained by precipitation with H_3PO_4 from a solution of $ZrOCl_2 \cdot 8H_2O$. ZrP_S sample was also precipitated with H_3PO_4 from a $Zr(SO_4)_2 \cdot 4H_2O$ solution. Both samples appeared to be identical by chemical and x-ray structural analysis. Data from the differential thermal analysis and thermogravimetric analysis showed similarities in both ZrP samples, and some differences related to the dimensions in their crystalline lattice: ZrP_S has a more precisely defined structure of crystals. The ion exchange properties were investigated by the ability to separate Cs, Sr, and Ca ions. The differences observed in the sorption capacity at pH 4 and 7 could be related to the crystal structure differences.

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1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EFFECT OF IODINE PREPARATIONS ON PATIENTS AT EARLY PERIODS OF
CEREBRAL ATHEROSCLEROSIS -U-
AUTHOR--BULAVKO, YU.V. **B**
COUNTRY OF INFO--USSR
SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 49-51
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ATHEROSCLEROSIS, CEREBRUM, IODINE, DRUG TREATMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY KEEL/FAME--3002/1693 STEP NO--UR/0475/70/000/004/0049/0051
CIRC ACCESSION NO--AP0129063
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0129063

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IODINE PREPARATIONS WERE USED FOR THE TREATMENT OF PATIENTS WITH EARLY STAGES OF CEREBRAL ATHEROSCLEROSIS. THE IODINE PREPARATIONS WERE ADMINISTERED ORALLY, INTRAMUSCULARLY AND INTRAVENOUSLY. RESULTS INDICATE THAT INTRAVENOUS ADMINISTRATION OF A 10PERCENT SOLUTION OF SODIUM IODIDE EXERTS A DISTINCT CLINICAL EFFECT AND POSITIVE CHANGES MANIFESTED, IN PARTICULAR, IN MOBILIZATION OF THE ANTICOAGULATING AND LIPOLYTIC SYSTEMS OF THE BLOOD. WITH OTHER METHODS OF ADMINISTRATION THESE CHANGE WERE LESS DISTINCT.

UNCLASSIFIED

BULAVS, F. Ya.

50: JPRS 59610
25 JULY 1973

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COMPRESSIVE STRENGTH AND DEGRADATION PROPERTIES OF CARBON-FIBER REINFORCED PLASTICS

UDC 678.5.06:539.4.011

Article by Ya. V. Avdeykin, F. Ya. Bulavs, G. N. Gulyayev, Polymer Mechanics Institute of the Latvian SSR Academy of Sciences, Riga; Rifa, Sakhanka Paltovskoy, Kuzhish, No 1, 1973, numbered 25 April 1972, pp 29-31

An experimental study was made of the deformational and strength characteristics of unidirectionally carbon-fiber reinforced plastic under uniaxial compression in the longitudinal and transverse directions and at an angle of 45 degrees to the direction of reinforcing both during short-term and prolonged tests. On the basis of the deformational properties of the components, an effort was made to describe the stress curves of the plastic in all three loading directions. When forecasting the compressive strength in the direction of the reinforcing and transverse to the reinforcing, the Mohr theory was used. There are three tables, five illustrations and a five-entry bibliography.

Carbon-fiber reinforced plastics are a prospective form of composite material. The mechanical properties of these composite materials have still been investigated extremely inadequately. It turns out that the use of carbon-fibers as the reinforcing does not lead to a proportional change in all the mechanical characteristics of the plastic by composition, for example, with

The purpose of this paper is to study a number of mechanical properties of unidirectionally carbon-fiber reinforced plastics in the presence of compression both under short-term and prolonged loads.

For the experimental study of the deformational properties of the carbon-fiber reinforced plastic, prismatic specimens were prepared 90 mm long with transverse dimensions of 7 x 15 and 5 x 15 mm. Resistance sensors were glued to both lateral surfaces of the specimens in the direction of effect of load and perpendicular to it. The deformations were measured by the TA-2 electromechanical strain gauges and using the 1516 type strain gauge built by the Bureau and Kerr Company.

In order to determine the deformational characteristics in the presence of compression perpendicular to the direction of the reinforcing and at an angle of 45 degrees to the direction of reinforcing, the specimens were loaded in an all-purpose PH-1000 tester to 400 kilogram-force/cm². In order to determine the deformational characteristics under compression in the direction of the reinforcing, the specimens were loaded to 900 kilogram-force/cm².

The results of studying the Young's modulus of unidirectionally carbon-fiber reinforced plastic in the direction of the reinforcing (E₁), perpendicular to the direction of the reinforcing (E₂) and at an angle of 45 degrees with respect to the direction of reinforcing (E₄₅) and the values of the Poisson coefficient ν₂₁ are presented in Table 1 where each of the deformational characteristics is defined by the results of testing three specimens. The theoretical values of the moduli calculated by the formulas presented in reference [1] are also presented in this table.

Table 1
Comparison of the experimental and theoretical values of the Young's modulus and Poisson coefficients

E ₁ · 10 ⁻⁶ kg-force/ cm ²	E ₂ · 10 ⁻⁶ kg-force/ cm ²	E ₄₅ · 10 ⁻⁶ kg-force/ cm ²	ν ₂₁	
			Expt.	Theor.
0.211	0.205	0.046	0.104	0.104
0.207	0.201	0.046	0.102	0.102
0.212	0.200	0.046	0.102	0.102

Note. The specimen dimensions were 50 × 15 × 7 and 50 × 15 × 9 mm. The binder was epoxy resin. When calculating the theoretical values of the moduli by the formulas of reference [1], the elastic characteristics of the moduli by the isotropic carbon-fiber were the following: E₁₁ = 3 · 10⁶ kg-force/cm²; E₂₂ = 0.07 · 10⁶ kg-force/cm²; ν₂₁ = 0.25.

The characteristic diagrams of the deformation of the carbon-fiber reinforced plastic during uniform loading to rupture are illustrated in Figure 1. In order to estimate the effect of the time factor on the deformational properties of the carbon-reinforced plastic, the specimens were creep tested for two loading levels amounting to 0.3 and 0.6 of the short-term compressive strength. The temperature of the experiments was 20 ± 1°C. The experimental results are shown in Figure 2.

USSR

BULAVSKIY, V. A.

"A Model of Planning of Deliveries and a Method for Its Solution"

Sb. tr. In-t mat. Sib. otd. AN SSSR [Collected Works of Mathematics Institute, Siberian Division Academy of Sciences USSR], No 1(18), 1971, pp 134-157, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V397 from the Introduction).

Translation: The problem of planning assignment of consumers to suppliers is studied. The problem in linear programming which arises in this case is formulated and a detailed algorithm is presented for the solution, written in the input language of the AL'FA system (a modification of ALGOL-60). The algorithm is based on a method described in an earlier work by the author (Abstract 3 V396).

USSR

BULAVSKIY, V. A.

"The Solution of One Special Transport Problem with Additional Limitations"

Sb. tr. In-t mat. Sib. otd. AN SSSR [Collected Works of Mathematics Institute, Siberian Division Academy of Sciences USSR], No 1(18), 1971, pp 7-21, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V396 from the Introduction).

Translation: An algorithm is suggested for solution of the transport problem in a network with additional general limitations. The method is a general method, but it was considered in its development that most junctions on the network are only assigned points.

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USSR

UDC: 621.372.413

BULAYEV, V. P., SHUROVA, I. G., PANKOV, L. N.

"On the Problem of Reducing Emission Losses From Circular Openings in Coaxial Resonators"

Sb. Nauchn. tr. Vladimir. politekhn. in-t (Collected Scientific Works of Vladimir Polytechnical Institute), 1970, vyp. 9, pp 74-77 (from RZh-Radio-tekhnika, No 6, Jun 71, Abstract No 6B162)

Translation: A solution is found for the problem of minimizing the level of emission losses from circular openings in coaxial resonators. Three tables, bibliography of three titles. Resumé.

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1/2 010 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--MAGNETOSTATIC SURFACE WAVES IN FERROMAGNETS -U-

AUTHOR--BULAYEVSKIY, L.N.

B

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(2), 799-806

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--FERROMAGNET, MAGNETIZATION, SURFACE WAVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REFL/FRAME--1988/0646

STEP NO--UR/0181/70/012/003/0799/0806

CIRC ACCESSION NO--AP0105625

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0105625

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ROLE OF SPACIAL DISPERSION WAS INVESTIGATED FOR SURFACE MAGNETOSTATIC MODES WITH SMALL WAVENOS. IF THE FREQUENCY OF SURFACE MAGNETOSTATIC WAVES DOES NOT COINCIDE WITH THE FREQUENCIES OF VOL. EXCHANGE WAVES OF MAGNETIZATION, THEN EVEN AFTER THE CONSIDERATION OF THE SPACIAL DISPERSION THE WAVE REMAINS A SURFACE WAVE AND THE SPACIAL DISPERSION IS NOT ESSENTIAL. BUT IF THE FREQUENCY OF SURFACE MAGNETOSTATIC WAVES FALLS IN THE INTERVAL OF FREQUENCIES OF VOL. SPIN WAVES, THEN IN THE COMPLETE SOLN. OBTAINED WITH THE CONSIDERATION OF THE SPACIAL DISPERSION, FUNCTIONS OF THE SURFACE AS WELL AS OF THE VOL. TYPE ARE REPRESENTED WITH APPROX. EQUAL AMPLITUDES, AND THE EXACT SOLN. IS NO LONGER A SURFACE PROBLEM. THIS SITUATION IS OBSD. IN THE SYSTEM FERROMAGNET VACUUM, AND NO SURFACE MAGNETOSTATIC MODES EXIST WITH SMALL WAVENOS. UNDER CERTAIN CONDITIONS, SUCH WAVES ARE PRESENT IN A SYSTEM CONSISTING OF 2 DIFFERENT FERROMAGNETS.

UNCLASSIFIED

Oncology

USSR

UDC 616-006

KORMAN, D. B., BULAYEVSKIY, N. L., and EMANUEL, N. M., Institute of Chemical Physics, Academy of Sciences, USSR

"On the Evaluation of the Efficacy of Antitumor Chemotherapy by Patient Survival"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 4, 1971, pp 596-606

Abstract: The paper examines the quantitative evaluation of the efficacy of patient treatment on the basis of the supposition that the survival of a patient is determined by the formula $t_m = \tau \gamma$, where t_m is the duration of life from the beginning of therapy until death, τ is the time when the tumor is doubled, and γ is the tumor's growth factor which depends on the size of the tumor at the beginning of therapy and at the time of death. It is assumed that effective therapy prolongs life by destroying part of the tumor cells. Two plans of treatment were considered. With a one-time therapy course the following quantitative parameters were determined: number of patients sensitive to the preparation; number of patients cured as a result of its use; number of patients whose life was prolonged as a result, and the extent of such

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KORMAN, D. B., et al., Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 4, 1971, pp 596-606

prolongation; and the average decrease in size of the tumor from the effect of the therapy. The second plan of treatment (therapy continuous up to time of death) makes it possible by comparing the survival of treated and control patients to determine the proportion of tumor cells destroyed by the preparation at any instant and to establish the time of onset of resistance to the preparation. Investigation by comparison consists of several stages: 1) forming a test group and control group of patients, selected with a similar extent of the process; 2) determination of a reliable difference in the survival in these groups; 3) determination of quantitative characteristics of the direct effect of the preparation on the tumor. Survival of a group of patients is characterized by three parameters: number of cured patients, mean logarithm of period of survival, and standard deviation of the log-normal distribution of such period. There are as yet not enough data on survival of patients treated with chemotherapy, but its widespread use should soon yield the necessary data for evaluation of its effectiveness.

