

USSR

UDC 591.8

BORTNIK, E. M., KRAVTSOV, M. P., BORTNIK, S. M., and MIKHAYLOVA-LUKASHEVA, V. D., Gerontology Section, Academy of Sciences Belorussian SSR

"Age-Associated Changes in the Concentration of SH-Groups in the Cortical Section of the Visual Analysor in Some Mammal"

Doklady Akademii Nauk BSSR, Vol 14, No 12, 1970, pp 1,138-1,139

Translation: It is known that many substances present in the mammalian body contain SH-groups. Among these substances are proteins, enzymes, some co-enzymes, and low-molecular-weight compounds such as cysteine, homocysteine, eogothioneine, and others. They participate in such important physiological processes as muscular contraction, tissue growth and regeneration, and nervous excitation and inhibition (1-4).

The literature contains scanty data on age-associated shifts in the concentration of SH-groups and the information is contradictory. These investigations were done by various methods with unequal specificity and sensitivity.

Some investigators have demonstrated that in advanced senility, the concentration of SH-groups in the proteins of the cerebral cortex, liver, kidneys, skeletal muscles, and heart of guinea pigs and rats decreased. Other
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BORTNIK, E. M., et al., Dokaldy Akademii Nauk BSSR, Vol 14, No 12, 1970, pp 1,138-1,139

researchers have found that the concentration of SH-groups in the cerebrum was greater in old rats than in young rats. However, age-associated shifts in the concentration of SH-groups in different tissues proceed at a different rate as a result of the fact that the process of aging is heterochronous. In view of the importance of SH-groups in oxidative phosphorylation, we became interested in investigating the concentration of SH-groups in the cortical section of the visual analyser (field 17). As experimental subjects we used newborn dogs, 1 and 6 months old, and 2 and 18 years old as well as newborn rats and 1, 6, 14, and 32-month-old rats. Tissues were fixed in a 1% solution of trichloroacetic acid in 80% alcohol. Protein-bound SH-groups were determined by the method of Barnet and Zeligman.

The concentration of SH-groups was analyzed in the following segments of neurons: cytoplasm, cytoplasmic membrane, processes, nuclear membrane, and nucleolus.

The highest concentration of SH-groups was observed in neurons and surrounding structures in the fourth layer. A smaller concentration of SH-groups was found in the cytoplasm of nerve cell bodies in the second and 2/4

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BORTNIK, E. N., et al., Doklady Akademii Nauk BSSR, Vol 14, No 12, 1970,
pp 1,138-1,139

third layers, while the concentration in the star-shaped cells in the fifth layer was greater. Nuclear and cytoplasmic membranes and nucleoli had the highest concentration of SH-groups. The karyoplasm was found to be relatively poor in this substance.

Within one layer, neurites and dendrites had approximately the same concentration of SH-groups.

Investigation of the SH-groups in correlation with age showed that the distribution of SH-groups in the neurons and their processes was different in animals of different ages. The concentration of SH-groups in newborn animals was fairly high, increased at the age of 6 months, was highest in rats aged 14 months and in dogs aged 2 years, and then gradually decreased. Rats aged 32 months and dogs aged 18 years had a small concentration of SH-groups in the neurons and in the surrounding structures. Of special interest was the following observation: the decrease with advancing age proceeded in the reverse order than the previous increase.

Analyses performed on young embryos, newborn animals, and those aged 1 month, 6 months, and more revealed that the SH-groups accumulated first in nuclear and cytoplasmic membranes and then in nucleoli, cytoplasm, and
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BORTNIK, E. M., et al., Doklady Akademii Nauk BSSR, Vol 14, No 12, 1970, pp 1,138-1,139

karyoplasn. During aging, the concentration decreased first in the karyoplasn, then in the nucleoli, and finally in the nuclear and cytoplasmic membranes.

Thus, this study has revealed that with advancing age, shifts take place in the concentration of SH-groups in the cortical segments of the visual analyser in rats and dogs. The concentration of SH-groups in neurons is high in newborn animals, reaches a peak in rats aged 14 months and in dogs aged 2 years, and considerably decreases in senility.

The speed of protein regeneration in ontogenesis decreases with advancing age. One of the reasons may be the decreasing concentration of SH-groups in the tissue.

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USSR

UDC: 551.511

BORTNIKOV, S. A.

"Operational Short-Deadline Prediction of Meteorological Elements From Complete Equations of Hydrodynamics, and Experience in Aviation Weather Control"

Tr. Vses. konf. po vopr. meteorol. obespecheniya sverkhzvuk. aviatsii, 1971 (Works of the All-Union Conference on Problems of Weather Control for Supersonic Aviation, 1971), Leningrad, 1971, pp 67-75 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B962)

Translation: The paper presents a numerical scheme for short-term weather prediction from complete equations of hydrothermodynamics over a limited territory (spacing with respect to horizontal variables equal to 300 km, and five levels used along the vertical coordinate). The computational algorithm is based on implicit inversion of linear operators and iterations with respect to nonlinear operators in the equations. Results of operational tests on predicting wind speed fields in the atmosphere are presented. The peculiarities of the proposed prognostic scheme are noted. Bibliography of 7 titles. V. V. Penenko.

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USSR

UDC

BORTNIKOV, Yu. S., NESTEROV, V. A., RUBASHOV, I. B., Moscow

"Study of Characteristics of the Electric Gas Dynamic Engine"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 6, 1971, pp 167-170.

ABSTRACT: Results are presented from theoretical and experimental studies of the electric gas dynamic engine, designed to create the thrust for a flight vehicle. Calculation relationships are produced, which agree well with the experimental data. It is demonstrated that the effectiveness of this engine can be rather high for practical purposes. A number of works have been written concerning ion-convection pumps operating on this principle, in which dielectric fluids are pumped using a Corona discharge. The use of the "Corona wind" in gases allows the creation of an engine capable of operating in any non-conducting atmosphere. In contrast to the ion engine, the EGD engine creates thrust due to acceleration of a neutral working fluid (for example, atmospheric gases) by means of ions, allowing the creation of a significant thrust, sufficient to support a vehicle in the atmosphere.

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1/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CHANGES IN A SYSTEM OF ENDOGENOUS GROWTH REGULATORS IN BEAN PLANTS UNDER THE INFLUENCE OF 2,4-D -U-
AUTHOR--(05)-CHIGRIN, V.V., FILINKOLDAKOV, B.V., FADEYEVA, O.I.,
BORNIKOVA, T.P., SYKALO, N.I.
COUNTRY OF INFO--USSR
SOURCE--KHIM. SEL. KHOZ. 1970, 8(4), 301-2
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--LEGUME CROP, PLANT PHYSIOLOGY, PLANT GROWTH REGULATOR,
HERBICIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0021 STEP NO--UR/0394/70/008/004/0301/0302
CIRC ACCESSION NO--AP0137220
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0137220
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWENTY FOUR HR AFTER TREATMENT OF
KIDNEY BEAN PLANTS WITH A SOLN. OF THE K SALT OF 2,4-D (2 TIMES 10 PRIME
NEGATIVE3 M), THE CONTENT OF INDOLEACETIC ACID (I) IN THE LEAVES WAS
UNCHANGED, BUT AFTER 6 DAYS IT WAS DOUBLED. IN THE STEMS OF THE PLANTS
THE AMT. OF I DOUBLED, 24 HR AFTER APPLICATION OF THE HERBICIDES. THE
ACTIVITY OF I OXIDASE, AND THE CAPACITY OF FIBER HOMOGENATES TO
SYNTHESIZE I FROM TRYPTOPHAN, WAS CONSIDERABLY HIGHER FOR PLANTS TREATED
WITH 2,4-D. FACILITY: SEVEROKAVKAZ. NAUCH.-ISSLED. INST.
FITOPATOL., USSR.

UNCLASSIFIED

BORTNOVA M.B.

AP0041471 (C) BIOLOGICAL ABSTRACTS / -70 UR 6000

16175. CAVRILENKO, V. S., R. I. ROZINA, R. N. VLEENSKAYA, K. M. TITEL'MAN, and M. B. BORTNOVA. (Moscow Res. Inst. Tuberc. and Health Nurs., Moscow, USSR.) Znachenie nekotorykh biokhimicheskikh testov dlya opredeleniya aktivnosti i klinicheskogo izlecheniya tuberkuleza legkikh. [Significance of some biochemical tests in determining the activity and clinical cure of pulmonary tuberculosis.] PROSL TUBERK 47(8): 54-60, 1969. [Engl. sum.]--Blood protein fractions, C-reactive protein, sialic acid, total lipids, lipoproteins, lipase, cholesterol and lecithin were investigated to determine the significance of some biochemical indices in evaluating activity and clinical cure of pulmonary tuberculosis in 159 persons (72 with active, 46 with subsided morbid process and 41 with clinical cure). A relationship between the frequency of disturbances in some metabolic indices and the form of the morbid process (in patients with active tuberculosis), as well as its phase (in patients with military hematogenic tuberculosis) was revealed. Differences in the incidence of disturbances involving some biochemical indices were shown with varying activity of the tuberculous process, but since each group yields normal and pathological values of the tests under study these values cannot be of clinical significance in assessing activity of pulmonary tuberculosis and residual changes in each particular case.--G. S.

19710007

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UDC 681.2.085.36.088.6

BORTNYAKOV, YU. L., and MINEVICH, M. L.

"Minimization of a Total Error in Digital Measurements"

Moscow, Izmeritel'naya Tekhnika, No 9, Sep 71, pp 36-38

Abstract: The dependence of total error dispersion of a system of discrete measurements of stationary random processes, on the number of binary digit bits of a quantizer n , is analyzed. The system total error consists of quantization and interpolation errors, and also of the error caused by distortion in the communication channel. Each of these components is considered separately. The results show that 1) the total error dispersion of a measuring digital system has always ($p < 0.25$) a minimum, which is unique; 2) the optimal value of n depends weakly on the form of a correlation function and on the interpolation method, and lies within the range of $n_0 < 8$; 3) the utilization of linear interpolation instead of stepwise, in majority of cases, reduces the magnitude of the total error dispersion by not more than half.

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Acc. Nr.

AT0100186

Abstracting Service:

CHEMICAL ABST.

4/70

Ref. Code

UR0000

81423b Effect of thermolysis of chemical reagents on results of geochemical studies of deep and very deep boreholes. Dovzhuk, V. G.; Bortok, G. A. (USSR). Tr., Vses. Nauch.-Issled. Inst. Yad. Geol. Geokh. n. 1968, No. 4, 191-5 (Russ). Various chem. reagents, made mostly of cellulose, lignin, and brown coal, are used as additives in deep and ultradeep drilling. Gases, including hydrocarbons, are formed during the thermolysis of these compds. at high temps. These gaseous products enter the drilling mud and affect certain parameters of the geochem. studies of drill holes. The gases, formed during thermal decompn. of various reagents (sunil, nitrolignin, KMTs, and UShchR) were similar in their compn.: CO, 98-99, paraffin hydrocarbons (including 6-11 homologs) 1-2, and H 0.1-0.5%. The amt. and compn. of the gases depended on the chem. compn. and moi. structure of the additives. Errors, generated by the penetration into drilling mud of hydrocarbon gases formed during thermolysis of chem. reagents, should be considered during any interpretation of the geochem. data. These errors are typical of sunil and nitrolignin at >100, for KMTs at >160, and for UShchR at 180-200°.

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REEL/FRA
19841568

J.L.