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USSR

UDC 621.375.4.001

PERFIL'YEV, YU. S., BUL'BIK, YA. I.

"Analysis of a Balanced Amplifier made of Transistors of various Types of Conductivity with Application of Anomalous Elements"

Sb. nauchn. statey Elektrotekhn. fak. Krasnoyarsk. politekhn. in-t (Collected Scientific Articles of the Electrical Engineering Department of Krasnoyarsk Polytechnical Institute), Krasnoyarsk, 1970, pp 132-138 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D101)

Translation: A study is made of the circuitry of a two-cascade balanced amplifier made of transistors with two autonomous bias sources (one bias source in the output circuit and a power supply with a zero point). A new analysis technique is used (using the so-called nullors), which, in the opinion of the authors, is quite simple. The investigated amplifier can be used to amplify signals from thermocouples and other low-resistance voltage transducer under operating conditions on an emitter follower with a high input impedance. The bibliography has 4 entries.

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USSR

UDC 613.155:656.132:621.43.013.1

BUL'BYAN, M. A., and SMULEVICH, V. B., Institute of Experimental and Clinical Oncology, Academy of Medical Sciences USSR, Moscow

"Contamination of the Air in the Drivers' Cabs of Buses and Trolleys"

Moscow, Gigiyena i Sanitariya, No 1, 1973, pp 87-89

Abstract: In work in which the Central Scientific Research Automobile and Automobile Motor Institute, Ministry of the Automobile Industry USSR, and the Laboratory of the Prophylaxis of Cancerogenic Effects, Institute of Experimental and Clinical Oncology, cooperated, a study was carried out of the contamination of the air in drivers' cabs of buses ZIL-158 "v" and LIAZ-677 and trolley buses ZIU-5 that are used in the municipal transportation system of Moscow. The mean concentrations of contaminants (in mg/m^3) in the air of the drivers' cabs were in the warm season CO 42.3, total hydrocarbons 177.2, N oxides 1.5, gasoline 166.8 in buses and CO 22.1, total hydrocarbons 128.0, N oxides 2.4, gasoline 89.9 in trolley buses; in the cold season CO 56.5, total hydrocarbons 216.0, N oxides 4.2, gasoline 114.4 in buses and CO 11.0, total hydrocarbons 64.3, N oxides 1.97, gasoline 52.5 in trolley buses. The mean concentrations of benzopyrene (in $gamma/100 m^3$) in the cabs of buses were 6.3-7.5 in the cold season and 1.8-3 in the warm season. The concentrations of benzopyrene in the

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BUL'BULYAN, M. A. and SMULEVICH, V. B., Gigiyena i Sanitariya, No 1, 1973, pp 87-89

cabs of trolley buses were lower. In the warm season the contamination of air in the cabs of buses was lower than in the cold season, because the windows of the cabs were open in warm weather. The reverse was true for contamination of the air in the cabs of trolley buses, because the contaminants were introduced from the outside and more outside air came into the cabs when the windows were open.

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USSR

UDC 669.75.472

BULDAKOV, A. A., ROZLOVSKIY, A. A., VRATSKAYA, G. F., DEMINA, Yu. V.

"Resistance of Refractory Materials in Antimony-Salt Solutions"

Elektrokhim. Rafinirovaniye Tyazh. Legkoplavk. Met. iz Rasplavl. Soley. [Electrochemical Refining of Heavy Low-Melting Metals from Fused Salts -- Collection of Works], Kiev, Nauk. Dumka Press, 1971, pp 169-172, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G424 by the author's).

Translation: The corrosion resistance of structural materials in type SU-2 Sb melt and an equimolar mixture of NaCl + KCl is studied. The following technical refractories were tested: pure oxides, ceramic construction materials, oxygen-free compounds, bitalls, and heat-resistant concrete. The resistance of the materials was determined from the change in weight of a specimen following repeated immersion in the melt and long holding. Pure materials of the oxides Al_2O_3 , MgO, and ZrO_2 are recommended. 2 Tables.

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1/3 038 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--CORROSION RESISTANCE OF REFRACTORY MATERIALS IN ANTIMONY SALT MELTS
-U-
AUTHOR--(04)--BULDAKOV, A.A., ROZLOVSKIY, A.A., IGNATOVA, T.S., NAZAROVA,
T.I.
COUNTRY OF INFO--USSR **B**
SOURCE--OGNEUPORY 1970, 35(1), 35-7
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MAGNESIUM OXIDE, ALUMINUM OXIDE, TIN, ALLOY, REFRACTORY
MATERIAL, ANTIMONY, SODIUM CHLORIDE, POTASSIUM CHLORIDE, ELECTROLYTE,
LEAD, IRON, COPPER, CORROSION RESISTANCE, METAL POWDER/(U)SUZ ANTIMONY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/1955

STEP NO--UR/0131/70/035/001/0035/0037

CIRC ACCESSION NO--AP0114373

UNCLASSIFIED

2/3 038

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114373

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CORROSION RESISTANCE OF A LARGE NO. OF REFRACTORY MATERIALS SIMULTANEOUSLY IN CONTACT FOR 250 HR WITH SB SALTS AND NACL PLUS KCL SOLN. AT 800DEGREES IN AN EXPTL. INDUSTRIAL ELECTROLYZER WAS DETD. THE ELECTROLYTE CONTAINED EQUIMOLAR MIXT. OF TECH. GRADE NACL AND KCL. INTERACTION OF THE MATERIALS USED OCCURRED NOT ONLY WITH CHLORIDES BUT ALSO WITH SOLNS. OF NA AND K IN THESE CHLORIDES. THE ELECTROLYTE WAS SATD. WITH IMPURITIES CONSISTING OF Pb 0.25-0.60, FE 0.04-0.28, CU 0.008-0.07, NI 0.001, AS 0.01-0.054, AND S 0.14-0.595PERCENT. RECTANGULAR PRISMS OR TABLOID SHAPED SPECIMENS OF MGO, AL SUB2 O SUB3, AIN, SI SUB3 N SUB4, BN, 80BN PLUS 20SI SUB3 N SUB4, 60BN PLUS 40SI SUB3 N SUB4, 78SI SUB3 N SUB4 PLUS SIC, 20MGO PLUS 80SI SUB3 N SUB4, 40MGO PLUS 60SI SUB3 N SUB4, KMG SUB3 SI SUB3 ALO SUB10 F SUB2 AND OF CEMENT OF MG PHOSPHATE WITH CARBORUNDUM FILLER WERE TESTED. THESE WERE PLACED VERTICALLY IN A GRAPHITE CRUCIBLE OF 30 MM HEIGHT AND 20 MM DIAM. WHICH WAS HALF FILLED WITH POWDER OF SB (SU-2 GRADE). AN OPENING OF 4 MM DIAM. WAS MADE IN THE UPPER PART OF THE CRUCIBLE FOR CIRCULATION OF THE ELCTROLYTE. THESE SPECIMENS WERE THEN SUBJECTED TO THE ACTION OF SB MELT AND THE ELECTROLYTE AT 800DEGREES CRUCIBLE WAS HEATED IN A SILIT OVERN. SPECIMENS WERE THEN WEIGHED AFTER BOILING IN DISTD. WATER FOR 14 HR AND DRIED AT 150DEGREES FOR 10 HR. THE OUTER APPEARANCE AND THE CONDITION OF SPECIMENS AFTER TESTING HAVE BEEN GIVEN.

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PROCESSING DATE--09OCT70

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ABSTRACT/EXTRACT--MGU, AL SUB2 O SUB3, AIN, 20MGU PLUS 80SI SUB3 N SUB4,
40MGU.80SI SUB3 N SUB4, AND KMG SUB3 SI SUB3 ALO SUB10 F SUB2 ARE
RECOMMENDED AS QUALITY MATERIALS FOR REFINING OF SB FROM ALLOYS BECAUSE
OF THEIR GOOD CORROSION RESISTANCE. FACILITY: VOST. INST.
OGNEUPOR., SVERDLUVSK, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EXPERIMENTAL STUDY OF RADIONUCLIDE TRANSFER THROUGH THE PLACENTA AND THEIR BIOLOGICAL ACTION ON THE FETUS -U-

AUTHOR--(05)-MOSKALEV, YU.I., BULDAKOV, L.A., LYANGINSKAYA, A.M., OVCHARENKO, E.P., YEGOROVA, T.M.

COUNTRY OF INFO--USSR

B

SOURCE--(CONF 690501, PP 153-60)

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--PLACENTAL TRANSPORT, RADIOACTIVE ISOTOPE, TRANSURANIUM ELEMENT, FETUS, STRONTIUM ISOTOPE, AMERICIUM ISOTOPE, IODINE ISOTOPE, RADIATION BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/2183

STEP NO--UR/0000/70/000/000/0153/0160

CIRC ACCESSION NO--AF0127547

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AT0127547
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LEVELS OF RADIONUCLIDE TRANSFERRED TO THE FETUS AND RADIONUCLIDE RETENTION IN THE PLACENTA DEPEND ON THE CHEMICAL CHARACTERISTICS OF THE NUCLIDE AND THE PERIOD OF PREGNANCY. THE PLACENTAL TRANSFER OF ALL NUCLIDES INCREASED BETWEEN MIDTERM (11 TO 15 DAYS OF GESTATION) AND THE END OF PREGNANCY. THE RATIOS OF THE NUCLIDE TRANSFERRED TOWARD TERM TO THAT TRANSFERRED EARLIER WERE PRIME239 PU, 1.7; PRIME241 AM, 2.8 TO 4.5; PRIME137 CS, HTO, AND PRIME237 NP, 5; PRIME90 SR, 20; AND PRIME131 I, 1700 TO 6000. THE CONTENT OF TRANSURANIC ELEMENTS IN THE PLACENTA AT ALL PERIODS OF PREGNANCY WAS 3 TO 15 TIMES HIGHER THAN IN THE FETUSES. RADIOINDUCED CHANGES IN THE EMBRYO DEPEND ON THE AMOUNT OF ACTIVITY INJECTED, THE DISTRIBUTION PATTERN, AND THE PHYSICAL PROPERTIES OF THE RADIONUCLIDE. THE MOST CHARACTERISTIC CHANGES ASSOCIATED WITH THE VARIOUS RADIONUCLIDES ARE: PRIME90 SR, A DECREASE IN THE TRANSFER OF NUCLIDE FROM PLACENTA TO FETUS; PRIME241 AM, EARLIER INDUCTION OF RADIATION DISORDERS IN THE PLACENTA THAN IN THE FETUSES; PRIME131 I, OCCURRENCE OF RADIOINDUCED EMBRYOPATHY DEPENDS ON THE PRODUCTION OF DISORDERS IN THE MOTHER'S THYROID; HTO, GENERALIZED VASCULAR CHANGES IN THE MOTHERS AND FETUSES. FACILITY: MINISTRY OF PUBLIC HEALTH, MOSCOW.

UNCLASSIFIED

USSR

UDC 621.397.132:621.316.722

BULDAKOV, V. A., SLAVIN, V. V.

"A Device for Regulating the Levels of Video Signals in a Color Television Transmitter"

Moscow, Otkrytiya, izobreneniya, promyshlennyye obraztsy, tovarnyye znaki, No 7, Mar 71, Author's Certificate No 295207, filed 2 Apr 69, published 4 Feb 71, p 170

Translation: This Author's Certificate introduces a device for regulating the levels of video signals in a color television transmitter. The device contains three kinematically interconnected potentiometers and a drive mechanism. As a distinguishing feature of the patent, separate regulation of the level of the signals and the adjustment range is provided by fastening gears to the potentiometer shafts which mesh with racks connected by links to the rim of a disc which is set on journals of the drive mechanism. Coaxial with the disc is a screw couple, the nut being eccentrically connected by a link to the disc.

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PRELIM.

Current development of aviation places before meteorologists progressively more new problems, one of which pertains at the present time to meteorological flight safety of supersonic transports. Presumably it will not be long before supersonic transports will be making regularly scheduled flights in the stratosphere at altitudes of about 20 km and for distances of several thousand kilometers. In this connection, the weather service will be required to furnish complete information and forecasts pertaining to the distribution of temperature fields, winds, turbulence zones and other elements and phenomena of the weather over a considerable part of the northern hemisphere in the layer of the atmosphere up to altitudes of 20 to 25 km.

In order to satisfy the imposed requirements it will be essential to have the features of atmospheric circulation in the stratosphere during the different seasons of the year, the relationship between these processes and processes in the troposphere, the influence of individual meteorological elements and phenomena on supersonic transport flight conditions during takeoff and descent, cruise, descent and landing.

During the last decade, according to observations during the International Geophysical Year and Year of International Cooperation, both in the same area in other countries, comprehensive investigations have been made of the features of atmospheric circulation in the stratosphere and its interaction with circulation in the troposphere. The results of the investigation for the possible influence of meteorological conditions and solar flares, conducted over the period 1965-1968, have been analyzed both at international and at inter-union scientific conferences and symposia.

The basic results of investigations that have been conducted and of discussions are presented in this book, which therefore should be a complete text for aviation meteorologists, pilots and other aeronautical specialists.

Chapters 1 and 2 are written by L. G. Fel'dman, Chapters 3, 4 and 5 by N. V. Petrenko and Chapter 6 by G. S. Malinitskiy.

The authors express their sincere gratitude to S. V. Solomin, who devoted himself to review the preliminary manuscript of this monograph and to editing the final manuscript, and also for his valuable advice, which facilitated improvement of the content of this text.

-USSR

UDC 621.373.58

BORODOVSKIY, P. A., BULDYGIN, A. F., UTKIN, K. K.

"Series Operation of Gunn Diodes in a Coaxial Resonator"

Kiev, Izvestiya vuzov SSSR, Radioelektronika, Vol XV, No 8, 1972, pp 954-958

Abstract: An experimental study was made of the operation of two decimeter-band Gunn diodes manufactured from a single n-GaAs crystal included in series in a coaxial resonator with spacing between them much less than the wavelength of the generated oscillations. On series operation of the Gunn diodes, the output power is equal to the sum of the powers generated by these diodes on inclusion of them one at a time. With defined tuning of the coaxial resonator, nonsinusoidal microwave oscillations were observed the period of which was approximately equal to the drift time of the domains arising alternately in the series-connected Gunn diodes. Oscillograms of these oscillations are presented, and the amplitudes of the microwave oscillations are shown as functions of the resonator length and bias voltage. The nonsinusoidal nature of the oscillations at the microwave resonator output arises from the significant content of the harmonic corresponding to the drift frequency of the domain. On tuning the resonator, the amplitude of this harmonic changes which leads to variation of the shape of the oscillations observed at the resonator output. Excitation of the subharmonic oscillations in the resonator is facilitated as
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USSR

BORODOVSKIY, P. A., et al., Izvestiya vuzov SSSR, Radioelektronika, Vol XV, No 8, 1972, pp 954-958

a result of the external negative resistance of the diode with the traveling domain and also the negative resistance at a frequency half the drift frequency of the domain as a result of the parametric effect. With appropriate selection of the microwave resonator and the degree of its coupling to the load it is possible to achieve effective series operation of Gunn diodes with noticeably different parameters at moderate bias voltages.

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- 99 -

USSR

UDC 621.382.2

BORODOVSKIY, P. A., BULDYGIN, A. F., ZIMENKOV, V. A., Institute of Physics of Semiconductors, Siberian Department of the Academy of Sciences of the USSR, Novosibirsk

"Effect of a Magnetic Field on the Domain of a Strong Field in a Gunn Diode"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 9, Sep 71, pp 1706-1709

Abstract: Experiments are done which show that a transverse external magnetic field has an appreciable effect on the frequency and output power of a Gunn oscillator. It is found that the emission frequency in a transverse field is increased by a reduction in domain capacitance due to domain broadening. An increase in emission frequency by more than 35 percent was observed for one of the diodes when the transverse magnetic field strength was varied from 0 to 18,000 oersteds. The threshold voltage and frequency remain practically unchanged in a longitudinal magnetic field. With an increase in field strength, the emission power at the oscillator output decreases in both transverse and longitudinal fields.

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USSR

UDC: 621.315.592

BORODOVSKIY, P. A. and BULDYGIN, A. F.

"Microwave Amplification by Periodic Excitation and Suppression of the Gunn Diode Traveling Domain by an External Signal"

Leningrad, Fizika i tekhnika poluprovodnikov, Vol. 5, No. 2, 1971, pp 247-250

Abstract: This paper gives the experimental results of an investigation into a Gunn diode parametric amplifier with an external microwave pumping signal whose frequency is twice that of the domain travel with the diode in oscillation. In the experiments, the diodes were of the decimeter wavelength range, operated in the pulse mode. The measurements made are given for a single diode with specified parameters. With the bias voltage 2.5 times the threshold value, the diode oscillated at a frequency of 1.2 GHz with an output pulse power of 1.8 watts. When a signal with a frequency close to the domain travel frequency was introduced into a Gunn diode resonator at a bias voltage less than the threshold value, a synchronous amplification effect was found at the

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USSR

BORODOVSKIY, P. A. and BULDYGIN, A. F., Fizika i Tekhnika poluprovodnikov,
Vol 5, No 2, 1971, pp 247-250

output, with the amplification factor a function of the bias voltage and
the power of the input uhf signal. The authors note that the amplifier
works best with external rather than self pumping.

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- 3 -

USSR

UDC 519.2

BULDYGIN, V. V.

"Convergence of Series of Independent Random Variables with Values in a Banach Space"

Teoriya veroyatnostey i mat. stat. Mezhved. nauch. sb. (Probability Theory and Mathematical Statistics. Interdepartmental Scientific Collection), 1972, vyp. 6, pp 32-40 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V11)

Translation: A study was made of series of independent random variables with values in a Banach space. The necessary and sufficient conditions are presented for their convergence with the probability of one.

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- 3 -

USSR

BULEKOV, V. P. (Moscow Aviation Institute im. Sergo Ordzhonikidze)

"Transfer Function of Pulse Systems with Polynomial Parameters as a Solution to a Differential Equation"

Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy: Priborostroyeniya; January, 1972; pp 45-9

Abstract: The author presents a differential equation which satisfies the transfer function of linear discrete systems described by a difference equation with coefficients expressed as time polynomials. The order of the differential equation does not depend on the order of the difference equation but is determined solely by the highest degree of the time polynomials. It is shown that the transfer function is the stationary part of the solution to the differential equation. The article includes 16 equations.

There are six bibliographic references.

The article is recommended by the institute.

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USSR

UDC 629.78.062.2

ALEKSEYEV, K. B., BULEKOVA, N. M., and VASIL'YEV, V. N.

"System of Extensive Control of a Rotating Solid With a Spherical Flywheel"

Tr. Mosk. aviats. In-ta (Works of the Moscow Aviation Institute), No 240, 1972, pp 127-133 (from Referativnyy Zhurnal--Raketostroyeniye, No 5, May 73, Abstract No 5.41.235 by the authors)

Abstract: In the varied technical resources providing creation in internal moments for control of the rotational movements of a solid, the spherical flywheel possesses vast potential possibilities. However, its use in control systems with angular movements of a solid have been associated with considerable difficulties. The power and weight gain factors which give the flywheel, in the essential method of control, angular motions of the solid, do not compensate for the difficulties of its structural development. Development of a method of extensive control makes it possible to evaluate the advantages of the flywheel, but only from the positions of the theory and practice of automatic systems using computers. And it was not excluded that for such a method of control the realization of the mentioned possibilities of the flywheel receives sufficient validation. The present investigation is devoted to theoretical problems of extensive control by means of a flywheel and should yield premises about the technical content of the problem. 3 figures, 4 tables.

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- 4 -

USSR

UDC 629.78.062.2

ALEKSEYEV, K. B., BULEKOVA, N. M. and CHESNOKOV, A. G.

"Investigation of Routine Extensive Control of a Turning Maneuver"

Inform. Materialy. Nauch. Sovet po Kompleks. Probl. (Information Materials of the Scientific Council on Complex Problems). "Kibernetika." AN SSSR, No 6 (53), 1972, pp 59-68 (from Referativnyy Zhurnal, Raketostroyeniye, No 5, 1972, Abstract No 5.41.128 by T. A. Ye.)

Translation: An efficient method of controlling a turning maneuver is extensive control, in which selection of the controlling moments that are applied to the space vehicle along the body axes is performed on the basis of the condition of reotation of the space vehicle along the Euler axis. Consideration is given to the possibility of realizing this condition with the use of flywheels as the actuating devices of the engine orientation system. Included in the investigation is a derivation of the differential equation of motion of the space vehicle, and its solution. 2 references.

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- 5 -

USSR

UDC 632.95

GILLER, S. A., BULENKOVA, I. F., KONSTANTE, G. G., KALMIN', M. M., and SHIMANSKAYA, H. V.