11

1/2 007 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EFFECT OF FERRIC OXIDE ON THE DECOMPOSITION OF CALCIUM AND
MAGNESIUM SULFATES DURING THE ROASTING OF FLUXED PELLETS -U-
AUTHOR-(04)-BORTS, YU.M., KOPYRIN, I.A., FUSAKOV, L.N., LENEV, L.M.
COUNTRY OF INFO--USSR *B*
SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (1), 7-11
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SULFATE, PELETIZATION, MAGNESIUM COMPOUND, IRON OXIDE, CALCIUM
SULFATE, CALCINATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--1984/0168 STEP NO--UR/0370/70/000/001/0001/0011
CIRC ACCESSION NO--AP0054964
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054964

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PELLETS FROM THE MIXTS. FE SUB2 O
SUB3: CASO SUB4 EQUAL 4 AND FE SUB2 O SUB3:, MGSO SUB4 EQUAL 4(WT.
RATIO) WERE CALCINED IN AN AIR STREAM. REACTIONS WITH CASO SUB4 AND
MGSO SUB4 STARTED GREATER THAN 1200 AND 1000DEGREES, RESP.

UNCLASSIFIED

USSR

B UDC: 669.162.12:622.782.004.12

KOPYRIN, I. A., PERMINOV, N. I., and BORTS, YU. M.

"Influence of Magnesium on the Properties of Fluxed Iron Ore Pellets"

Izv. VUZ, Chernaya Metallurgiya, No 6, 1970, pp 28-32

Abstract: A study was made of the effect of substituting dolomite for limestone in pellets manufactured of finely grained SSGOK concentrates with (CaO + MgO): SiO₂ = 1.34. It was established that the replacement of limestone by dolomite facilitates an increase in the rate of desulfuration and a decrease in the temperature of the beginning of active desulfuration of the pellets. Due to the lower quantity of fluid mobile melt, oxidation of Fe₃O₄ in pellets with dolomite occurs more rapidly and is possible right up to 1200°C. The process of oxidation and desulfuration can be combined in a single zone of high temperatures, whereas pellets with limestone must be oxidized in a zone of moderate temperatures (not over 1100°C). The presence of free lime (up to 0.5%) and its hydration cause intensive breakage of pellets with limestone in the moist atmosphere. Under the same conditions for dolomite pellets, no free lime is detected and they lose their strength to a lesser extent when stored exposed to the air. With increasing MgO in the pellets, the softening temperature increases from 1065 to 1160°C. From the standpoint of improvement of slag properties, it is more expedient to introduce dolomite into the pellets than into the agglomerate. 4 illustrations; 2 tables; 12 biblio. refs.

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1/3 . G12 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--KINETICS AND MECHANISM OF DESULFURIZATION DURING THE SINTERING OF
FLUXED PELLETS -U-
AUTHOR--(03)--BORTS, YU.M., KOPYRIN, I.A., GAVRIN, E.G.
COUNTRY OF INFO--USSR **B**
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 34-8
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS
TOPIC TAGS--PELLETIZATION, DESULFURIZATION, SINTERING FURNACE, METALLURGIC
FLUX

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1365 STEP NO--UR/0148/70/013/002/0034/0038
CIRC ACCESSION NO--AT0120161
UNCLASSIFIED

2/3 . 012

UNCLASSIFIED

PROCESSING DATE--20NOV7C

CIRC ACCESSION NO--AT0120161

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF LITERATURE DATA AND LAB EXPTS., THE MECHANISM OF THE REMOVAL OF S DURING OXIDIZING FIRING OF FLUXED PELLITS FROM 2 CONC. CONCS. CAN BE REPRESENTED BY THE FOLLOWING: (1) REACTIVE DIFFUSION OF S IN THE PARTICLE OF THE CONC.; (2) ADSORPTION OF O AND SO₂ AT THE SURFACE OF THE FE AND CA OXIDES; (3) SULFURIZATION OF THE METAL OXIDES AND THE SULFIDES DURING THEIR INTERACTION WITH S GASES, WITH THE FORMATION OF INTERMEDIATE COMPLEXES AND SULFATES; (4) INTERACTION OF THE SULFATES WITH AL₂O₃, SiO₂, AND Fe₂O₃, WITH THE FORMATION OF ALUMINATES, SILICATES, AND FERRITES OF CA AND OF SO₂; (5) DESORPTION OF SO₂ FROM THE SURFACE OF THE SOLID PARTICLES; (6) MOL. DIFFUSION OF SO₂ AND O BETWEEN THE SOLID PARTICLES AND IN THE MAIN FILM OF THE GAS AT THE SURFACE OF THE PELLET. THE RATE OF THE REACTIVE DIFFUSION DEPENDS ON THE CONC. GRADIENT OF S IN THE PARTICLE OF THE CONC. CONSEQUENTLY, THE S CONTENT IN THE FIRED PELLETS DEPENDS ON THE UNIFORMITY OF THE DISTRIBUTION OF THE PYRITE BETWEEN THE PARTICLES OF THE CONC., ON THE COARSENESS OF THE PARTICLES OF THE CONC., AND ON THE TOTAL S CONTENT IN IT. MUCH MORE IMPORTANT THAN THESE, HOWEVER, IS THE EFFECT OF THE FIRING TEMP. ON THE RATE OF DESULFURIZATION OF THE PELLETS. INCREASING THE FIRING TEMP. FROM 400 TO 1200 DEGREES LEADS TO A SIGNIFICANT SPEEDING UP OF THE REACTIVE DIFFUSION, AND CONSEQUENTLY IN A SHORTENING OF THE INDUCTION PERIOD.

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3/3 . 012

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PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0120161

ABSTRACT/EXTRACT--THE CBSO. LINEAR DEPENDENCE BETWEEN THE LOGARITHM OF THE AV. RATE DURING 10 MIN FIRING AND THE INVERSE TEMP. VALUE POINTS TO AN EXPONENTIAL RELATION BETWEEN THE RATE OF REMOVAL OF S AND THE FIRING TEMP. WITH INCREASING TEMP., THE RATE OF OXIDN. OF S INCREASES. AT 400-600DEGREES, THE SULFURIZATION PROCESS OF CAO DOES NOT EXERT A STRONG EFFECT ON THE DESULFURIZATION RATE AND IS DETD. BY THE MOL. DIFFUSION OF SO SUB2. THE DESULFURIZATION RATE AT 500 AND 600DEGREES IS HIGHER THAN AT 400DEGREES. THE STAGES OF THE DESULFURIZATION PROCESS OF FLUXED PELLETS DURING OXIDIZING FIRING ARE DISCUSSED. FACILITY: CHELVABINSK. NAUCH.-ISSLED. INST. MET., CHELYABINSK, USSR.

UNCLASSIFIED

Acc. Nr.

A70036219

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code

UR 0148

69567u Kinetics and mechanism of desulfurization during the roasting of fluxed pellets at the Sokolov-Sarbai Concentration Mill. I. Borts, Yu. M.; Kopyrin, I. A.; Gavrin, E. G. (Nauch.-Issled. Inst. Met., Chelvyabinsk, USSR). *Izv. Vyssh. Ucheb. Zaved., Chern. Met.* 1969, 12(12), 28-32 (Russ). Iron-ore pellets 12-15 mm in diam. weighing 20 g were dried at 140-150°. The amt. of S evolved was detd. by iodometry. The desulfuration was studied at 400-1200° with basicities of the pellets of 0.7 and 1.6. During slow heating of the pellets, the effect of sulfate formation on S elimination is clearly visible. The most probably process that inhibits desulfurization at 600-1000° is the sulfatizing of CaO taking place in the decompn. of calcite. The inhibiting effect of sulfatizing is reduced at >1000° owing to the decompn. of CaSO₄. The desulfurization starts at 400°, independently of the basicity. It is most intense at 500-600°. A temp. increase to 900-1000° is not accompanied by a noticeable elimination of S. The elimination of S and the desulfurization rate are inversely proportional to the basicity. The effect of the filtration rate was studied with a consumption of cold air of 0.2-1.5 l./min. The optimum was 1.0-1.2 l./min. The effect of the pellet size was studied with diams. of 6-35 mm at a CaO:SiO₂ ratio of 1.4. There is a linear dependence between the pellet size and degree of desulfurization. L. Holl

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REEL/FRAME

19721039

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UDC 539.376:620.171

MILOSERDIN, Yu. V., NABOYCHENKO, K. V., CHEBURKOV, V. I., NAUMOV, S. G.,
LAVEYKIN, L. I., BORTSOV, A. G., Moscow

"High Temperature Creep of Zirconium Carbide"

Problemy Prochnosti, No 3, 1972, pp 50-53.

Abstract: Results are presented from creep and long-term strength tests of specimens of zirconium carbide in the 2,450-2,810°K temperature range. The nature of behavior of the zirconium carbide in various stages of creep and the relationship between parameters characterizing creep and the test conditions of the material are studied. It is demonstrated that in the 2,450-2,810°K temperature interval with stresses of 0.3-1.0 kg/mm², the stable stage of creep of zirconium carbide is determined by a diffusion process with an activation energy of 116 ± 18 kcal/mol.

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Acc. Nr: **AP0048958**

Ref. Code: **UR0357**

PRIMARY SOURCE: Vestnik Oftal'mologii, 1970, Nr /
pp 8-12

METHODS OF STUDY AND BASIC CHARACTERISTICS OF THE OCULAR
HEMODYNAMICS (EXPERIMENTAL INVESTIGATION).

Yu. S. Astakhov, V. N. Bortsov

Summary

Methods for experimental study of ocular hemodynamics are described, with the investigation carried out on cats. Thin polyethylene catheters measuring 0.1--0.2 mm in diameter were introduced into the posterior ciliary artery and intrascleral venous plexus. Intraocular tension in the anterior chamber was measured with the aid of a cannulated needle connected to an electric manometer. To measure the blood flow the polyethylene catheter was inserted into one of the major intrascleral veins, after all other venous branches have been ligated. Blood pouring out of the catheter was collected in gelatin capsules and then weighed with a torsion balance. The mean pressure in the long posterior ciliary artery amounted to 78.8 mm Hg (26 cats), that of intrascleral venous pressure comprised 10.67 mm Hg (35 cats), while the mean value of the uveal blood flow equalled 1.002 g/min (11 cats). The significance of the methods described for the study of the ocular hemodynamics and of its role in the regulation of ophthalmotone is considered.

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19800733

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UDC 612.822.3+612.821.6

BORUKAYEV, R. K., Laboratory of Conditioned Reflexes, Institute of Higher Nervous Activity and Neurophysiology, Academy of Sciences USSR, Moscow

"Evoked Potentials in the Formation and Achievement of a Conditioned Reflex"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, Vol 23, No 3, May/June 73, pp 468-476

Abstract: An examination is made, on the basis of published data, of experimental conditions which affect changes in evoked potentials in animals during the development of a conditioned reflex and an attempt is made to explain the neurophysiological and other mechanisms of these changes. Among the factors that can result in an increase or decrease in evoked potential amplitude are the stage of development of the conditioned reflex, the previous history of the conditioned stimulus, neutral stimuli used to evoke an electrical response and the experimental conditions. An increase, particularly, in evoked potential amplitude can be explained on the basis of tone and phase activation of the cerebral cortex and their interrelationships at different stages in the development of the conditioned reflex. The reticular formation of the mesencephalon and the hypothalamus can affect electrical activity in the cortex. Characteristics of the conditioned reflex itself can also affect increases or decreases in evoked potentials.

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Acc. Nr.

AT0043243

Abstracting Service: 4-76
CHEMICAL ABST.