"Gas Chromatographic Separation of Organochlorine Insecticides on Various Columns"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya im. produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on Investigation of Residues of Pesticides, and Prevention of Pesticide Contamination of Foodstuffs, Fodder, and the External Environment), Tallinn, 1971, pp 51-53 (from RZh-Khimiya, No 11, Jun 72, Abstract No 111403)

Translation: Excellent separation of p,p'-DDT, o,p'-DDT, p,p'-DDE and γ -hexachlorocyclohexane is achieved on SKTFT-50 fluorinated silicone (Leningrad) applied (5%) on silanized chromosorb W. The relative times of retention of these pesticides are given as well as those of lindane and eldrin on various fixed phases.

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USSR

UDC 620.193.43

BULER, P. I., TOPORISHCHEV, G. A., YESIN, O. A., KOPYSOV, V. A.,
and LEPINSKIKH, V. B., Ural Polytechnic Institute imeni
S. M. Kirov

"Anodic Behavior of Nickel in Melted Sodium Tetraborate"

Moscow, Zashchita Metallov, Vol 19, No 2, Mar-Apr 73, pp 196-198

Abstract: The anodic oxidation of nickel in melted sodium tetraborate was investigated in air at 800-900 °. The anodic polarization of Ni (curves $\Delta\eta - i$) was determined under galvanostatic and potentiostatic conditions. The current efficiency of Ni was defined from the anodic mass decrease and the current efficiency of O from the volume of separated gas. The anodic dissolution of Ni in bivalent form ($\text{Ni}(\text{metal}) = \text{Ni}^{2+} + 2e$) with 80-85% current efficiency is characterized principally by the initial part of the polarization curves. Followed by concentrating polarization, the anodic dissolution of Ni leads to the development of a passivating film. The latter, gaining a hole conductivity, becomes the outer surface of the electrode on which the discharge of oxygen ions is realized. Together with this process, a partial oxidation proceeds of bivalent to trivalent Ni on the oxide-electrolyte boundary. Three figures, eight bibliographic references. 1/1

1/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--GRANULATION OFF RUBBER MIXTURES IN A GRANULATING MACHINE OF THE SHMGR 380-450 TYPE -U-

AUTHOR--(02)--MAMON, L.I., BULEYKO, M.N.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(3), 29-32

DATE PUBLISHED--70

B

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

TOPIC TAGS--NATURAL RUBBER, SYNTHETIC RUBBER, VULCANIZATE, THIXOTROPTE, GRANULE FORMATION, RUBBER WORKING MACHINERY/(U)SKD SYNTHETIC RUBBER, (U)SKMS30ARKM15 SYNTHETIC RUBBER, (U)SHMGR GRANULATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/0970

STEP NO--UR/0138/70/029/003/0029/0032

CIRC ACCESSION NO--AP0124629

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSIGN NO--AP0124629

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEVERAL RUBBER BLENDS, E.G. NATURAL RUBBER (I) PLUS 30PERCENT SKD, I PLUS 80PERCENT SKMS-30ARKM-15, AND 100PERCENT I WERE GRANULATED IN A SHMGR 380-450 GRANULATOR IN ORDER TO DET. THE PRESSURE DISTRIBUTION WITHIN THE GRANULAORT. THE PRESSURE CHANGES IN THE GRANULATOR VARIED EXPONENTIALLY. THE NONUNIFORM PRESSURE DISTRIBUTION IN THE GRANULATOR DISK WAS DUE TO THIXOTROPIC FLOW AND PULSATION AND WAS PROPORTIONAL TO THE I CONTENT OF THE BLEND. AN EQUATION WAS DERIVED FOR CALCN. OF STRESS EXERTED ON THE GRANULATOR HEAD. FACILITY: DNEPROPETROVSK. KHIM.-TEKHNOL. INST., DNEPROPETROVSK, USSR.

UNCLASSIFIED

1/3 036

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--EFFECT OF HEAT TREATMENT ON THE MECHANICAL, ELECTROCHEMICAL, AND
CORROSION CHARACTERISTICS OF ZINC AND SOME OF ITS ALLOYS -U-
AUTHOR--(02)-BULGACHEVA, N.M., LAYNER, D.I.

COUNTRY OF INFO--USSR

B

SOURCE--TR., GOS. NAUCH.--ISSLED. PROEKT. INST. SPLAVOV OBRAB. TSVET. METAL
1970, NO. 31, 3-8
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--METAL HEAT TREATMENT, MECHANICAL PROPERTY, CORROSION RATE,
ZINC, INDIUM, LEAD, IRON ALLOY, ZINC ALLOY, CERIUM, TENSILE STRENGTH,
CORROSION RESISTANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3006/0577

STEP NO--UR/0000/70/000/031/0003/0008

CIRC ACCESSION NO--AT0134343

UNCLASSIFIED

2/3 036

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0134343

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOILS OF THE TSO TYPE ZN AND ITS ALLOYS WITH IN, PB, CE, AND FE (0.1, 0.3, 0.07, AND 0.1PERCENT, RESP.) WERE ANNEALED IN AIR AT 100, 200, AND 300DEGREES FOR 3.5, 3.5, AND 12 HR, RESP. THE SPECIMENS FOR ELECTROCHEM. AND CORROSION TESTS WERE DECREASED FOR 5 MIN AT 80-90DEGREES IN A SOLN. CONTG. ANHYD. NA SUB3 PO SUB4 45 PLUS WATER GLASS 5 G-L. A PART OF EACH SPECIMEN WAS THEN ANODICALLY POLARIZED IN 10N KOH SOLN. AT 700 A-M PRIME2 AND THE CORROSION RESISTANCE OF THE OTHER PART WAS ESTD. BY THE DETN. OF THE VOL. OF H EVOLVED DURING 3 DAYS FROM THE 3 CM PRIME2 SURFACES OF SPECIMEN IMMersed IN THE KOH 8.5 PLUS ZNO 0.22N SOLN. THE METALLOGRAPHIC SPECIMENS WERE ELECTROLYTICALLY POLISHED IN ETOH 65 PLUS H SUB3 PO SUB4 35PERCENT SOLN. FURTHERMORE, THE TENSILE STRENGTH SIGMA SUBV, AND RELATIVE ELONGATION DELTA OF THE FOILS WAS DETD. THE RESULTS SHOWED THAT THE HEAT TREATMENT AT 100-200DEGREES WORSENS ALL THE CHARACTERISTICS INVESTIGATED. E.G., SIGMA SUBV OF ZN-IN FOIL DECREASED FROM SIMILAR TO 14 TO SIMILAR TO 9 KG-MM PRIME2 FOR THE UNTREATED AND TREATED AT 200DEGREES FOIL, AND THE RESP. DELTA VALUES WERE SIMILAR TO 10 AND SIMILAR TO 6PERCENT. ANNEALING ACCELERATES PASSIVATION OF ELECTRODES THAT SHOW ABNORMAL BEHAVIOR ON TREATMENT AT GREATER THAN 200DEGREES. GENERALLY, THE CORROSION RESISTANCE OF FOILS TREATED AT 100DEGREES IS WORSE THAN THAT OF UNTREATED ONES BUT SOME FOILS SHOW BETTER RESISTANCE AFTER TREATMENT AT 200DEGREES. THE CHANGES OF PROPERTIES ARE ATTRIBUTED TO A UNIFORM GROWTH AND DISTRIBUTION OF ZNO SURFACE LAYERS.

UNCLASSIFIED

3/3 036

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0134343

ABSTRACT/EXTRACT--THE MEASUREMENTS OF ITS THICKNESS, CARRIED OUT BY CATHODIC REDN. OF SPECIMENS IN THE 0.1M K SUB2 SO SUB4 SOLN. BY USE OF A PB ANODE, AT 0.5-4 MA-CM PRIME2, GAVE THE VALUES 15-20 ANSTROM FOR ALL UNTREATED FOILS, AND 25-30, 35-6, AND 300-400 ANGSTROM FOR THOSE TREATED AT 100, 200, AND 300DEGREES, RESP.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--EFFECT OF SOME ADDITIVES ON THE CORROSION RESISTANCE OF ZINC IN
ALKALINE SOLUTIONS -U-
AUTHOR--BULGACHEVA, N.M. *B*
COUNTRY OF INFO--USSR
SOURCE--TR., GDS. NAUCH.-ISSLED. PROEKT. INST. SPLAVOV OBRAB. TSVET. METAL
1970, NO. 31, 19-22
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--ZINC ALLOY, TITANIUM ALLOY, CORROSION RESISTANCE, TIN ALLOY,
CADMIUM ALLOY, INDIUM ALLOY, LEAD ALLOY, CERIUM ALLOY, MANGANESE ALLOY,
INDUCTION ALLOY, INDUCTION FURNACE, METAL MELTING, METAL ROLLING,
MECHANICAL PROPERTY, CORROSION RESISTANT ALLOY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/0592 STEP NO--UR/0000/70/000/031/0019/0022
CIRC ACCESSION NO--AT0134357
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0134357

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ALLOYS OF ZN WITH TI, SN, CD, IN, PB, CE, AND MN WERE MELTED IN AN INDUCTION FURNACE AT 450-90DEGREES. THE CONC. OF ADDITIVES IN THE CHARGES WAS IN THE 0.05-0.3PERCENT RANGE. CHEM. COMPNS. OF ALLOYS ARE GIVEN. THE 12-24 MM THICK INGOTS WERE HOT ROLLED TO 0.7-0.8 MM AND THEN COLD ROLLED TO 0.07 FOILS, EXCEPT FOR THE ZN-TI ALLOY WHICH WAS ROLLED TO 0.12 MM. THE MECH. PROPERTIES WERE DETD. TI, PB, CD, MN, IN, AND CE FORM SMALL INCLUSIONS IN ZN MATRIX AND REFINE ITS STRUCTURE, WHEREAS PB DOES NOT AFFECT THE GRAIN SIZE. A MEASURE OF CORRODIBILITY WAS THE VOL. OF H EVOLVED DURING 3 DAYS FROM THE 1 DM PRIME2 FOILS IMMERSED IN THE KOH 8.5 PLUS ZNO 0.22 N SOLN. AT 20 PLUS OR MINUS 2DEGREES. THE RESULTS OBTAINED FOR ZN AND ITS ALLOYS WITH TI 1, SN 0.12, CD 0.1, IN 0.1, PB 0.3, CE 0.07, AND MN 0.07PERCENT WERE, RESP., 1.6-16.6 (ZN), 1.0-3.0 (1PERCENT TI), 0.3-1.6, 0.6-1.2, 0.3-1.1, 0.3-1.8, 1.5-4.0, AND 0.8-2.0 CM PRIME3 H. BY CONSIDERING THE MECH. PROPERTIES AND CORROSION RESISTANCE THE ZN-PB 0.3PERCENT ALLOY FOILS ARE RECOMMENDED FOR COM. USE.

UNCLASSIFIED

Acc. Nr:

AP0053752

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

6/70 UR0032

BULGADAYEV A.V.

115636r Obtaining x-ray diffraction patterns of liquids. Zorkina, S. A.; Bulgadaev, A. V. (USSR). *Zavod. Lab.* 1970, 36(1), 47-8 (Russ). A method for obtaining x-ray diffraction patterns of liqs. was developed in which the patterns are obtained from a free drop of the liq. examd. Thus, the superimposing of patterns of the hitherto used capillaries is avoided, and the diffracting surface of the liq. is increased. The scheme and description of the app. are stated. Successful expts. with castor oil and oleic acid using Cu and Fe radiation are stated. The exposition time was 50 min without filters and 1.5 hr with filters. The diffraction max. were $10^{\circ}9'$ for castor oil and $9^{\circ}39'$ for oleic acid using Cu radiation and $12^{\circ}10'$ for castor oil and $12^{\circ}48'$ for oleic acid using Fe radiation. The periods were 4.590 ± 0.001 and $4.36^{\circ} \pm 0.002 \text{ \AA}$ for castor oil and oleic acid, resp.

M. Kalfus J

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USSR

UDC 669.28.172

BULGAK, I. V., SAVITSKIY, Ye. M., BELOMYTTSEV, Yu. S., SARATOVSKIY, L. N.,
PAVLOVICH, T. M., and MIKHAYLOV, S. M.

"Study of Structure and Properties of Molybdenum Single Crystals Produced
Under Oilless Vacuum Conditions"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory
and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 67-70

Translation: Data are presented on the mechanical properties and structure
of monocrystalline molybdenum, produced under oilless vacuum conditions by
cathode ray zone refining. 1 Table; 4 Figures; 2 Bibliographic References.

1/1

- 48 -

USSR

UDC 621.391:519.27

BULGAKOV, A. A., PICHUGINA, L. V., SERIKOV, V. A., and SMIRNOV, G. A.

"Determining the Current Characteristics of Steady, Ergodic, Random Processes With Respect to Long Duration Realization Using the Razdan-2 Electronic Digital Computer"

Tr. Leningr. in-t aviats. priborostr. (Works of the Leningrad Institute of Aviation and Instrument Building), 1972, vyp. 74, pp 98-102 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 A17)

Translation: The authors study the use of the Razdan-2 electronic digital computer for calculating the current characteristics of steady, ergodic, random signals obtained from a receiver, noise generator or magnetic recording instrument. Further insignificant improvements in the computer make it possible to register signals in real time after their discretization and quantization directly on the magnetic tape of the storage element, thus bypassing the memory unit. This increases the length of the analyzed realization by approximately two orders of magnitude. Recording in a single 4- and 8-digit element raises the higher signal discretization frequency. It is shown that the indicated improvements make it possible to carry out a broad program of statistical studies on realizations, up to one minute in duration, at a discretization frequency of up to 10-15kc and quantization to 256 levels. The accuracy of characteristic determination is evaluated. Original article: one illustration and two bibliographic entries. Resume.

1/1

USSR

UDC 621.314.61

BULGAKOV, A.A.

"New Theory Of Controlled Rectifiers"

Novaya teoriya upravlyayemykh vypryamiteley (cf English above), Moscow, "Nauka,"
1970, 320 pp, ill. 1 r. 48 k. (from RZh--Elektronika i yeye primeneniye, No 12,
December 1970, Abstract No 12B493K)

Translation: A general theory is given for controlled rectifiers (CR) which are considered as elements of a dynamic automatic control system. An analysis of the regimes is presented as well as a computation of the parameters and characteristics of CR for steady-state and transient processes. The method is used of separation of the current and voltage at the output of the CR into a continuous effective component and noise. New presentations from the theory of electrical machines are presented. The effect is considered of the circuits and parameters of power transformers on the commutation process and the characteristics of the CR. The principles are shown of the use for planning of the problems considered. 176 ill. 4/4 ref. A.S.

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USSR

B

UDC 621.791.756.896:669.15-194

KASATKIN, B. S., MUSIYACHENKO, V. F., MIKHODUY, L. I., Electric Welding Institute
imeni Ye. O. Paton and EULGAKOV, A. S., Uralmashzavod imeni S. Ordzhonikidze

"Welding Low-Alloy, Highly Durable Steels 14Kh2GMR and 14KhMNDFR"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 70, pp 39-42

Abstract: The steels referred to in the title 14Kh2GMR and 14KhMNDFR were designed for various types of welded structures: bridges, high-pressure vessels, storage tanks, hydraulic equipment, transport lifting mechanisms, trucks, railroad cisterns, and the like. The purpose of the article is to recommend rational choices of welding materials, welding modes, and special technical operations to guarantee that a union of the two metals will have the same durability of the basic metals and that it will be sufficiently resistant to cold. The following welding features are discussed: electrodes, flux and wire, measures for preventing crack formation and welding modes. Illustrations include a drawing showing tests for determining the tendency of welding seams to crack, a schematic of a pneumatic tensometer for determining transverse specimen deformations, and a diagram of transverse deformations in 14Kh2GMR steel during and after welding. A table of recommended preliminary heating temperatures for the two types of steel mentioned in the title is included.

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USSR

UDC 621.436:629.113

PONOMAREV, O. P., and BULGAKOV, D. A., Leningrad Carburetor Works

"On the Possibilities of Increasing the Technical-Economic Characteristics of Two-Stroke Diesels"

Moscow, *Avtomobil'naya Promyshlennost'*, No 4, Apr 73, pp 10-12

Abstract: A pneumatic corrector has been developed for the YAAZM204A diesel engine force pump, series 80, which lowers the specific fuel consumption by 20-25g/erg-horsepower hour, almost as low as with a series 60 force pump, by increasing air use efficiency. The amount of NO, CO and C in exhaust using the corrector is also similar to that found using a series 60. However torque and power are increased, approaching that of the uncorrected series 80 at high rpm. The use of a sprayer force pump with 10 nozzles in the YAAZM204V diesel engine was also investigated. Velocity conditions were lowered and 170 horsepower could be obtained without increasing the upper limit of hourly fuel consumption, or thermal stress. Application of these improvements can bring the technical-economic characteristics of the two-stroke YAZ diesels up to those of the four stroke YAZ diesels.

1/1

- 121 -

USSR

UDC: 542.973.2

B
BULGAKOV, I.V., ANTIPINA, T.V., Department of Physical Chemistry, Moscow State University imeni M.V. Lomonosov, Moscow, Ministry of Higher and Secondary Specialized Education RSFSR

"Investigation of the Adsorption of Benzene and Methanol Vapors on Aluminum Hydroxyfluorides"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/Feb 70, pp 27-31

Abstract: The authors studied the adsorption of benzene and methanol vapors on specimens of aluminum hydroxyfluoride with different fluorine concentrations. It was found that an increase in the concentration of fluorine in the specimens results in reduced capacity of the monolayer, adsorption potential and total pore volume, whereas the prevailing pore radius is practically independent of fluorine concentration. As the capacity of the monolayer decreases, so does the specific surface. It was found that a certain quantity of adsorbed methanol is held quite strongly by the specimens at high temperatures (300°C), irreversible adsorption increasing with an increase of fluorine concentration in the specimens. There was a considerable difference in the adsorption parameters determined from the isotherms of adsorption for benzene and methyl alcohol, probably because of the difference in the nature of interaction of benzene and methanol molecules with the surface of the specimens.

1/1

USSR

UDC 621.791.72:669.195.001.5

GRUZDEV, B. L., Candidate of Technical Sciences, KLADOV, YE. I., Engineer,
and BULGAKOV, I. YA., Engineer, Ufa Aviation Institute imeni Sergo Ordzhonikidze

"Some Features of Electron-Beam Welding of VT5-1 Alloy"

Moscow, Svarochnoye Proizvodstvo, No 2 (460), Feb 73, pp 19-21

Abstract: The advantages of electron-beam (EB) welding of VT5-1 alloy in vacuum, in comparison with manual argon-arc (AA) welding, are discussed. In EB welding, the part of initial and additional materials participating in the development of the joint decreases by 73 times and the content of hydrogen is 2.5 times lower than in AA welding. In a comparison of EB and AA thermal cycles, the volume of melting metal and the magnitude of the elastic-plastic deformation zone decreases considerably in EB welding. Mechanical test results demonstrate the much higher strength characteristics of EB welded joints. The application of EB welding for 10-11-mm-thick joints of VT5-1 titanium alloy is, from the standpoint of quality and economy, more expedient than AA welding. Four figures, four tables, five bibliographic references.

1/1

USSR

UDC: 621.373.431

BULGAKOV, K. V., FREYMAN, V. B.

"On Optimizing Supply Conditions for High-Power Pulse Installations"

V sb. Izv. Leningr. elektrotekhn. in-ta (News of Leningrad Electrical Engineering Institute--collection of works), 1970, vyp. 86, pp 49-53 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12G235)

Translation: The authors discuss various methods of feeding the load in the pulse mode from a limited-power oscillator: directly from the oscillator through a shaper, and through a converter and shaper (the converter keeps the current at the constant level required by the oscillator). It is shown that the second method is more economical since it permits reducing the power of the supply source. Bibliography of 3 titles. N. S.

1/1

- 127 -

USSR

UDC 546.824-31'42':539.23:537.226

BULGAKOV, N. A., DUDKEVICH, V. P., BONDARENKO, V. S., ZAKHARCHENKO, I. N.,
and FESENKO, YE. G., Rostov State University

"Structure and Certain Dielectric Properties of Strontium Titanate Thin
Films Produced by Cathode Sputtering"

Moscow, Neorganicheskiye Materialy, Vol 9, No 10, Oct 73, pp 1833-1834

Abstract: Strontium titanate (ST) films, 1-12 microns thick, were produced on titanium substrates by cathode sputtering. From this experimental work the optimum mode of ST film formation was selected: 900 v, 80 ma, residual air pressure of 0.6 mm Hg, distance between anode and cathode -- 12 c, distance between cathode and substrate -- 6 mm, and coating rate -- 0.2 micron/hour. It was determined that the dielectric strength of ST films in a constant filed amounts to about 500 kv/cm which is higher than for volume ceramic samples for which this value does not exceed 100 kv/cm. One figure, three bibliographic references.