Ref. Code
UR0020

B

88202n Interaction of carcinogens with microsomal hemo-
 proteins. Borukaeva, M. R.; Raikimman, L. M.; Shabalkin,
 V. A.; Saprin, A. N. Ist. Khim. Fiz., Moscow, USSR.
 Dokl. Akad. Nauk SSSR 1969, 189(3), 651-4 [Biophys] (Russ).
 EPR spectra were reported for microsomes (rats) treated with
 NO, 3,4-benzopyrene, 1,2,5,6-dibenzanthracene, 20-methyl-
 cholanthrene, and 9,10-dimethylbenzanthracene. The results
 showed that carcinogens are able to bind to the hemin proteins
 of the microsomes. Microsomes treated with NO in the absence
 of cancerogens gave intense EPR signals similar to those pro-
 duced by Hb and other similar proteins in the form of nitrosyl
 derivs. Treatment with the cancerogens changes the signal
 with greater definition of fine structure owing to some degree of
 electron localization. The change was greater in the case of 9,10-
 dimethylbenzanthracene, the stronger cancerogen, than in the case
 of 1,2,5,6-dibenzanthracene. It was suggested that the binding
 occurs at a hydrophobic portion of the protein near the porphyrin
 ring.
 G. M. Kosolapoff

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REEL/FRAME
19761414

AP0026029

SCI. ABST. SER. B

2-70 UR0104

5862 Locating earth faults in 6-20 kV overhead distribution networks by means of the 'Poisk-1' instrument. V.A. Borukhman, A.P. Kuznetsov. Elektr. Stanstii (USSR), no.1, p.45-8 (1969). In Russian.

The 'Poisk-1' is a portable device for measuring the harmonic magnetic fields in the neighbourhood of overhead lines caused by earth faults on the lines. The unit consists of an inductor sensor, band-pass filter (wide range of harmonics with sharp rejection at 50 Hz), transistor amplifier and rectifier meter. The instrument and its method of operation are described. More than 30 of the instruments have been employed with success over a period of two years. A complete schematic diagram is given. J.H.B.G.

5/11

19660967

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THERMAL DECOMPOSITION OF MAGNESIUM NITRATE -U-
AUTHOR-(03)-BERG, L.G., BORUKHOV, I.A., SAIDOVA, M.T.
COUNTRY OF INFO--USSR
SOURCE--UZB. KHIM. ZH. 1970, 14(2), 32-4 *B*
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MAGNESIUM COMPOUND, NITRATE, THERMAL DECOMPOSITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1060 STEP NO--UR/0291/70/014/002/0032/0034
CIRC ACCESSION NO--AP0123053
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0123053
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DTA STUDY OF THE THERMAL
DECOMPN. OF HG(NO SUB3) SUB2.6H SUB2 O INDICATES ENDOTHERMAL EFFECTS AT
60, 85-90, 145-50, AND 410-35DEGREES; THERMOGRAVIMETRY INDICATES WT.
LOSSES AT 230, 370, AND 430DEGREES CORRESPONDING TO THE FORMATION OF
HG(NO SUB3) SUB2.2H SUB2 O, HG(NO SUB3) SUB2, AND HGO, RESP.
FACILITY: INST. KHIM., TASHKENT, USSR.

UNCLASSIFIED

Acc. Nr **AP0034119**

Abstracting Service:
CHEMICAL ABST. 3-70

BORUKHOV IA

Ref. Code
UR0078

[62390x Thermographic analysis of ammonium phosphates. Nabiev, M. N.; Saibova, M. T.; Borukhov, I. A.; Parniev, N. A. (USSR). *Zh. Neorg. Khim.* 1969, 14(11), 2950-3 (Russ). X-ray diffraction patterns of $(NH_4)_2H_2PO_4$, $(NH_4)_2HPO_4$, and $(NH_4)_2PO_4 \cdot 3H_2O$ are given. $(NH_4)_2PO_4 \cdot 3H_2O$ loses 1 NH_3 easily and is converted to a diammonium phosphate, which has a different powder-diffraction pattern than that of $(NH_4)_2HPO_4$. DTA of $(NH_4)_2H_2PO_4$ shows only 1 endothermic effect, at 200° , corresponding to melting. When heated, $(NH_4)_2HPO_4$ partially loses 1 NH_3 at 155° and melts at 185° . $(NH_4)_2PO_4 \cdot 3H_2O$ melts at 80° (incongruently), and loses H_2O at 110° with the simultaneous decompn. to $(NH_4)_2HPO_4$, which subsequently melts at 180° .

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REEL/FRAME
19710762

. Pesticides

USSR

UDC 631.81

SAIBOVA, M. T., IVANOV, R. N., BORUKHOV, I. A., and CHUMAKOV, F. P., Institute of Chemistry, Academy of Sciences, Uzbek SSR

"Effect of Magnesium Admixtures on the Physicochemical Properties of Ammophos"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, No 4, 1972, pp 23-25

Abstract: Ammophos is produced by the Almalyk Chemical Plant in Uzbekistan from Karatau phosphorites and their flotation concentrates containing up to 3.5% MgO. The presence of ammonium-magnesium phosphate exhibiting varying degrees of saturation with crystal hydrate moisture does not have a significant effect on the physical properties of ammophos which possesses a substantial moisture capacity. However, when the latter is mixed with ammonium nitrate or urea to obtain balanced fertilizers, the low hygroscopic point of dried ammophos may impair the quality of the fertilizer. For example, a mixture of granulated ammophos from apatite with ammonium nitrate and a moisture content of 0.6% has a hygroscopic point of 54 to 56%, compared with 38 to 42% for a mixture of ammophos from Karatau phosphorites with ammonium nitrate and the same moisture content. The optimum moisture content of a mixture of Karatau ammophos with ammonium nitrate or urea should not be less
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SAIBOVA, M. T., et al., Uzbekskiy Khimicheskiy Zhurnal, No 4, 1972, pp 23-25

than 2 to 2.5% thereby preserving good physical properties along with the highest hygroscopic point (52 to 54%). Further drying of these fertilizers would be economically undesirable and also sharply increase their hygroscopicity.

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- 27 -

USSR

UDC 552.1:552.321

BORUKHOV, M. Yu., KEYTLIN, L. G., KATSOYEVA, F. N., LIKHOYDOV, G. G.,
KHAMRABAYEV, I. Kh.

"Behavior of Rock During Heating in a Vacuum (Part II. Phase Composition and Physical-Mechanical Properties)"

Uzbekskiy Geologicheskii Zhurnal, No 6, 1971, pp 16-22.

ABSTRACT: The influence of vacuum treatment on the composition of the crystallizing phases of three petrographic types of basic and ultrabasic rocks was studied using nine samples from Western Uzbekistan and Kanchatka. The possibility was established in principle of using the method of crystallization "from the bottom" for satisfactory identification of the crystalline phases formed. It was demonstrated that vacuum heat treatment has a significant influence on the composition of the crystallizing phases. The results of the work performed indicate a method for production of high-quality structural material. Apparently, optimal modes of production of crystalline structures and glasses can be found for each type of mineral raw material, considering changes in the material occurring during heat treatment in a vacuum. High iron and titanium contents of the initial raw material provide high light-protection characteristics of cast products.

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- 63 -

USSR

UDC 662.997:556.495

BORUKHOV, M. YU., MAVASHEV, YU. Z., BASHNYAK, A. YA.

"Some Problems of Development of High Temperature Research Using Solar Furnaces Based on the Experience of the Tashkent Heliotechnologists"

Tashkent, Geliotekhnika, No 2, 1970, pp 41-44

Abstract: This article discusses high temperature research with solar furnaces at the Electronics Institute of the Uzbek SSR Academy of Sciences. The two types of solar furnaces in use at the institute are described briefly. It is noted that one of the problems with which the institute is faced is development of methods of measuring the thermophysical characteristics of a broad class of refractory and heat-resistant materials in the high temperature range using a highly efficient source of heat such as the solar furnace. A method of measuring the coefficient of thermal conductivity based on the use of regular thermal conditions of the third type (the thermal wave method) is described in two versions: rod (the method of axial temperature waves) and plate (the method of plane temperature waves).

Methods of welding and cutting refractory materials by means of concentrated solar energy are also discussed. It is pointed out that on the solar welding device it is possible to weld materials of the nonmetallic class. Bars of

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BORJKHOV, M. YU., Et al., Geliotekhnika, No 2, 1970, pp 41-44

zirconium dioxide, aluminum dioxide and magnesium oxide are welded at the focal point of the solar furnace. The method of welding using concentrated solar radiation has a great advantage over gas and electric welding: it is realized under exceptionally pure conditions and in the absence of electric and magnetic fields. It is pointed out that the research being done at the institute has great significance in solving a number of technical problems under Earth conditions and in mastering outer space. At this time the institute is working on the construction of a unique device consisting of a solar furnace with a concentrator diameter of 3 m and heliobarochambers. The three-meter concentrator of the projector type will be installed on a tower so that the optical axis is vertically downward. The solar radiation will be aimed at the concentrator by a heliostat. This heliostat will service the barochamber consisting of a projector type concentrator 1.5 mm in diameter and a chamber 1.5 m³ in volume manufactured from stainless steel. The barochamber can operate also as a radiation furnace.

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USSR

UDC: 621.317.757

GUREVICH, V. E., AGAPOV, G. V., ~~BORUKHOVICH, A. P.~~, DURETS, Ye. Ya., RABINOVICH, G. V., Leningrad Electrical Engineering Institute of Communications
imeni Professor M. A. Bonch-Bruyevich

"An Analyzer of the Correlation Characteristics of a Pulse-Code Signal"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 9, Mar 72, Author's Certificate No 331322, Division G, filed 6 Nov 69,
published 7 Mar 72, p 134

Translation: This Author's Certificate introduces: 1. An analyzer of the correlation characteristics of a pulse-code signal in systems for data transmission by uniform codes. The analyzer contains a controllable delay unit, a coincidence circuit, a source of synchronizing pulses and a pulse counter. As a distinguishing feature of the patent, the device is designed for separate measurement of the correlation factor of two signal trains spaced by the same time interval but located in different places of the code groups. Connected between the output of the coincidence circuit and the input of the pulse counter is an additional coincidence circuit whose controlling input is connected through an additional controllable delay unit to the

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GUREVICH, V. E. et al., USSR Author's Certificate No 331322

output of the source of synchronizing pulses. 2. A modification of this analyzer distinguished by the fact that the effect which the degree of channel loading has on the result is eliminated by connecting a silent signal code group recognition unit to the input of the device. The output of the recognition device is connected through a channel time separation device to the inputs of threshold channel accumulators of a predetermined number of pulses and to the inputs of channel coincidence circuits. The channel time separation device is controlled from the source of synchronizing pulses. The controlling inputs of the channel coincidence circuits are connected to the potential outputs of the corresponding channel accumulators, and the output signals from the coincidence circuits are fed to the input of the silent signal control group counter, the input of each channel accumulator being connected through an inverter to the reset circuit of this accumulator. The pulse outputs of the channel accumulators are connected to the input of the counter for the total number of silence intervals.

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USSR

UDC: 546.261:538.632:537.3

BORUKHOVICH, A. S., GEL'D, P. V., and STARTSEV, V. Ye.

"Galvanomagnetic Characteristics of Monocarbides of the IVa-Va Subgroup Transition Metals"

Tomsk, Izvestiya VUZ--Fizika, No 5, 1973, pp 142-145

Abstract: This brief communication discusses the results of measurement of the galvanomagnetic characteristics of monocarbides, which by composition are closely related to equiatomic varieties. It is noted that such an investigation, even in weak magnetic fields in which the ratio of the mean free path to the radius of the cyclotron orbit is less than unity, is important to establish a connection between these characteristics and those of the electronic structure computed for TiC, ZrC, and NbC. This, in turn, opens the possibility of qualitative interpretation of such kinetic behavior in monocarbides as the Hall effect and reluctance. The experimental data used by the authors for their analysis was obtained in research of the Hall effect and transverse reluctance in TiC_{0.99}, ZrC_{0.98}, NbC_{1.0}, and TaC_{0.98} specimens at 300 and 20.4° K temperatures and magnetic fields up to 22 kOersted. An explanation is found for the difference in Hall coefficients and reluctance values for these various specimens.