1/1

- 44 -

1/2 024 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--INFRARED SPECTRA OF AMMONIA ADSORBED ON FLUORINATED ALUMINUM OXIDE
AND ALUMINUM HYDROXIDE FLUORIDE -U-
AUTHOR--(03)-BULGAKOV, O.V., UVAROV, A.V., AUTIPINA, T.V.
COUNTRY OF INFO--USSR **B**
SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 17-22
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ALUMINUM HYDROXIDE, IR SPECTRUM, GAS ADSORPTION, FLUORIDE,
AMMONIA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0290 STEP NO--UR/0076/70/044/001/0017/0022
CIRC ACCESSION NO--AP0113220
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0113220

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR SPECTRA OF NH SUB3 ADSORBED ON AL SUB2 O SUB3 (I), FLUORINATED AL SUB2 O SUB3 (II) (6.4 AT.PERCENT F), AND CATALYTICALLY ACTIVE AL HYDROXIDE FLUORIDE (III) (28.6 WT.PERCENT F) WERE STUDIED. SPECTRA OF I-III AFTER DESORPTION AT ROOM TEMP., 150, 250, 350, AND 550DEGREES ARE REPRODUCED. ABSORPTION BANDS OF COORDINATELY BONDED NH SUB3 WERE FOUND ON THE SURFACE OF ALL SAMPLES, AND BANDS OF NH SUB4 POSITIVE WERE PRESENT IN THE SPECTRA OF II AND III. I SAMPLES WERE FLUORINATED BY A PUBLISHED METHOD (CA 69, 30509 Q). THE IR STUDY SHOWED THE PRESENCE OF APROTIC ACIDIC CENTERS ON THE SURFACE OF I AND BOTH TYPES ON THE SURFACES II AND III. ADSORBED NH SUB3 BANDS OCCURRED AT 3100, 1580, 1550, 1497, AND 1455 CM NEGATIVE PRIME1, INDICATING THE INSTABILITY OF ADSORBED NH SUB3 MOLLS. AND A POSSIBILITY OF THEIR REARRANGEMENT INTO DIFFERENT SURFACE FORMS. THE BANDS AT 1456 AND 1497 CM NEGATIVE PRIME1 WERE ATTRIBUTED (J. B. PERI, 1965) TO DEFORMATION VIBRATIONS OF NH SUB2 NEGATIVE, BUT THE PRESENT STUDY REVEALED NO ADDNL. BANDS IN THE REGION OF THE OH VALENCE VIBRATIONS TO SUPPORT THE REACTION NH SUB3 PLUS O PRIME2 NEGATIVE YIELDS NH SUB2 NEGATIVE PLUS OH NEGATIVE. IF, INDEED THESE BANDS ARE CAUSED BY DEFORMATION VIBRATIONS OF NH SUB2 NEGATIVE, THE MECHANISM FOR THE FORMATION OF NH SUB2 NEGATIVE IS DIFFERENT FROM THAT EXPECTED. THE APPEARANCE OF THE 3100-CM NEGATIVE PRIME1 BAND IS ATTRIBUTED TO THE INTERACTION OF NH SUB3 WITH THE SURFACE IONS OF AL PRIME3 POSITIVE, GIVING RISE TO NH SUB3 POSITIVE, WITH DEFORMATION VIBRATIONS AT 1580 CM NEGATIVE PRIME1. FACILITY: UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ADSORPTION OF BENZENE AND METHANOL VAPORS ON ALUMINUM
HYDROXYFLUORIDES -U-
AUTHOR--(02)-BULGAKOV, D.V., ANTIPINA, T.V.
COUNTRY OF INFO--USSR **B**
SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11(1), 27-31
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--GAS ADSORPTION, BENZENE, METHANOL, ISOTHERM, ALUMINUM
COMPOUND, FLUORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0598 STEP NO--UR/0189/70/011/001/0027/0031
CIRC ACCESSION NO--AP0119516
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119516

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADSORPTION WAS STUDIED AT 20 DEGREES FOR SAMPLES CONTG. DIFFERENT F CONCNS. BY USING A MACBAIN GAKRA BALANCE APP. THE RESULTING ISOTHERMS WERE TREATED BY USING THE BET EQUATION, AND FOR C SUB6 H SUB6 THERE WAS A DIFFERENCE IN THE STRUCTURAL CHARACTERISTICS AS A FUNCTION OF THE F CONCEN. AN INCREASE IN F RESULTS IN A DECREASE IN THE CAPACITY OF THE MONOLAYER, IN THE ADSORPTION POTENTIAL, AND IN THE TOTAL PORE VOL., WHEREAS THE VALUE OF THE PREDOMINANT PORE SIZE IS ALMOST INDEPENDENT OF THE F CONCEN. FOR MEQH THE PREDOMINANT PORE RADIUS IS SIMILAR TO THE VALUES FOUND FOR C SUB6 H SUB6. HOWEVER, AS THE F CONCEN. IS INCREASED THE TOTAL PORE VOL. INCREASES AND THE VALUE OF THE SP. SURFACE, DETD. BY THE THERMODYNAMIC METHOD (A. KISELEV, USP. KHIM. 1945, 14, 367), IS NOT RELATED AT ALL TO THE F CONCEN. THE DIFFERENCE IN THE ADSORPTION PARAMETERS, DETD. FROM THE C SUB6 H SUB6 AND MEQH ISOTHERMS, IS DUE TO THE DIFFERENCE IN THE NATURE OF THE INTERACTION OF THESE MOLS. WITH THE SURFACE.

UNCLASSIFIED

USSR

UDC 621.382.5.002

ANTROPOV, V.D., NIKISHIN, V.I., NOVIKOV, YU.I., BULGAKOV, S.S., SKLYAR, A.A.

"Microwave Transistor Prepared By The Method Of Ion Implantation"

V sb. Novoye v tekhn. poluprovodn. proiz-va (New Semiconductor Production Technology--Collection Of Works), Voronezh, Voronezh University, 1971, pp 152-157 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B423)

Translation: The production is described of a microwave n-p-n⁺ transistor with the use of a method of ion doping. The ion doping was conducted on ILU-3 equipment. The transistors were prepared on epitaxial Si films with a resistivity of 2 ohm.cm. B¹¹ and P³¹ were used as the doping admixture. Doping was done at room temperature. Transistors obtained by the combined ion-diffusion method and by the ion doping method only were compared. It is shown that with the aid of the latter method transistors can be obtained with a frequency of 1-2 GHz with developed power on the order of 1 watt. 12 ref. S.I.

1/1

2. Mathematical Models and the Application
of Operations Research

USSR

BULGAKOV, V. A., KUZNETSOV, I. N.

"Deterministic System with Repeated Servicing"

Izbr. Tr. Vses. Mezhvuz. Simpoz. po Prikl. Mat. i Kibernet, Gor'kiy, 1967
[Selected Works of All-Union Interuniversity Symposium on Applied Mathe-
matics and Cybernetics, Gor'kiy, 1967], Moscow, Nauka Press, 1973, pp 146-
150 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract
No 6V565, by the authors).

Translation: A deterministic, one-channel queueing system is studied, in
which each request is serviced a fixed number of times. Problems of deter-
mination of the optimal order of servicing of objects and moments of
beginning of servicing of each of them so that the total servicing time of
all requests is minimal are discussed.

1/1

Miscellaneous

USSR

UDC 577.4

BULGAKOV, V. A., and KUZNETSOV, I. N.

"Deterministic Multiple Service System"

V sb. Izbr. tr. Vses. mezhvuz. simpoz. po prikl. mat. i kibernet., Gor'kiy, 1967 (Selected Works of the All-Union Inter-VUZ /Higher Educational Institution/ Symposium on Applied Mathematics and Cybernetics, Gor'kiy, 1967 -- Collection of Works), Moscow, "Nauka," 1973, pp 146-150 (from RZh-Matematika, No 6, Jun 73, Abstract No 6V565 from authors' abstract)

Translation: The article considers a deterministic single-server queueing system in which each demand is served a fixed number of times. Questions discussed are those of finding the optimal service order for objects and the moments for starting service for each of them in order for the total service time for all demands to be minimal.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--MIXTURE FOR PREPARING ARC, ARRESTER CHAMBERS FOR ELECTRICAL
APPARATUS -U-
AUTHOR-(04)-NAMITOKOV, K.K., BULGAKOV, V.A., MITSKEVICH, G.F., BREZINSKIY,
V.G.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R.267,436
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATZSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--ARC DISCHARGE, DISCHARGE CHAMBER, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0885

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132975

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AA0132975
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CHARGE FOR PREPG. ARC, ARRESTER
CHAMBERS FOR ELEC. APP. CONSISTED OF ASBESTOS 20-30, CEMENT 60-75, AND
ALK., EARTH METAL HALIDES 2-10 WT. PERCENT.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STATISTICAL SCATTER OF HEAVY ION RANGES -U-
AUTHOR--(02)--KESSELMAN, V.S., BULGAKOV, YU.V.
COUNTRY OF INFO--USSR
SOURCE--AT. ENERG. 1970, 28(2), 173-4
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--IGN DISTRIBUTION, ELASTIC SCATTERING, PARTICLE TRAJECTORY,
GAUSSIAN DISTRIBUTION
CONTRCL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--2000/1155 STEP NO--UR/0089/70/028/002/0173/0174
CIRC ACCESSION NO--AP0124810
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124810

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MATH. ANAL. SHOWS THAT THE ASYMMETRY OF RANGE DISTRIBUTION CURVES (FOR HEAVY PARTICLES) IS DUE MAINLY TO SEP. FLUCTUATIONS IN ELASTIC COLLISIONS; WITH INCREASING PARTICLE ENERGY THE SHAPE OF THE CURVE APPROACHES THE GAUSSIAN DISTRIBUTION (BY ASSUMING THAT MULTIPLE SCATTERING IS NEGLECTED).

UNCLASSIFIED

USSR

UDC 537.311.3:546.26'28

BARINOV, YU.B., BULGAROV, YU.V., DEM'YANCHIK, D.V., IGLITSYN, M.I., IL'IN, M.A., KASAGANOVA, M.G., PAVLICV, N.M., SOLCMATIN, V.N.

"Effect Of Irradiation On The Physical Properties Of Hexagonal Silicon Carbide"

V sb. Radiats. fiz. nemet. kristallov (Radiation Physics Of Nonmetallic Crystals-Collection Of Works), Vol. 3, Part 2, Kiev, "Nauk.dumka," 1971, pp 105-110 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10356)

Translation: The effect was studied of irradiation by α particles and neutrons on the spectra of electronic paramagnetic resonance and the optical spectra of n-type α -SiC doped with nitrogen and p-type doped with boron. In the spectra of the electronic paramagnetic resonance of n-type specimens, the irradiation caused a decrease of the old and the appearance of a number of new lines. Irradiation of p-type crystals by α -particles lead to an increase of the optical absorption in the 2--25 micrometer region and irradiation by neutrons caused an increase of absorption at $\lambda < 0.55$ micrometer and a decrease of absorption in the $0.55 < \lambda < 6$ micrometer region. 3 ill. I.V.

1/1

Acc. Nr.

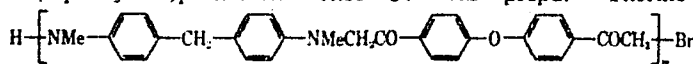
AP0048839

Abstracting Service.
CHEMICAL ABST.

Ref. Code

UR0459

90908r Poly(keto amines), a new type of [heterochain] polymer. Vinogradova, S. V.; Korshak, V. V.; Lebedeva, A. S.; Bulgakova, I. A. (Inst. Elementoorg. Soedin., Moscow, USSR). *Vysokomol. Soedin. Ser. A* 1970, 12(1), 165-70 (Russ). The condensation of H_2NRNH_2 (I) with $BrCH_2COR^1COCH_2Br$ (II) gave $H-[NHRNHCH_2COR^1COCH_2]_nBr$ (III), intended as intermediates in the synthesis of polyindoles. The reaction was 1st studied on model compds.: the condensation of $PhNH_2$ with I (R is $p-C_6H_4$, or $4,4'-C_6H_4OC_6H_4$) gave $p-(PhNHCH_2CO)_2C_6H_4$, m. 193-5°, and $(4-PhNHCH_2COC_6H_4)_2O$, m. 186-8°, resp. Similarly, $PhCOCH_2Br$ was condensed with I (R is $4,4'-C_6H_4C_6H_4$, $4,4'-C_6H_4OC_6H_4$, or $4,4'-C_6H_4CH_2C_6H_4$) or with $(4-MeNHC_6H_4)_2CH_2$ to give the corresponding model compds. The condensation of I with II gave the best yields (70-90%) in $PO(NMe_2)_3$ at 100°. The following III were obtained (R^1 is $4,4'-C_6H_4OC_6H_4$, R given): $4,4'-C_6H_4C_6H_4$, $4,4'-C_6H_4OC_6H_4$, $(4-C_6H_4)_2CH_2$, 3,3-bis(4-phenylene)phthalide. Also IV was prepd. Thermo-



(IV)

mech. anal. (change in elongation induced by a 100-g load on a 4-mm-diam. sample with temp.) and thermogravimetry showed that III are stable to $\sim 500^\circ$. CPJR

REEL/FRA
19800606

USSR

UDC 624.01.46

MEDVED'KO, S. V., Engineer, MOSKVIN, V. M. Doctor of Technical Sciences,
BULCAKOVA, M. G., GUZEYEV, Ye. A., Candidates of Technical Sciences

"Particularities of the Work of Prestressed Elements Under a Prolonged Load
in an Aggressive Medium"

Moscow, Beton i Zhelozobeton, No 1, January 1972, pp 18-30

Abstract: At the Central Corrosion Laboratory of the Central Scientific Research Institute of Concrete and Reinforced Concrete, research is conducted on the influence of the simultaneous action of prolonged loading and an aggressive medium, with high moisture, upon the limit states of prestressed reinforced-concrete elements. Results of research on the bending deformation of prestressed reinforced-concrete elements during their prolonged loading in an aggressive medium are presented. It is shown that under the influence of high moisture, created by the dispersion of a 3% solution of sodium chloride, the moment of crack formation decreases somewhat, the deflections of beams increase with prolonged loading, and residual deformations increase after complete unloading. It is noted that the indicated changes are connected with adsorption strength decrease, and with an increase in the deformability of concrete in the elongated zone of the elements. It is pointed out
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USSR.

MEDVED'KO, S. V., et al., Beton i Zhelezobeton, No 1, January 1972, pp 18-30

that account must be taken of the particularities of the work of structures in media with high moisture when designing these structures. 4 figures. 1 table. 5 references.

2/2

- 117 -

1/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SYNTHESIS OF TETRAHYDROQUINOLINES AND QUINOLINES -U-
AUTHOR--(02)-CHUMAKOV, YU.I., BULGAKOVA, N.B. B
COUNTRY OF INFO--USSR
SOURCE--UKR. KHIM. ZH. 1970, 36(5), 514-17
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC SYNTHESIS, QUINOLINE, HETEROCYCLIC OXYGEN COMPOUND,
CYCLOHEXENE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----F070/605019/C01 STEP NO--UR/0073/70/036/005/0514/0517
CIRC ACCESSION NO--AP0140913
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140913

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 1,ETHOXYCYCLOHEXENE HEATED IN A SEALED TUBE AT 210DEGREES WITH R PRIME1 CH DOUBLE BOND CRCHO CONTG. 0.1PERCENT P-C SUB6 H SUB4 (OH) SUB2 FORMS DERIVS. (I) OF 6,ETHOXY,5,6,TETRAMETHYLENE,5,6,DIHYDRO,4H,PYRAN. I (0.04 MOLE) BOILED WITH 0.75 ML H SUB2 O AND 1.5 ML HOAC UNTIL HOMOGENEOUS, Poured INTO THE BOILING MIXT. OF 3.1 G NH SUB3 OH IN 25 ML HOAC, AND REFLUXED 1 HR YIELDS 59-76PERCENT 5,6,7,8,TETRAHYDROQUINOLINES (II). II CAN BE DEHYDROGENATED TO THE CORRESPONDING QUINOLINE BY HEATING WITH SE IN PHNO SUB2. I CAN BE CONVERTED TO II IN POORER YIELD BY PASSING A MIXT. WITH NH SUB3 OVER PT-AL SUB2 O SUB3 AT 225-30DEGREES. FACILITY: KIEV. INST. INZH. GRAZHDAN. AVIATS., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 669.713.1

SAFONOV, V. N., LIMANSKIY, V. A., KLYUSHKIN, V. P., LEVKOV, YE. G., BULGA-KOVA, N. G., IL'BINSKAYA, G. I., BORISENKO, N. A., and LEVKOVA, A. S.

"Physical Properties and Chemical Composition of Dust Formed During the Production of Aluminum and Silumin"

Tsvetnye Metally, No 4, Apr 71, pp 43-44

Abstract: Since the physical and chemical composition of a dust dictates the basic characteristics of the dust-collecting apparatus needed, a study was made of these characteristics of dusts collected during the production of electrolytic aluminum and silumin. Two methods of determining dispersibility were studied -- using triple cyclones and using impactors. The latter were found to give the most reliable results. The specific electric resistance for the dusts was measured and found to be $4 \times 10^7 - 4 \times 10^8$ ohms. cm for electrolytic aluminum and $5 \times 10^9 - 2 \times 10^{10}$ ohms.cm for silumin dust at the dew point of the gas in the temperature range of 20 to 40°C. At 100°C both forms of dust have a specific electrical resistance of less than $10^9 - 10^{10}$ ohms.cm. Other characteristics determined were density, bulk density, angle of rest, porosity, and moisture. The electrolytic aluminum dust was analyzed for total fluorine, Al_2O_3 , H_2O , Fe_2O_3 , SiO_2 , CaO , MgO , resin, SO_4^{-2} , and calcination loss. 1/1

BULGAKOVA, T. I.

Cybernetics

SO: FOREIGN PRESS DIGEST
30 JUNE 1971

114. USSR

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All Cybernetics 5702668
EVAFENOV, A. A., BULGAKOVA, T. I., and KULAGINA, G. S. (Moscow, Novosibirsk)

"On the Problem of Modeling the Evolutionary Process, With a Consideration of Selection" II

Moscow, Problemy Kibernetiki, Vyp 23. "Nauka" Publishing House, 1970, pp 247-260

Abstract: This article is a continuation of an article published with the same title in Vypusk 20 of Problems of Cybernetics. It traces in greater detail the statistical mechanisms in divergence of forms and formation of genetically isolated "relic" groups within the framework of the population, with different selection mechanisms.

1/1

USSR

UDC 51:155.001.57:612.82

BULGAKOVA, T. I., KULAGINA, O. S., LYAPUNOV, A. A.

"Problem of Modeling the Evolutionary Process Considering Selection. II."

Probl. Kibernetiki [Problems of Cybernetics -- Collection of Works], No 23, Moscow, Nauka Press, 1970, pp 247-260, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V665 by the authors).

Translation: For Part I, see RZhMat, 1969, 8V482. The statistical mechanisms of divergence of forms and formation of genetically isolated "relict" groups within the limits of populations are studied in greater detail with various selection mechanisms.

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PHASE EQUILIBRIUMS IN THE FERRITE REGION OF A MANGANESE, IRON, OXYGEN
SYSTEM -U-
AUTHOR--(02)-BULGAKOVA, T.I., ROZANOV, A.G. **B**
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 693-8
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS
TOPIC TAGS--MANGANESE, IRON, OXYGEN, SPINEL, FERRITE, PHASE DIAGRAM

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1102 STEP NO--UR/0076/70/044/003/0693/0698
CIRC ACCESSION NO--AP0123094
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123094

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EQUIL. IN THE SYSTEM MNFE SUBN
O SUBX H SUB2 H SUB2 O WAS STUDIED AT 969 AND 1000DEGREES FOR 3.852
LARGER THAN OR EQUAL TO N LARGER THAN OR EQUAL TO 1.130 WITHIN THE
LIMITS FROM THE SPINEL TO MNO PLUS FE. THE STABILITY LIMITS OF THE
SPINEL AND LOWER OXIDE PHASES WERE ESTABLISHED. THE PHASE DIAGRAM IN
THE FERRITE REGION OF THE MN-Fe-O SYSTEM FOR 969DEGREES IS PRESENTED.

FACILITY: KHIM. FAK., MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW,
USSR.

UNCLASSIFIED

Explosives and Explosions

USSR

UDC 542.91:547.722

NIKOLAYEVA, A. D., MITUSHIN, YU. N., PEPEKIN, V. I., SHEL'OV, V. S.,
VULIDOROV, V. V., BULIDOROVA, T. I., and APIN, A. YA., Institute of Chemical
Physics, Acad. Sc. USSR

"Synthesis and Study of the Detonation Properties of 3-Methyl-4-nitrofuroxane"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 72,
pp 965-967

Abstract: A safe and simple synthesis of 3-methyl-4-nitrofuroxane (MNF) has been developed. The synthesis is based on the reaction of sodium nitrite mixed with H_2EO_2 with a solution of metacrylic acid in dichloroethane at 50° . MNF can also be obtained in a 24% yield from a mixture of acetone, nitroacetone, and nitropropylene treated with a mixture of nitrogen tetroxide and nitric acid. Experimentally the thermochemical and detonational properties of MNF have been determined: heat of combustion $\Delta H_{comb}^\circ = 408.7 \pm 0.2$ kcal/mole; enthalpy of the formation of MNF $\Delta H_f^\circ = 24.1 \pm 0.2$ kcal/mole. The detonation rate $v_{det} = 1.6 \times 10^4$ m/sec for the charge was found to be $D_{det} = 7490$ m/sec. The detonation velocity v_{det} and the detonation pressure P_{det} of MNF are 1.6 times and 1.5 times, respectively, higher than those of nitroacetone. The synthesis of MNF is simple and safe, and the product is a powerful explosive.