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Acc. Nr:

AP0046613

Abstracting Service:

CHEMICAL ABST

B 3/70

Ref. Code:

UR 0680

58607f Quantitative evaluation of the hot strength of brittle materials subjected to unsteady-state thermal action. Lanin, A. G.; Borunov, V. V.; Egorov, V. S.; Popov, V. P.; Tkachev, A. A. (USSR). *Termoproch. Mater. Konstr. Elem.* 1969, No. 5, 284-83 (Russ). A device is described for detn. of the hot strength of brittle refractories. The device enables samples of material to be heated rapidly to 1000° and cooled by plunging into an oil bath. The moment of rupture of the sample is detd. by a pressure-transducer, while the temp. field of the sample at the moment of rupture is calcd. from the boundary conditions.

Harry Watts

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UDC:532.529

BORUNOVA, E. P. and KOLERSKIY, S. V.

"On Problem of Determining Parameters of High-Dispersion Radioactive Aerosols"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 (11th All-Union Conference on Problems of Evaporation, Combustion and Gas Dynamics of Dispersion Systems, 1972), 1972, p 12 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2B1211)

Translation: Investigation was conducted on the possibility of using a set of diffusion batteries and electrostatic precipitators for a complex determination of the following integral parameters of high-dispersion and ultra-high-dispersion radioactive aerosols: ratio of charged and noncharged aerosols, mean diffusion coefficient of charged, noncharged and all aerosols, mean electric mobility of charged aerosols and mean number of elementary charges on one radioactive, charged aerosol particle.

1/2 Estimates were made of errors in determination of integral parameters,

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BORUNOVA, E. P. and KOLERSKIY, S. V., 11-ya Vses. Konf. po Vopr. Ispareniya, Gorennya i Gaz. Dinamiki Dispersn. Sistem, 1972, p 12

limits of their validity were calculated for the case of monodispersed aerosols, systematic errors due to polydispersion of aerosols were investigated. Integral parameters were measured of ultra-high-dispersion radioactive aerosols, which are decay products of radon fission occurring in dustless air of the closed chamber inside of which a radium source was placed. Integral parameters of ultra-high-dispersion aerosols of iodine-137 obtained from a iodine generator were also measured.

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Acc. Nr.

AP0025643

Abstracting Service:
CHEMICAL ABST. 3-70

Ref. Code

UR0062

B

43050v Reduction of aceto- and propiophenone in the presence of cobalt and nickel catalysts. Effect of poisons. Freidlin, L. Kh.; Borunova, N. V.; Danielova, S. S.; Nekrasov, A. S.; Gvinter, L. I. (Inst. Org. Khim. im. Zelinskogo, Moscow, USSR). *Izv. Akad. Nauk SSSR, Ser. Khim.* 1969, (10), 2290-5 (Russ). The products of redn. with H of AcPh and EtBz over Raney Co, Co-Al₂O₃, and Ni-Al₂O₃ catalysts were tabulated for a variety of exptl. conditions. The Co catalyst at 120° and up to 80 atm. caused hydrogenation of only the CO groups and no ring hydrogenation was observed. Over the Co catalyst, the resulting carbinols underwent some hydrogenolysis at the C-OH bond even at room temp., and almost total conversion to hydrocarbon took place in reactions run at 100° and 80 atm. With Ni-Al₂O₃ catalyst the redn. of the ketone CO group predominated along with hydrogenolysis of the C-OH bond, but hydrogenation of the ring also took place to an appreciable degree. The hydrogenation proper and hydrogenolysis proper evidently take place on different regions of the catalyst surface. Partial poisoning of the Co and Ni catalysts by 10% Cd almost totally suppressed the hydrogenolysis reactions. A similar effect was caused by added Pb.

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Thus, selective redn. of the ketone to the carbinol could be achieved. Hydrogenation of MePhCHOH over Ni-Al₂O₃ catalyst gave some 51.8% hydrocarbon products (mere contact with the catalyst in N atm. resulted in no change of the carbinol over this catalyst at 80° and 120 atm.). Methylcyclohexylcarbinol did not react at all under these conditions. G. M. Kosolapoff -

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USSR

BINYUKOV, V. I., et al., Biokhimiya, Vol 36, No 6, Nov/Dec 71, pp 1149-1155

temperatures suggest that high temperature induces conformational transformations in the protein fraction, and these induce structural transformations in the lipid fraction of bacterial membranes.

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(C) BIOLOGICAL ABSTRACTS/70 UR 0000

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10940. BORUSAS, S. Vliyane gibberellovoi i β -indoliluksusnoi kislot na azotnyi obmen lyupina v razlichnykh usloviyakh mineral'noye pitaniya. [The effect of gibberellic and β -indoleacetic acids on the nitrogen metabolism of lupine under different conditions of mineral nutrition.] NAUCH TR LITOV SEL'SKOKHOZ AKAD 14(3): 25-31. 1968. From: REF ZH OTD VYP RASTEMEVED, 1968, No. 11.53.393. (Translation)-In experiments with lupine in sand culture, there was no difference between GA and IAA with respect to their action on N metabolism. Different amounts of both IAA and GA had different effects on the N content of the plant leaves; large amounts led to more profound and prolonged changes. There was a direct connection between the action of GA and IAA on the N metabolism on the one hand and the level of NP nutrition of the lupine. In lupine grown on Hellriegel's medium with full amounts of N, P, and K, and under the action of GA and IAA, there was a reduction in the percentage content in the leaves of protein N and a rise in the content of nonprotein N. When the concentrations of N and P were increased in the nutrient medium, the growth substances caused a considerable rise in the percentage content of protein N and a corresponding reduction in the nonprotein N of the leaves.

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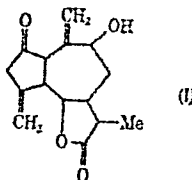
19730555

AP0019785 CHEMICAL ABST.

1/70

UR 0398

12898y Isolation of grosshemin from *Chartolepis intermedia*.
 Mukhametzhanov, M. N.; Sheichenko, V. I.; Rybalko, K. S.;
 Borvaev, K. I. (Vses. Inst. Lek. Rast. Bitisa, USSR). *Khim.
 Prir. Sverdln.* 1969, 5(3), 184-6 (Russ). From the H₂O-extr.
 of leaves, and flower calathides of *C. intermedia* was isolated
 grosshemin (I), m. 200-2°, [α]_D²⁰ 159.91° (c 1.14; CHCl₃).



Dehydrogenation of I over Se at 280-350° for 20 min, gave
 chamazulene, which was identified by thin-layer chromatog.
 Phys., chem., and uv, and ir spectral anal. established the struc-
 ture of I.

J. Smydzuk

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UDC: 539.4.620

BORZDYKA, A. M., Central Scientific Research Institute of Ferrous Metallurgy,
MOSCOW

"Effect of Repeated Loading on the Relaxation Stability of Heat-Resistant
Nickel-Chromium Alloy"

Kiev, Problemy Prochnosti, No 9, Sep 72, pp 53-55

Abstract: The author investigates the influence of cyclic stresses during relaxation on the relaxation resistance of grade KhN67W4TYu alloy. It is shown that the hardening action of repeated loading which is observed in the high-temperature region is insignificant at 60-70% of the melting point. It is concluded that such treatment is ineffective at relaxation softening temperatures.

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USSR

UDC 539.389.3

BOZDYKA, A. M., and GETSOV, L. B.

Relaksatsiya napryazheniy v metallakh i splavakh (Stress Relaxation in Metals and Alloys), Moscow, "Metallurgiya" Press, 1971, 304 p., illustrations, tables, graphs, bibliographic references, 3400 copies printed.

Translation of Annotation:

The book discusses stress relaxation in metals and alloys, methods for studying it, and the principal determining factors, including temperature, initial stress, time, and the size factor, as well as metal behavior under nonsteady-state conditions. Data are given on the effects of alloying on the relaxation resistance of steel and other construction materials. Described are newly developed conditions for the heat treatment of steel and alloys to ensure maximum relaxation resistance. The book is intended for engineering, technical, and scientific personnel of the metallurgical and machine building industries.

Translation of Table of Contents:

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USSR

BORZDYKA, A. M. and GETSOV, L. B., Relaksatsiya napryazheniy v metallakh i splavakh, Moscow, "Metallurgiya" Press, 1971

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USSR

BORZDYKA, A. M. and GETSOV, L. B., Relaksatsiya napryazheniy v metallakh i splavakh, Moscow, "Metallurgiya" Press, 1971

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USSR

BORZDYKA, A. M. and GETSOV, L. B., Relaksatsiya napryazheniy v metallakh i splavakh, Moscow, "Metallurgiya" Press, 1971

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4/4

Mechanical Properties

USSR

UDC 539.4

BORZDYKA, A. M., Moscow

"One Criterion for Long-Term Strength of Metals and Alloys"

Kiev, Problemy Prochnosti, No 4, Apr 71, pp 64-66

Abstract: It is suggested that the stress σ'' , corresponding to the transition of the process of creep from the second period to the third period, be used as a supplementary long-term strength criterion. It is established that the dependence between stress σ'' and time τ'' is similar to the dependence between rupture stress and time to rupture, in connection with which it seems possible to extrapolate the determination of σ'' to extremely long periods of time, exceeding the ordinary duration of creep tests. Curves of σ'' as a function of τ'' seem to be identical to "damage" curves. Based on analysis of a large number of primary creep curves, the expediency is demonstrated of determining the creep period ϵ'' , the elongation at the beginning of period III, as a characteristic of long-term plasticity.

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AT0017691

~~CHEMICAL ABST.~~ BORZDYKA A.M. UR M 0000

14954n Relaxation stability of austenitic steels and alloys in relation to alloying and structure. Borzdyka, A. M. (USSR). *Fiz.-Khim. Issled. Zharoproch. Splatov, Dokl. Nauch. Sess., 21st 1968, 118-27 (Russ)*. Edited by Ageev, N. V. Izd. "Nauka": Moscow, USSR. The effect was studied of alloying and structure on the relaxation stability in ferritic-martensitic and austenitic steels. Among ferritic-martensitic steels, a steel contg. Cr 12, and Mo 0.5 wt. % was mainly studied and the effect of addns. of V 0.5-1.0% (optimum 0.3-0.6%), W 0.5-4.0% (optimum $\leq 1.0\%$), and Nb to 0.7%. All these additives increase the resistance to relaxation at optimum levels; modifying with B (0.002-0-0.003%) increases this resistance still further. Among austenitic alloys, the ones on the basis of Fe-Cr-Ni were studied with 10-78% Ni, with and without the addn. of W, Mo, and Ti. The relaxation stability is primarily governed by the ratio of Ni/Fe. Among 7 tested steels, the steel with the highest relaxation stability was Kh15N25V4T (EP 164). Furthermore, complexly alloyed steels were studied and the best relaxation stability was shown by the 6 component (Ni-Cr-W-Mo-Ti-Al) alloy KhN65VMTYu (E1893) which contained the optimum amt. of the phase Ni₃(Ti,Al) (15-20%).

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BORZDYKA A.M.

Acc. Nr:

AFJ043722

Abstracting Service: **570**

Ref. Code:

INTERNAT. AEROSPACE ABST.

UR0370

A70-23785 # The softening temperature range under conditions of creep and stress relaxation (O temperaturnom intervale razuprochneniia v isloviakh polzuchesti i relaksatsii napriazhenii). A
M. Borzdyka. *Akademiia Nauk SSSR, Izvestiia, Metally*, Jan.-Feb. 1970, p. 119-122. 8 refs. In Russian.

Demonstration that softening of austenitic steels and alloys at high temperatures occurs considerably more intensely under conditions of stress relaxation than under conditions of creep. This situation is attributed to the fact that under conditions of stress relaxation the softening action of temperature is not offset by the hardening action of plastic deformation. It is noted, however, that at temperatures above six-tenths of the melting point this explanation is not entirely satisfactory.

A.B.K.

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UDC 669.15.24'26-194.620.178.156.4

BORZDYKA, A. M., and SVESHNIKOVA, G. A., Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Increasing the Relaxation Stability of Heat-Resistant Nickel-Chromium Alloys by the Method of Training"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 53-57

Abstract: The effect of repeated loadings (training) on the relaxation stability of KhN77TYu, KhN67VMTYu, and KhN62VMTYu at 750, 800, and 850°C was studied. The solid solution of the two last alloys was strengthened by a considerable amount of W and Mo. Each alloy was subjected to 3 loadings with 1-15 hour intervals at specified temperature. The obtained experimental data indicated that the relaxation stability of Ni-Cr alloys increases as a result of training. The residual relaxation stresses, σ_{1000} and σ_{3000} , of the KhN77TYu alloy increased by 15-25% after training at 750°C. Approximately the same increase of σ_{1000} and σ_{3000} was obtained for the remaining two alloys trained at 800°C. The alternation of stresses ($\sigma_0 \leq 0.8 \sigma_T$) at 750-850°C with relaxation periods, as well as the repeated loading of samples during the initial stage of experiments, did not change

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BORZDYKA, A. M., and SVESHNIKOVA, G. A., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 53-57

the structure of the alloy, which remained the same after the heat treatment. The method of training these alloys should be conducted at 750-800°C because higher temperatures are detrimental to their mechanical properties.

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- 71 -

Acc. Nr: **AA0037556**

Abstract
CHEMICAL

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Ref. Code:
UR0482

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B

58460c Melting metallic manganese. Vlasenko, V. E.;
Boitsov, L. I.; Zel'din, V. S.; Matvishenko, V. N.; Zaporoz-
hko, B. N.; Kozhushko, V. N.; Zakharchenko, G. F.; Zubov,
V. T.; Borzenko, V. K., U.S.S.R. 253,829 (Cl. C 21c), 07 Oct
1969, Appl. 22 Dec 1967; From *Otkrytiya, Izobret., Prom.*
Obraztsy, Tovarnye Znaki 1969, 46(31), 36. Metallic Mn is
melted in an elec. furnace in a charge contg. silicomanganese
while blowing compressor air through the bath to stir it. To
lower the consumption of elec. energy and reduce carburization,
blowing is carried on in raised electrodes without switching off the
furnace and the silicomanganese is fed into the furnace at the
moment of blowing. MSCL -

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USSR

UDC 669.71.053.4.094(088.8)

BORZENKO, V. V., ABRAMOV, V. YA., POLOVNIKOV, B. A.

"Discharge Unit"

USSR Author's Certificate No 276025, Filed 11 Jun 69, Published 6 Oct 70
(from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G146P)

Translation: A design is proposed for an unloading device for a tubular leacher made in the form of a single- or double-bucket elevator. To lower the removal of thin fractions of sludge with solution, the elevator bucket is equipped with a cylindrical chute, and a partition is installed in front of the bucket which does not reach to the bottom of the elevator barrel. There are 2 illustrations.

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USSR

UDC 669.183.4:621.745.4

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LESHCHENKO, I. P., TERESHCHENKO, V. T., MARTYNOV, O. V., TRAKHIMOVICH, V. I., and BORZENKOV, D. V., Tula Branch of Central Scientific Research Institute of Ferrous Metallurgy, Novo-Tula Metallurgical Plant

"Sponge Iron for Steel Melting Production"

Moscow, Metallurg, No 7, Jul 73, pp 20-22

Abstract: Investigations at the Novo-Tula Metallurgical Plant has revealed that iron ore concentrates with a maximum concentration degree must be used for the production of sponge iron suitable for remelting in steel melting aggregates. Factors which must be considered when using sponge iron in the capacity of raw material, burden, and substitute for steel scrap, are discussed. The increase of iron content in the iron ore concentrate at maximum reduction degree of 98% leads to the growth of metallic iron in the sponge according to

$$\Delta Fe_{met} = \frac{16\Delta Fe_{init}}{9.5}, \text{ where } \Delta Fe_{met} = \text{increase}$$

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LESCHENKO, I. P., et al., Metallurg, No 7, Jul 73, pp 20-22

of concentration of reduced metallic iron in sponge (in %), and ΔFe_{init} =increase of iron content in initial concentrate (in %). The iron sponge oxidation dependence in storage on the metallization degree is characterized by $\Delta O = 9.93 - 0.094 \rho$, where ΔO =oxidation concentration increase in sponge iron during storage (in %), and ρ =metallization degree of initial sponge (in %). The $\Delta \rho$ dependence on the storage time in open air is illustrated. Three figures, two tables.

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USSR

UDC:621.365.2+669.046.54/55

BORZENKOV, D. V., TRAKHIMOVICH, V. I., SHENDYAPIN, V. D., and KABLUKOVSKIY, A. F.

"Refining of Iron-Nickel Lump in Electric Furnaces"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 143-148

Translation: Data are presented on melting of a charge pig based on iron-nickel lump containing 2% nickel, up to 0.2% each phosphorous and sulfur in 5 T electric arc furnaces. The influence of the lump composition and technology of melting on the technical and economic indicators of melting is studied. The use of lump in melting high-quality steel with preliminary refining allows steel with low content of nonferrous impurities to be produced. 4 figures; 2 tables; 3 biblio. refs.

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- 21 -

USSR

UDC:621.365.2+669.046.54/55

BORZENKOV, D. V., TRAKHIMOVICH, V. I., SHENDYAPIN, V. D., and KABLUKOVSKIY, A. F.

"Refining of Iron-Nickel Lump in Electric Furnaces"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 143-148

Translation: Data are presented on melting of a charge pig based on iron-nickel lump containing 2% nickel, up to 0.2% each phosphorous and sulfur in 5 T electric arc furnaces. The influence of the lump composition and technology of melting on the technical and economic indicators of melting is studied. The use of lump in melting high quality steel with preliminary refining allows steel with low content of nonferrous impurities to be produced. 4 figures; 2 tables; 3 biblioc. refs.

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Acc. Nr.

AA0030655

Abstracting Service:
CHEMICAL ABST. 3-70

Ref. Code

UR0482


56500s Stabilization of rubbers. Borzenkova, A. Ya.; Korobova, A. F.; Rednikova, T. A.; Egidis, T. M. U.S.S.R. 251,820 (Cl. C 08d), 10 Sep 1969, Appl. 14 Mar 1968; From *Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki* 1969, 46(28), 72. Rubber based on unsatd. raw rubbers is protected from O₂ cracking with 2,6-bis(dimethylaminomethyl)-N-phenyl-p-aminophenol.

MSCL J

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REEL/FRAME

19690602

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1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--BERYLLIUM FLUORIDE YTTRIUM FLUORIDE SYSTEM AND A CROSS SECTION OF
THE POTASSIUM FLUORIDE BERYLLIUM FLUORIDE YTTRIUM FLUORIDE SYSTEM WITH
AUTHOR--(03)-BORZENKOVA, M.P., GALINA, V.N., NOVOSIOVA, A.V.
COUNTRY OF INFO--USSR **B**
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 25,30
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--BERYLLIUM COMPOUND, FLUORIDE, X RAY ANALYSIS, EUTECTIC,
YTTRIUM COMPOUND, POTASSIUM COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0925 STEP NO--UR/0363/70/006/001/0025/0030
CIRC ACCESSION NO--AP0118093
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118093

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

ABSTRACT. BASED ON THE RESULTS OF THE THERMAL AND X RAY PHASE ANALYSES THE CONSTITUTION DIAGRAM OF B SUBE F SUB2 MINUS YF SUB3 SYSTEM WAS CONSTRUCTED. IN PARTICULAR, THE SECTION OF THE TERNARY KF MINUS BEF SUB2 VF SUB3 SYSTEM WITH A CONST. (5 MOLE PERCENT) KF CONTENT WAS STUDIED. THE INTERACTION IN THE BEF SUB2 MINUS VF SUB3 SYSTEM HAS A EUTECTIC CHARACTER. THE BEF SUB2 IS PRESENT IN THE SYSTEM IN THE FORM OF A QUARTZ LIKE PHASE. THE EUTECTIC IS OBSD. AT 77.5 MOLE PERCENT BEF SUB2, THE REST BEING VF SUB3, WITH THE M.P. OF THE EUTECTIC BEING 500DEGREES. BY USING DTA METHODS, THE PRESENCE OF REVERSIBLE POLYMORPHIC TRANSFORMATIONS FOR THE FLUORIDES WAS OBSD. (AT 1052DEGREES FOR VF SUB3 AND AT 220DEGREES FOR QUARTZ LIKE BEF SUB2). INVESTIGATION OF MELTS OF THIS SYSTEM, ESP. IN THE BE RICH REGION, IS ASSOCD. WITH MANY EXPTL. DIFFICULTIES DUE TO THE VOLATILITY OF THE BEF SUB2 AT LESS THAN 800DEGREES AND THE VITRIFICATION IN THE SYSTEM, THE TENDENCY TOWARDS WHICH INCREASES WITH INCREASING BEF SUB2 CONTENT. PRIOR TO THE EXPTS., THE ALLOYS WERE ANNEALED AT 400DEGREES, SOMETIMES FOR 2-3 MONTHS. DUE TO THE VITRIFICATION IN THE SYSTEM, IT WAS IMPOSSIBLE TO CONSTRUCT THE PHASE DIAGRAM ON THE BASIS OF THE COOLING CURVES. CRYSTN. OF THE SYSTEM CAN BE INDOUCED BY ADDING KF. TO ENSURE EQUIL. IN SUCH A SYSTEM, LONG TERM ANNEALING (200-50 HR) AT 400DEGREES WAS REQUIRED. WHEN 5 MOLE PERCENT KF IS ADDED, THE FIELDS OF PRIMARY CRYSTN. IN THE SYSTEM REMAIN THE SAME. THREE FIELDS OF SECONDARY CRYSTN. ALSO WERE PRESENT. AT 300DEGREES THE TERNARY EUTECTIC BEF SUB2 (QUARTZ LIKE) PLUS BETA- VF SUB3 PLUS KBE SUB2 F SUB5 CRYSTALLIZES.

UNCLASSIFIED

Acc. Nr.