USSR

UDC: 51

~~BULINSKIY V. A.~~

"On the Possibility of Combining Main and Auxiliary Strategies of Competitive Development of Economies"

Tr. 4-y Zimn. shkoly po mat. programmir. i smezhn. voprosam, 1971, vyp. 1
(Works of the Fourth Winter School on Mathematical Programming and Related Problems, 1971, No 1), Moscow, 1971, pp 158-165 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V449)

[No abstract]

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II. COMBINATORY ANALYSIS AND GRAPH THEORY

A. Graph Theory

USSR

BULITKO, V. K.

"The Problem of the Finiteness of a Graph with Fixed Surroundings of Points"

Obshch. teoriya sistem [General Systems Theory - Collection of Works], Kiev, 1972, pp 76-83 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V330, by V. Zemlyachenko)

Translation: The "graph" concretization of certain problems related to the study of structures, all local substructures of which are isomorphic, is studied.

In particular, an infinite class of graphs M is constructed, such that for each M there is an infinite graph, for which the surroundings of all points are isomorphic to M , but there is no finite graph with the same property.

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USSR

UDC 581.132.04

CHIKOV, V. I., BILKA, M. Ye., and LOZOVAYA, V. V., Kazan' University and Tatar Agricultural Research Institute, Kazan'

"Effect of Insecticides on the Distribution of C^{14} in the Products of Photosynthesis"

Moscow, Fiziologiya Rasteniy, No 1, 1971, pp 190-193

Abstract: In pot experiments with 10- to 15-day-old bean (*Vicia faba*) plants (Russkiye chernyye variety), 4 organophosphorus insecticides slightly stimulated photosynthesis at low concentrations (0.1%) but inhibited it at high concentrations (0.5%). Treatment of the plants with the insecticides affected not only the intensity of photosynthesis but also the distribution of C^{14} in its products. Concentrations of 0.5 or below 0.1% suppressed the synthesis of sucrose while increasing the incorporation of the label into amino acids, organic phosphates, and organic acids. The nonspecific changes noted in the chemism of photosynthesis, like those brought about by high concentrations of ammonia, drought, organophosphorus defoliants, etc., apparently result from a deficiency of ATP caused by unfavorable factors.

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USSR

UDC 621.65/.68.621.3.078.

SMEL'NITSKIY, S. G., Candidate of Technical Sciences, BULKIN,
A. Ye., Candidate of Technical Sciences, PANOV, V. I., Candidate
of Technical Sciences, Gusarov, O. P., Engineer, and TYUGAYEV,
V. A., Engineer, Moscow Power Engineering Institute, Heat and
Electric Power Plant-22, Moscow Regional Administration of Power
System Management

"Electric Automatic Control and Protection System of OVPT-500-
Type Turbopump Feeder Unit"

Moscow, Teploenergetika, No 6, Jun 73, pp 33-36

Abstract: A new electric system of automatic control and protec-
tion with complete elimination of hydraulic members was installed
on the turbopump feeder unit No1, OVPT-500 type, of the Heat and
Electric Power Plant-22 of Moscow Regional Administration of Power
System Management. The system is mainly based on typical automa-
tion means used in technological processes in electric power
plants. The working of the system is discussed by reference to its
functional circuit, the diagram of control mechanism, and the po-
wer supply diagram of electromagnets of friction drives. The des-
cribed system considerably simplified the operating conditions of
the turbopump feeder unit, in particular its remote control. Five
figures, four bibliographic references.

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USSR

UDC: 533.9.08:621.373.530.145.6

MARIPOV, A., BULKIN, P. S., SOLNTSEV, G. S., GINZBURG, V. M.

"Singularities of Diagnosing a Superhigh-Frequency Plasma by the H_{01} Mode in a Circular Waveguide"

V sb. Vopr. fiz. nizkotemperaturn. plazmy (Problems of Low-Temperature Plasma Physics--collection of works), Minsk, "Nauka i tekhn.", 1970, pp 75-78 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D131)

[No abstract]

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USSR

UDC 616.9(075.8)

BULKINA, I. G., and POKROVSKIY, V. I.

Infektsionnyye Bolezni S Ukhodom Za Bol'nymi i Osnovami Epidemiologii (Infectious Diseases With Care of Patients and Foundations of Epidemiology),
Leningrad, "Meditsina," 1970, 317 pp

Translation:

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Appendix 4. Incubation periods of different infectious diseases 312

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USSR

UDC: 678:[621.01+539.4]

TARNOPOL'SKIY, YU. M., PORTNOV, G. G., SPRIDZANS, YU. B., and BULMANIS, V. N.,
Institute of Polymer Mechanics, Academy of Sciences of the Latvian SSR, Riga

"The Supporting Power of Rings Formed by the Winding of Composites Reinforced by High-Modular Anisotropic Fibers"

Riga, Mekhanika Polimerov, No 4, Jul-Aug 73, pp 673-683

Abstract: The authors study the particulars of composites which are related to the intrinsic anisotropy of reinforcing fibers. The effect of twisting and reinforcement stretching is studied on the axisymmetry of the field of deformations, and the moduli of elasticity and strength in the direction of the fibers under external and internal pressure loading, while taking into consideration the increased pliability of the material in a transverse direction. In the case of modular material, the authors obtain numerical estimates for the moduli of elasticity E_0 and E_r , for the coefficients of thermal expansion α_0 and α_r , and for the initial temperature stresses σ_r^0 and σ_0^0 . The dependence of the destructive pressure on ring thickness is described and the conditions for failure are formulated. In all the studied problems it is shown that it is necessary to take into consideration the increased pliability of the composites in the transverse direction.

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USSR

UDC 615.916:546

BULMASOVA, S. P.

"Effect of Lead Intoxication on the Activity of the Mitochondrial Aspartate and Alaninaminotransferase in the Liver and Kidneys of White Rats"

Nauch. tr. Irkutsk. med. in-t (Scientific Works of the Irkutsk Medical Institute), 1972, vyp 110, pp 112-113 (from RZh-- Farmakologiya. Khimioterapevticheskiye Sredstva. Toksikologiya, No 3, Mar 73, Abstract No 3.54.663)

Translation: In the suspension of liver mitochondria of the rats which for seven days were hypodermically injected with 40 percent solution of Pb (NO₃)₂, 0.5 ml daily, the decrease in activity of the alaninaminotransferase to 41.6 % of pyruvate in a 0.5 ml suspension (96.9 control) was observed; in the supernatant, the activity of the aspartaminotransferase dropped. The activity of the alaninaminotransferase in the supernatant of the kidneys to 23.8 (54.8) % of pyruvate, the degree of deaminization of the DL-alanine decreased. In the mitochondria of the kidneys in the supernatant, the DL-aspartate did not deaminize; the level
1/2

USSR

BULMASOVA, S. P., Nauch. tr. Irkutsk. med. in-t, 1972, vyp 110, pp 112-113

of deaminization of DL-alanine was very significant. The conclusion was drawn that for the expressed Pb poisoning, the processes of reamomazation in the liver and kidney mitochondria are disturbed.

2/2

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BULOSHNIKOV, A.M.

geomagnetism

THE PHYSICS OF GEOMAGNETIC PHENOMENA
(Conference in Moscow)

Article by Candidate of Physical and Mathematical Sciences A. M. Buloshnikov and A. M. Buloshnikov; Moscow, Vestnik Akademii Nauk SSSR, Kossibiry, No. 42, no. 10, 1972, pp 112-113

The Scientific Council for Geomagnetism conducted in Moscow on 10-12 January a conference on the physics of geomagnetic phenomena at which about 100 eminent specialists from various scientific institutions of the country came together.

Heard with great interest was the survey report of V. A. Troitskaya and Ya. I. Fel'dshchyn entitled "Diagnosis of the magnetosphere on the basis of geophysical data obtained on the ground." The connection of various geophysical phenomena with physical processes in the earth's atmosphere has now been firmly established -- it is impossible to describe the ionosphere more with simultaneously describing the state of the magnetosphere. In addition, circumauroral events, whose occurrence an extremely valuable natural laboratory where physical processes occur which in principle cannot be modeled under earthly conditions, in particular, many processes of individual and plasma physics, and the near cosmos is already being transferred into an environment of man -- therefore it is necessary to investigate in detail those processes, their parameters and their changes.

In the planned investigations a very important role will be played by artificial earth satellites, but for an effective diagnosis of the magnetosphere it is necessary to have a correct combination of data transmitted from the satellites and data obtained in ground observations. With satellites it is possible to obtain information about the state of the magnetosphere only at a relatively small number of points rapidly moving in space, whereas ground observations can be conducted continuously and with as dense a net of stable stations as desired. Unfortunately,

Handwritten notes:
Buloshnikov
Soviet PRS # 50715
Summer 1972
2

USSR

UDC: 8.74

BULOVAS, V. V., YASHEVICHUS, R. Yu.

"Results of an Experimental Digital Computer Study of an Algorithm"

V sb. Vychisl. tekhn. T. 2 (Computer Technology. Vol 2--collection of works), Kaunas, 1971, pp 572-576 (from RZh-Kibernetika, No 1, Jan 72, Abstract No IV1043)

Translation: The paper presents the results of an experimental study of an algorithm for minimizing a linear functional. The linear programming problem is solved by the gradient method. In order to determine the maximum of the linear functional, a certain function is formed, and the maximum is then found by moving along this function. The Pine method is used in solving the problem. The equations are discretized for digital computer realization of the algorithm. The described algorithm was checked out on the "Fazdan-3" computer. Experimental results are given. T. Alekperov.

1/1

USSR

UDC: 51:155.001.57:681.3.06

BULOVAS, V. V.

"Algorithms for Selecting Model Representatives of Sets"

V sb. Vychisl. tekhnika. T. 2 (Computer Technology--collection of works. Vol. 2), Kauras, 1971, pp 566-571 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V1006)

Translation: Two algorithms for selecting model representatives of sets are considered. The results of an experimental check are given. Author's resumé.

1/1

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1/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--FUNCTIONAL INHIBITION OF THE ADRENAL GLANDS BY ACYLATED
DERIVATIVE OF THE ADRENOCORTICOTROPIC HORMONE -U-
AUTHOR--DILMAN, V.M., PROKUDINA, YE.A., BULGVSKAYA, L.N., KONSTANTINOV,
V.L., TUGUNOV, S.S.
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3, PP 69-71
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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--A0052276

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACETYLATED DERIVATIVE OF ACTH IN WHOM ALL FREE AMINOGROUPS ARE ACETYLATED ARE ENDOWED WITH THE CAPACITY TO FUNCTIONAL INHIBITION OF THE ADRENAL GLANDS REDUCE THE LEVEL OF HYDROCORTISONE IN THE PERIPHERAL BLOOD IN INTACT GUINEA PIGS ON AN AVERAGE BY 37PERCENT FOUR HOURS AFTER INTRODUCTION AND THE LEVEL OF CORTICOSTERONE IN RATS BY 29PERCENT UPON ADMINISTRATION OF THE DERIVATIVE FOR A COURSE OF SEVEN DAYS.

UNCLASSIFIED