AP0034069

Abstracting Service:

CHEMICAL ABST. 3-70

Ref. Code

4R 0189

B

62475d Spectrophotometric study of the reaction of molybdenum with benzohydroxamic and salicylhydroxamic acids. Alimarin, I. P. ~~and~~ Berzanskaya, N. P. (USSR). *Vestn. Mosk. Univ., Khim.* 1969, 24(5), 85-9 (Russ). Mo(VI) forms with benzohydroxamic (I), or salicylhydroxamic (II) acids, in optimum 400-fold excess, at pH 1.2-3.6, sol. 1:2 complexes, which are suitable for the spectrophotometric detn. of Mo. Thus, absorbance max. and molar absorptivities (ϵ) of the complexes of Mo(VI) with I are 350 and 1.8×10^4 and with II 290 nm and 8.6×10^4 , resp. The absorbances of the complexes can be measured also at 390 nm ($\epsilon = 1.2 \times 10^4$). Zr, W, and Ta, 1000-fold amts.; Ti(IV) 100-fold, and Fe(III) and V(V), 10-fold, do not interfere with the Mo detn. U(VI), Ni(II), Co(II), Cu(II), and Nb(V) also do not interfere. E. Svatek

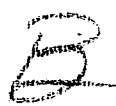
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REEL/FRAME

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19710712

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DEHYDROGENASES OF PLAGUE GERM -U-
AUTHOR-(02)-GOLUBINSKIY, YE.P., BORZENKOVA, V.I. 
COUNTRY OF INFO--USSR
SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 3, PP 276-280
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DEHYDROGENASE, PLAGUE, ENZYME ACTIVITY, ACETIC ACID

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0396 STEP NO--UR/0301/70/016/003/0276/0280
CIRC ACCESSION NO--AP0122576
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122576

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AIM OF THIS WORK IS THE STUDY OF SOME PROPERTIES OF PLAGUE GERM DEHYDROGENASES AND THEIR ORGANIZATION IN BACTERIAL CELL. IT WAS ESTABLISHED THAT MALATE DEHYDROGENASE AND ENZYMES REDUCING THE OXALOACETIC AND PYRUVIC ACIDS ARE SOLUBILIZED AFTER THE DISTRUCTION OF CELLS, AND THEIR ACTIVITY IS NAD DEPENDED. SUCCINATE AND LACTATE DEHYDROGENASE WERE TIGHTLY BOUNDED TO CELLULAR MEMBRANES. THESE ENZYMES AS WELL AS NAD H SUB2 AND NADP H SUB2 DEHYDROGENASES WERE ABLE TO DIRECT REDUCTION OF 2,6,DICHLOROPHENOLEINDOPHENOLE.
FACILITY: ANTI PLAGUE INSTITUTE, ROSTOV ON DON.

UNCLASSIFIED

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USSR

UDC 576.851.45.098.31:577.158

GOLUBINSKIY, Ye. P. and BORZENKOVA, V. I., Antiplague Institute, Rostov-na-Donu
"Pasteurella pestis Dehydrogenases"

Moscow, Voprosy Meditsinskoy Khimii, No 3, 1970, pp 276-280

Abstract: Cell-free enzyme preparations obtained from Pasteurella pestis cultures (strains EV and 17) were capable of dehydrogenating NAD-H₂, NADP-H₂, malic, succinic, and lactic acids, and reducing oxalic and pyruvic acids. The enzymes that catalyze the above reactions can be divided into two groups: (i) dehydrogenases dependent on pyridine cofactors, and (ii) dehydrogenases that directly reduce 2,6-dichlorophenol indophenol. Cultivation conditions are an important factor. For example, the activity of the enzymes that catalyzed the dehydrogenation of NAD-H₂ and NADP-H₂ increased when bacteria were cultured at 37°C. Under anaerobic conditions, the activity of the diaphorases and malic dehydrogenase also increased significantly.

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USSR

UDC 621.762.4.001

RAKOVSKIY, V. S., BORZETSOVSKAYA, K. M., OLENINA, N. S., and BOLOTINA, T. A.,
All-Union Institute of Light Alloys

"Hot Deformation of Titanium Cermet Blanks"

Kiev, Poroshkovaya Metallurgiya, No 1, Jan 73, pp 88-92

Abstract: The possibility of increasing the density of titanium cermet blanks using upsetting, forging, and extruding was studied. The different processes of using powder metallurgy in an attempt to achieve an absolute density were compared with the same processes using VT1-00 titanium alloy. Chemical contents of the alloy and powder used were as follows:

	C	Fe	Si	O ₂	N ₂	H	Others
PTEC-1 powder	0.01	0.06	0.01	0.07	0.02	0.002	0.10
VT1-00 alloy	0.05	0.20	0.08	0.10	0.04	0.008	0.10

It was established that molding of titanium powder at very high pressures (6-7 t/cm²), exceeding the yield strength of titanium, followed by vacuum sintering at 1100-1200°C does not yield a blank with 100% density. According to mechanical properties, these blanks, in view of a residual porosity of 1/2

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USSR

RAKOVSKIY, V. S., et al., Poroshkovaya Metallurgiya, No 1, Jan 73, pp 88-92

4-6%, substantially surpass cast and deformed titanium. In the study of increasing density of sintered titanium blanks by upsetting, forging, and extrusion, it was shown that use of a technological scheme, including cold molding and sintering with subsequent hot deformation, makes it possible to achieve a 100% density. The mechanical properties of the sintered samples were evaluated after hot deformation, and it was shown that their strength, ductility, and impact strength were close to that guaranteed by the technical specifications for VT1-00 alloy. 7 figures, 1 table.

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1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--COMPARATIVE CHARACTERISTICS OF SOME TYPES OF ANESTHESIA AFTER
ACTIVITY OF SERUM LACTATEDEHYDROGENASE ISOENZYMES -U-
AUTHOR-(05)-DANILENKO, M.V., BORZHIYEVSKIY, TS.K., BABLYAK, D.YE.,
KALINDVSKAYA, L.S., LUCHKO, A.S. **B**
COUNTRY OF INFO--USSR
SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 139-142
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANESTHESIA, LACTATE DEHYDROGENASE, STOMACH, SURGERY, LIVER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1699

STEP NO--UR/0475/70/000/004/0139/0142

CIRC ACCESSION NO--AP0129069

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSIGN NO--AP0129069

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LACTATEDEHYDROGENASE WAS STUDIED IN PATIENTS UNDERGOING GASTRIC RESECTION WITH THREE TYPES OF ANESTHESIA. IT WAS FOUND THAT ALTERATIONS OF TOTAL LACTATEDEHYDROGENASE INDEPENDENT OF THE FORM OF ANESTHESIA ARE CONNECTED WITH CHANGES OF ITS LIVER FRACTION. THE DYNAMICS OF LIVER LACTATEDEHYDROGENASE LARGELY DEPENDED ON THE ANESTHESIA TYPE. IN THIS RESPECT TRICHLOROETHYLENE PROVED MORE SPARING THAN CHLOROFORM AND CYCLOPROPROPANE. FACILITY:
L'VGVSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

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AP0020464 CHEMICAL ABST.

J-70 UR0070

25971s Statistical study of thin slip lines taken in pairs in lithium fluoride single crystals. Borzhkovskaya, V. M. (Fiz.-Tekh. Inst. Nizkikh Temp., Kharkov, USSR). *Kristallografiya* 1969, 14(5), 829-34 (Russ). Etched medium hard LiF single crystals were subjected to deformation by four-point bending under a max. stress of 600 g/mm² in the (110) and (110) slip planes. Deformation shifts were fixed by repeated etching. A statistical correlation was found between sites of dislocation apertures in the slip lines. It can be explained by elastic interaction between dislocation or by the fixing of dislocation apertures on some centers, the size of which should not exceed 1 μ. M. Skala

19620409

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ELECTRICAL ENGINEERING
Cryogenics & Superconductivity

USSR

UDC 621.313.2:537.312.62.003

BAYLOVA, L. I., BORZOV, G. G.

"Efficiency of DC Electric Motors Using Superconductors"

V sb. Vopr. primeneniya sverkh nizh. temperatur v elektrotekhn. (Problems of Using Superlow Temperatures in Electrical Engineering -- collection of works), Leningrad, Nauka, 1971, pp 25-32 (from RZh-Elektrotekhnika i energetika, No 4, Apr 72, Abstract No 4I16)

Translation: The power range in which DC electric motors with cryogenic cooling are more efficient than motors of ordinary execution is defined. Unipolar and collector electric motors with cryogenic cooling are compared. It is demonstrated that beginning with a power of 60 kilowatts, the efficiency of the collector electric motor with cryogenic cooling is higher than that of the motor of ordinary execution. For motors of limiting power, this difference reaches 3%. The specific weight can be five times lower in this case. Unipolar electric motors with cryogenic cooling are more efficient than collector motors: their efficiency is 2% higher, and their specific volume is half as much throughout the entire investigated power range. There are 5 illustrations and a 9-entry bibliography.

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USSR

UDC: [621.313.3.013+621.3.045.3:537.312.62.]001

BORZOV, G. G., SOLNYSHKIN, N. I., Leningrad

"Calculating the Magnetic Field of Superconducting Coils of Saddle Shape With Ferromagnetic Shield"

Moscow, Izv. AN SSSR: Energetika i Transport, No 4, Jul/Aug 72, pp 77-80

Abstract: An algorithm is proposed for solving the three-dimensional nonlinear problem based on the method of calculating magnetic eddy fields by means of a scalar magnetic potential in combination with expansion of current sources into their spatial harmonics. The paper presents the results of calculation of the induction and magnetic flux in the armature of a cryogenic machine with ferromagnetic shield; the program for calculating these parameters was compiled on the basis of the proposed algorithm. The computational data are compared with experimental results.

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USSR

UDC: [621.313.322-81:537.312.62]001.24

~~BORZOV, G. G.~~, GLEBOV, I. A., GNEDIN, L. P., DOMBROVSKIY, V. V., NOVITSKIY, V. G., SHAKHTARIN, V. N., Leningrad

"Problems in the Development of High-Power Turbogenerators With Superconductive Field Windings"

Moscow, Izv. AN SSSR: Energetika i Transport, No 4, Jul/Aug 72, pp 21-28

Abstract: The authors point out the advantages of cryogenic turbogenerators over conventional units. Elements of construction of high powered cryogenic turbogenerators are described, and the results of model tests are presented. The analysis shows that using superconductors in the field windings increases the unit power of turbogenerators by an order of magnitude. The results of experimental studies confirm the feasibility of a synchronous machine with rotating cryostat that has low liquid helium evaporability and provides torque transfer. The realization of high-power cryogenic turbogenerators must wait for a great deal of research on development of new materials, structural and refrigeration units, and automatic monitoring and control systems.

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USSR

UDC 621.311.6

BORZOV, G. G., and SHAKHTARIN, V. N.

"Power Supply for Superconducting Magnetic Systems"

V sb. Nekotoryye vopr. issled. gazorazryach. plasmy i sozdaniya sil'nykh magnitn. poley (Some Problems of the Study of Gas-Discharge Plasma and the Creation of Strong Magnetic Fields -- collection of works), Leningrad, "Nauka," 1970, pp 148-153 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5B499)

Translation: Some circuits for the power supply of superconducting magnetic systems are considered. As a function of the goal and the operating conditions, it is recommended that storage batteries, connected through a transistor, multiphase rectifiers, thermogenerators, and induction power supplies be used. 3 ill. 7 ref.

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- 9 -

USSR

UDC 616.5-022.6-085.339:576.858.095.383

BORZOV, M. V., KUZNETSOV, V. P., and LOBANOVSKIY, G. I., Chair of Skin and Venereal Diseases, Odessa Medical Institute and Department of Interferon Synthesis, Institute of Microbiology and Epidemiology imeni N. F. Gamaleya, Moscow

"Use of Interferon in the Treatment and Prevention of Viral Dermatoses"

Moscow, Vestnik Dermatologii i Venerologii, No 9, 1971, pp 14-17

Abstract: Good results were obtained from using interferon to treat 203 patients (5 to 70 years of age) with various viral dermatoses. Instead of lotions, ointments, etc. containing interferon, these three methods were used: (a) superficial traumatization of the skin with interferon applied to warts, papillomas, and some condylomas; (b) injection of a solution of interferon (1000 units in 1 ml of sterile distilled water) into the affected tissues in the case of herpes simplex, warts, and molluscum contagiosum; (c) iontophoresis for various forms of dermatoses. The particular mode of treatment was chosen in relation to the dermatosis, its site, and age of the patient. There were no side effects and recurrences were comparatively few.

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- 44 -

USSR

UDC: 531.1

BORZOV, V. I., Moscow

"The Systematic Drift of a Gyroscope With a Synchronous Motor"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 4, Jul-Aug 73, pp 111-118

Abstract: The author studies the problem associated with the effect of the parameters of a synchronous motor on the systematic drift of a balanced gyroscope in a Cardan suspension on a fixed base. A formula is obtained which determines the rate of systematic drift as a function of the parameters of the system. The effect of the damping moments acting along the axes of the Cardan suspension frames and the axes of the gyroscope rotor is not considered since the motion is studied in a finite time interval. The motion equations are given.

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AP0017958 - CHEMICAL ABST.

1170 21R0368

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18144w Atomic-absorption analysis of liquids and solids by vaporizing samples in the flame of a graphite oven and measuring integral absorption. Borzov, V. P.; L'vov, B. V.; Plyushch, G. V. (USSR). *Zh. Prikl. Spektrosk.* 1969, 11(2), 211-20 (Russ). The method for vaporizing samples proposed by B. V. L'vov (1968) was further improved. The samples of about 5 mg were introduced into a crater bored in the sidewall of a spectrographic graphite rod of 6-mm diam. The rod was fastened horizontally in the center of an air-C₂H₂ flame, and its ends were attached to an a.c. source (0-200 A). A 2-3 mm diam. monochromatic light beam was adjusted 1-2 mm above the crater contg. the sample. For analyzing solns. the crater was impregnated previously with a drop of C₆H₆ contg. polystyrene. Solid samples were dild. with graphite powder. The flame and the elec. heating of the rod were adjusted simultaneously with the recording of the at. absorption versus time. The areas of 80 peaks, estd. by weighing, were proportional to the concn. of the detd. element. Thus, Cu at 3248, and Mn at 2795 Å were detd. with sensitivities of 3.6×10^{-10} and 2.2×10^{-10} g, resp. The variance of the detn. was 5% for solns., and 10% for solids.

E. Svatek

19601442

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1/2 030 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SODIUM AND POTASSIUM HYDROXYTTRATES -U-
AUTHOR--(04)-IVANOVEMIN, B.N., BORZOVA, L.D., MALYUGINA, S.G., ZAYTSEV,
B.YE.
COUNTRY OF INFO--USSR *B*
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 666-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, THERMAL DECOMPOSITION, IR SPECTRUM,
SPECTROSCOPIC ANALYSIS, SODIUM COMPOUND, POTASSIUM COMPOUND, YTTRIUM
COMPOUND, HYDROXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1882 STEP NO--UR/0038/70/015/003/0666/0669
CIRC ACCESSION NO--AP0115701
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0115701

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

ABSTRACT. M SUB3 (Y(OH) SUB6) (M EQUALS NA OR K) WERE SYNTHESIZED IN MEQH SOLNS. THERMAL DECOMP. OF M SUB3(Y(OH) SUB6) PROCEEDED VIA 2 ENDOTHERMAL EFFECTS, CORRESPONDING TO A CONVERSION OF (Y(OH) SUB6) PRIME3 NEGATIVE TO (Y(OH) SUB4) PRIME NEGATIVE AND TO A SUBSEQUENT DEHYDRATION AND FORMATION OF YO SUB2 PRIME NEGATIVE. THE IR SPECTRUM OF NA SUB3 (Y(OH) SUB6) IS GIVEN. FACILITY: UNIV. DRUZHBY NAR. IM. LUMUMBY, MOSCOW, USSR.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INFLUENCE OF THE SOLUBILITY OF TABLETED SUBSTANCES ON THE
EFFECTIVENESS OF THE DISINTEGRATING ABILITY OF STARCH -U-
AUTHOR--(04)-SHTEYNGART, M.V., OSIPOVA, I.O., NOSOVITSKAYA, S.A., BORZUNOV,
YE.YE.
CCOUNTRY OF INFO--USSR
SOURCE--FARMATSIYA (MOSCOW) 1970, 19(1), 17-20
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DRUG INDUSTRY, STARCH, SOLUBILITY, AQUEOUS SOLUTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0171 STEP NO--UR/0466/70/019/001/0017/0020
CIRC ACCESSION NO--AP0119167
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119167

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN COMPARATIVE INVESTIGATIONS IT WAS SHOWN THAT TABLETS PREPD. FROM VARIOUS DRUGS WITH STARCH SHOW DIFFERENT DISINTEGRATION RATES, WHEN IMMERSSED IN WATER. TABLETS WITH WATER INSOL. DRUGS DISINTEGRATE WELL AND QUICKLY. WATER SOL. DRUGS FORM MORE DURABLE TABLETS WITH STARCH, APPARENTLY BECAUSE OF THE DIMINISHING SORPTION CAPACITY OF STARCH. TABLETS OF STARCH WITH SUBSTANCES CAUSING GLUEING OF STARCH (IODIDES, CHLORIDES, BROMIDES, BENZOATES), DISINTEGRATE POORLY. TO FORM TABLETS FROM WATER SOL. AND STARCH GLUEING SUBSTANCES, NO STARCH SHOULD BE USED. FACILITY: KHAR'KOV. NAUCH.-ISSLED KHIM. FARM. INST., HARKOV, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--HYDROPHILIZATION OF MEDICINAL POWDERS IN TABLET MANUFACTURE -U-
AUTHOR--(02)-BORZUNOV, YE.YE., SHEVCHENKO, S.M.
COUNTRY OF INFO--USSR
SOURCE--FARM. ZH. (KIEV) 1970, 25(1), 60-2
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY
TOPIC TAGS--DRUG ANALYSIS, SURFACTANT, TITRATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0666 STEP NO--UR/0491/70/025/001/0060/0062
CIRC ACCESSION NO--AP0131271
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0131271

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TITRN. PROCEDURE, DEVELOPED BY RITCHELL AND RAHMAN (1964), WAS EMPLOYED FOR THE DETN. OF THE MIN. AMT. OF TWEEN 80 AND POLY(OXYSTEARATE) 40 REQUIRED FOR COMPLETE HYDROPHILIZATION OF A POWDER. POWDERS CONTG. 15 DRUGS WERE EXAMD. AND THE RESULTS WERE TABULATED. THE MIN. AMT. OF TWEEN 80 RANGED FROM 0.07 TO 3.85PERCENT FOR POWDERS CONTG. PHTHIVAZID AND PHENOBARBITAL, RESP. FOR POLY(OXYSTEARATE) 40 THE EXTREME FIGURES WERE 0.07 (PHTHIVAZID) AND 1.5 (SULFADIMEZINE). THE DIFFERENCES ARE INTERPRETED IN TERMS OF VARIOUS HLB (HYDROPHILIC LIPOPHILIC BALANCE) VALUES OF THE SURFACE ACTIVE AGENTS, DIFFERENT HYDROPHOBICITY OF POWDERS, AND DIFFERENT GRAIN SIZE OF POWDER PARTICLES. FACILITY: KHARKOV SCI. RES. CHEM. PHARM. INST., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 536.212.2.083

BORZYAK, A. N., LEPESHKIN, YU. D., and KUVSHINOV, G. A.

"An Experimental Device for Measuring the Thermal Conductivity of Metals and Alloys at Low Temperatures"

Moscow, Teplofiz. svoystva veshchestv pri nizk. temperaturakh -- sb. (Thermophysical Properties of Substances at Low Temperatures -- Collection of Works), 1972, pp 159-162 (from Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika, No 2, 1973, Abstract No 2.32.979 by V. S. K.

Translation: The authors describe a device for measuring the thermal conductivity coefficient of metal samples by the steady-state heat flow method. The device is a metallic helium cryostat containing a chamber for the sample in which the sample is mounted on a metal block suspended from the top of the chamber. A heater is fastened to the bottom end of the sample, which is surrounded by a protective cylinder to eliminate radiation losses of heat from the surface. The temperature along the sample is measured by thermocouples or semiconductor resistance thermometers. In order to maintain the necessary thermal state in the sample, four independent automatic temperature control systems are used, giving a control accuracy of approximately 10^{-2} K. Measurement accuracy is 2.5-3 percent. (2 illustrations; 3 bibliog. ref.)
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AP9018449

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UR/0076

99945s Adsorbate-adsorbate interactions during the adsorption of xenon by LiX and NaX zeolites. Aristov, B. G.; ~~Bosacki, Vladimir~~ Kiselev, A. V. (Inst. Fiz. Khim., Moscow, USSR). *Zh. Fiz. Khim.* 1969, 43(2), 292-8 (Russ). Exptl. isotherms of Xe adsorption by crystals of the zeolites LiX and NaX at various temps. are described well by simple equations of the isotherms of nonlocalized and localized adsorption which approx. allow for the interaction of the adsorbed mols. among themselves. The capacity of the monolayer (a_m) was taken in such a way that the isotherms were most exactly described up to $\theta \approx 0.5-0.7$, where θ is the degree of coverage of the adsorbent surface. Straight lines in adsorption on LiX were observed with $a_m = 6.2$ millimoles/g., on NaX with $a_m = 5.3$ millimoles/g. at all temps. studied. Equations were also derived for the isosteric heats of adsorption at various values of adsorption. The equations make it possible to extrapolate the differential heats of adsorption to $\theta = 0$, i.e. to find values that cannot be detd. by expt. The equations for detg. the isotherms of Xe adsorption on LiX and NaX can thus be used for calcg. the adsorption at various temps. L. Holl

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AP0021729 - CHEMICAL ABST. 2-70

UR0064

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- 22945a Prevention of foaming in the production of caustic soda by the lime method. Bosenko, I. I.; Postoronko, A. I. (USSR). *Khim. Prom. (Moscow)* 1969, 45(10), 784 (Russ). In the production of NaOH by the lime method, foaming occurs because of penetration of air through leaks in the pumping system; the foam is stabilized by soaps formed from the lubricating oils and greases that contaminate the solns. Foaming may be prevented by adequate sealing of the pumping system, or by the addn. of light hydrocarbons or ethers, or by the use of compressed air to destroy the foam, or by boiling the solns. during the reaction.

A. Aladjem ✓

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Acc. Nr:

AA0046997

Abstracting Service:
GEOPHYSICAL ABST.

5/70 UR 0482

Ref. Code:

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91819z Preparation of caustic soda. ~~Bosenko, I. I.; Shkol'-~~
~~nik, I. I.~~ U.S.S.R. 255,926 (Cl. C 01d), 04 Nov 1969, Appl. 24
Jun 1967; From *Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye*
Znaki 1969, 46(34), 15. Caustic soda is prepd. by treating Na-
CO₃ with milk of lime, concg. the soln., and sepg. the impurities
that are pptd. out. To decrease soda losses, the pptd. impurities
are dissolved and carbonated at 65-70° to form NaHCO₃ which
is then converted into Na₂CO₃ and recycled. MSCL

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1/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THE CHARACTERISTICS OF STRUCTURE OF EDENTULOUS MAXILLA -U-

AUTHOR--BOSHERNITSAN, I.L.

COUNTRY OF INFO--USSR

SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 3, PP 52-55

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MAXILLA, BIOLOGIC MODEL, DENTAL EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0205

STEP NO--UR/0511/70/049/003/0052/0055

CIRC ACCESSION NO--AP0120903

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120903

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY. EDENTULOUS MAXILLAE WERE INVESTIGATED ON PLASTER OF PARIS MODELS; 536 MODELS WERE MEASURED. THE MAXILLAE VARY GREATLY IN SIZE: BY THE LATTER THEY WERE DISTRIBUTED INTO FIVE GROUPS. A STUDY OF THE VESTIBULAR INCLUDE OF THE ALVEOLAR PROCESS TWO FORMS WERE ESTABLISHED: SLOPED (33.3PERCENT) AND CURVED (66.7PERCENT). A REGULAR FORM OF ATROPHY OF THE ALVEOLAR PROCESS WAS ENCOUNTERED IN 7.3PERCENT, AN IRREGULAR, IN 92.7PERCENT OF CASES. THE ABOVE MENTIONED INVESTIGATIONS MAKE IT POSSIBLE TO DETERMINE THE AVERAGE SIZE AND FORM OF STANDARD IMPRESSION SPOONS. FACILITY: KAFEDRA ORTOPEDICHESKOY STOMATOLOGII KIEVSKOGO INSTITUTA USOVERSHENSTVOVANIYA VRACHEY.

UNCLASSIFIED

USSR

UDC 543.42.001.4

BOSHRNYAK, B. M., ZHIGLINSKIY, A. G., and PRESNUKHINA, I. P.

"Investigation of a Pulse Light Source With a Hollow Cathode"

V So "VII Ural'sk. Konf. po Spektroskopii, 1971. Vyp. 1" [In the Collection "Seventh Ural Conference on Spectroscopy, 1971. No 1".], Sverdlovsk, 1971, pp 19-21 (from Referativnyy Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.991 by V. S. K.)

Translation: The installation diagram with a pulsed hollow cathode is presented and the conditions of the separation by time of the admission processes into the discharge of atoms of the cathode material and their excitations are determined. The optical part of the installation consists of the ISP-51 monochromator crossed with the Fabry-Perotetalon. The registration of the emission is carried out photoelectrically by means of synchronous detection. The investigation of the separation of the processes of excitation and admission of atoms into the discharge was carried out on the Cu 1 578.2 nm line, emitted by plasma in the cooled copper hollow cathode. Spectrally pure neon at 0.5-0.7 mm Hg pressure was used as discharge carrier. Two illustr., four biblio. refs.

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Veterinary Medicine

USSR

UDC 614.9-084.48

POLYAKOV, A. A., TRZHETSETSKAYA, T. A., BOSH'YAN, G. M., PRESNOV, I. N.,
IVANOVA, V. I., TARAKANOV, Yu. I., SMIRNOV, A. M., KULIKOVSKIY, A. V. SHUVAYEVA,
O. N., and DMITRIYEVA, T. A., All Union Scientific Research Institute of
Veterinary Sanitation, Moscow

"Advances in the Disinfection of Objects Associated With Livestock Raising"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971,
pp 20-24

Abstracts: An outline is given of the results of recent research conducted by the All Union Scientific Research Institute of Veterinary Sanitation. Some of the practical and theoretical accomplishments are: (a) synthesis of 5 disinfectants (caspos, demp, molaran, gudronol, hypochlor); (b) electron microscope study of the effects of different classes of disinfectants (alkalies, acids, chlorine preparations) on bacterial cells (E. coli, Salmonella, Staphylococci) (c) discovery that soil can be completely or partly disinfected by growing timothy and sweet clover; (d) development of methods for disinfecting wool and hides by means of gases (ethylene oxide, methyl bromide); and (e) successful testing of various gases (ethylene oxide, methyl bromide, war gases) and gamma rays to combat some bee diseases (foulbrood, nosema disease, Isle of Wight disease) found in hives.

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USSR

B

UDC 661.718.1:637.1

BOSH'YAN, G. M., and ROMINA, L. I., All-Union Scientific Research
Institute of Veterinary Sanitation

"Photometric Determination of Residual Trichlorometaphos-3 in Cow
Milk"

Moscow, Khimiya v Sel'skom Khozyaystve, No 8, 69, pp 57-59

Abstract: The treatment of animals with organophosphorus chemical poisons and the accumulation of residual amounts of these chemicals in the organs and tissues of the animals may constitute a hazard. The timely detection and quantitative determination of the chemicals in milk, meat, and other food products assumes a new importance. A photometric method which uses the color reaction of 2, 4, 5-trichlorophenol formed in the hydrolysis of trichlorometaphos-3 and with 4-aminoantipyrine is described. The procedure involves the use of a PEK-M photoelectrocolorimeter, a vacuum distillation unit, an oil pump, a water bath, and other laboratory equipment. The method makes it possible to control the content of trichlorometaphos-3 in milk, the periods of its accumulation and discharge with the milk under various conditions of treatment. Trichlorometaphos-3
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BOSH'YAN, G. M., et al, Khimiya v Sel'skom Khozyaystve, No 8, 69, pp 57-59

appears in the milk within the first several hours after treatment with it, and the maximum amount is secreted after 12-24 hrs. Subsequently the content of the chemical in the milk drops. Upon peroral treatment, the secretion of the insecticide is completely terminated after 240 hr, but when sprayed it is terminated after 216 hr. The secretion of the insecticide is pulse-like. The greater the amount introduced, the higher the maximum of discharge and the more compressed the discharge time. A repeated appearance of the insecticide in the milk in a relatively greater amount is explained by the fact that some of it is deposited in the liver. After partial secretion with the bile, it appears again in the digestive tract from where it is absorbed by the blood and discharged with the milk again.

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- 106 -

1/2 029 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THEORETICAL PRINCIPLES OF RAILROAD AUTOMATION AND TELEMECHANICS.
SECOND EDITION, REVISED AND SUPPLEMENTED. TEXTBOOK FOR STUDENTS OF
AUTHOR--(05)-BRYLEYEV, A.M., BOSIN, M.I., PEREBOROV, A.S., SKIRNOVA, A.V.,
EYLER, A.A. B
COUNTRY OF INFO--USSR
SOURCE--TEORETICHESKIYE OSNOVY ZHELEZNODOROZHNOY AVTOMATIKI I
REFERENCE--REFERATIVNYY ZHURNAL AVTOMATIKA, NTELEMEKHANIKA I VYCHISLITEL'
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, ELECTRONICS AND
ELECTRICAL ENGR.
TOPIC TAGS--AUTOMATION, TELEMETRY EQUIPMENT, RAILWAY TRANSPORTATION,
MONOGRAPH, TRANSDUCER, ELECTRIC RELAY, RELIABILITY, COMMUNICATION SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3001/0778

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

CIRC ACCESSION NO--AR0126469

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AR0126469

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

ABSTRACT. THIS TEXTBOOK CONSISTS OF 23 CHAPTERS. 1. GENERAL CHARACTERISTICS, INDICATORS AND REQUIREMENTS PLACED ON AUTOMATION, TELEMECHANICS, AND COMMUNICATIONS ELEMENTS. 2. TRANSDUCERS. 3. TYPES OF RELAYS AND THEIR ACTUATING PARTS. 4. ELECTROMAGNETIC DC RELAYS. 5. TRANSIENT PROCESSES IN ELECTRO MAGNETIC RELAYS. 6. POLARIZED RELAYS. 7. AC RELAYS. 8. MAGNETIC ELEMENTS. 9. LOGICAL CONTACTLESS ELEMENTS. 10. BOOLEAN ALGEBRA. SYNTHESIS OF COMBINATION AUTOMATA. 11. SYNTHESIS OF FINITE AUTOMATA. 12. PRINCIPLES OF SELECTION. 13. PRINCIPAL UNITS OF TELEMECHANICAL SYSTEMS. 14. PROBLEMS OF INTERFERENCE STABILITY IN REMOTE CONTROL AND REMOTE SIGNALLING SYSTEMS. 15. TELEMETRY. 16. TYPES OF AUTOMATION. 17. PRINCIPLES OF AUTOMATIC CONTROL. 18. STATIC CHARACTERISTICS OF LINEAR ELEMENTS AND SYSTEMS. 19. DYNAMICS OF LINEAR AUTOMATIC CONTROL SYSTEMS. 20. EQUATIONS OF COMPONENTS AND AUTOMATIC CONTROL SYSTEMS. 21. STABILITY. 22. SYNCHRONOUS COMMUNICATIONS SYSTEMS. 23. RELIABILITY OF ELEMENTS AND SYSTEMS OF RAILROAD AUTOMATION AND TELEMECHANICS. 254 ILLUSTRATIONS, 61 TABLES.

UNCLASSIFIED

USSR

B

UDC 656.25.001(047)

BRYLEYEV, A. M., BOSIN, M. I., PEREBOROV, A. S., SMIRNOVA, A. V.,
EYLER, A. A.

"Theoretical Principles of Railroad Automation and Telemechanics.
Second Edition, Revised and Supplemented. Textbook for Students of
Railroad Transport Institutes"

Teoreticheskiye Osnovy Zheleznodorozhnoy Avtomatiki I Telemekhaniki
(English version above) (from Referativnyy Zhurnal Avtomatika, Tele-
mekhanika I Vychislitel'naya Tekhnika, No 2, 1970, Abstract No 2A652K
by I. Sh.)

Translation: This textbook consists of 23 chapters. 1. General
characteristics, indicators and requirements placed on automation,
telemechanics, and communications elements. 2. Transducers. 3.
Types of relays and their actuating parts. 4. Electromagnetic DC
relyas. 5. Transient processes in electro-magnetic relays. 6. Polar-
ized relays. 7. AC relays. 8. Magnetic elements. 9. Logical
contactless elemnts. 10. Boolean algebra. Synthesis of combination
automata. 11. Synthesis of finite automata. 12. Principles of
selection. 13. Principal units of telemechanical systems. 14. Pro-
blems of interference stability in remote control and remote signalling
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USSR

BRYLEYEV, A. M., et al., Teoreticheskiye Osnovy Zheleznodorozhnoy Avtomatiki I Telemekhaniki (from Referativnyy Zhurnal Avtomatika, Telemekhanika I Vychislitel'naya Tekhnika, No 2, 1970, Abstract No 2A652K by I. Sh.)

systems. 15. Telemetry. 16. Types of automation. 17. Principles of automatic control. 18. Static characteristics of linear elements and systems. 19. Dynamics of linear automatic control systems. 20. Equations of components and automatic control systems. 21. Stability. 22. Synchronous communications systems. 23. Reliability of elements and systems of railroad automation and telemechanics. 254 illustrations, 61 tables.

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USSR

UDC 577.4

KARAGODOVA, YE. A., MITSMAKHER, YU. D., ~~BOGOMOLOV~~ BOSIS, A. I., SHIBRIK, L. V.

"An Algorithm for Optimal Distribution of Resources"

Vychisl. i prikl. mat. Mezhd. nauch. sb. (Computation and Applied Mathematics. Interdepartmental Scientific Collection), 1972, vyp. 16, pp 99-103 (from EZh-Kibernetika, No 7, Jul 72, Abstract No 7V516)

Translation: A version of the R. Bellman method is discussed for optimizing the distribution of limited resources of a specialized construction organization. The computation flow chart of the algorithm and an example are presented.

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USSR

UDC 669.71.018.9

AL'TMAN, M. B., BOSOV, A. M., and ZHUKOV, V. D.

"On the Relationship of Hydrogen With Oxides in Aluminum Alloys"

Tekhnol. legkikh splavov. Nauchno-tekhn. byul. VILSa (Technology of Light Alloys. Scientific and Technical Bulletin of All-Union Institute of Light Alloys), 1970, No 3, pp 12-15 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 G237 by G. SVODTSEVA)

Translation: In order to ascertain the relationship between hydrogen and oxides, experiments were conducted relating to the saturation of AMg6 alloy with tritium from water vapor. After vacuum evaporation of a melt oxides are so distributed that the lower layers of the melt are enriched therewith to a greater degree and the upper layers to a lesser degree, while the center portion contains the least quantity thereof. Hydrogen can segregate not only in the upper but also in the lower layers. The amount of hydrogen in AMg6 alloy in the dissolved state is 20-30% of total hydrogen content. The remainder of the hydrogen occurs in the melt in the form of a gaseous "emulsion" consisting of conglomerates of oxides and a bubble with a radius $\sim 3.1 \cdot 10^{-3}$ cm. Bibliography of four titles.

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