

AA0040638

AUTHORS: Korobov, I. I.; and Korobov, V. I.

Dnepropetrovskiy Metallurgicheskiy Institut

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UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--THICKNESS MEASUREMENT OF SINGLE AND TWO LAYER DIELECTRIC COATING
BASED ON SI DIOXIDE AND NITRIDE BY I.R. SPECTROSCOPY -U-

AUTHOR-(03)-KOLTSOVA, N.G., KOLTSOV, YU.I., KOROBOV, I.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKLAD. SPEKTROSK (USSR), VOL. 12, NO. 4, P. 752-4, APRIL
1970

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, METHODS AND EQUIPMENT, MATERIALS

TOPIC TAGS--NONDESTRUCTIVE TEST, DIELECTRIC COATING, THICKNESS GAGE,
SILICON DIOXIDE, SILICON NITRIDE, IR SPECTROSCOPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3006/1821

STEP NO--UR/0368/70/012/004/0152/0754

CIRC ACCESSION NO--AP0135306

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135386

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD ENSURE NONDESTRUCTIVE TESTING OF DIELECTRIC FILMS, AND IS BASED ON THE APPLICATION OF LAMBERT BEER LAW. MAXIMUM ABSORPTION OF SiO_2 COATING CORRESPONDS TO 1080 CM NEGATIVE $\bar{\nu}$, WHILE FOR Si_3N_4 IT IS 850 CM NEGATIVE $\bar{\nu}$. THE ABOVE ARE DUE TO ANTISYMMETRIC STRETCH VIBRATIONS OF $Si-O-Si$ AND $Si-N-Si$ GROUPS. THE EXPERIMENTAL RESULTS INDICATING THICKNESS, OPTICAL DENSITY AND ABSORPTION COEFFICIENT FOR THE TWO TYPES OF FILMS ARE TABULATED.

UNCLASSIFIED

USSR

UDC 669.71.472

DERKACH, A. S., DMITRIYEV, A. A., KOROBV, M. A., KOMERS, YE. G., KULAKOV, A. I.,
TSYPLAKOV, A. M.

"Improving the Design of Aluminum Electrolyzers"

Tr. Vses. n.-i. i proyekt. in-ta alyumin., magn. i elektrodn. prom-sti
(Works of the All-Union Scientific Research and Planning and Design Institute
of Aluminum, Magnesium and Electrode Industry), 1970, No 71, pp 29-36 (from
RZh-Metallurgiya, No 4, Apr 71, Abstract No 46165)

Translation: A description of improvements of electrolyzers of various types is presented. In the last 10-15 years, electrolyzers with a side current lead-in have been modified significantly. Work has been started on creating powerful models for a current strength of 130 kiloamps. Since the first series of electrolyzers with top lead-in were put into operation, significant changes have been introduced into their structural design. These changes have promoted improvement of the technical and economic indexes. Operations have developed with respect to selecting the optimal parameters of powerful electrolyzers with roasted anodes. Electrolyzers of the given type for a current strength of 130 kiloamps are being tested successfully. For further improvement

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DERKACH, A. S., et al., Tr. Vses. n.-i. proyekt. in-ta alumin., magn. i elek-
trodn. prom-sti, 1970, No 71, pp 29-36

of the design of electrolyzers of all three types, new ideas are needed based on theoretical research and the search for new, more efficient structural designs of the basic assemblies and baths, and creation of effective means of mechanization.

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USSR

UDC 669.713

SMORODINOV, A. N., and KOROBOV, M. A.

"Degree of Intensification and Intensity of Energy Mode of Aluminum Electrolyzers"

Moscow, Tsvetnyye Metally, No 11, Nov 70, pp 33-36

Abstract: The two most common methods used to compare the results of the operation of aluminum electrolyzers are the amount of metal removed per unit area of various surface areas, and comparison of current density from the various areas. When the current density method is used, the yield per unit current is not taken into consideration. When either method is used, the selection of the area by which productivity or current is divided is significant. The correct approach is evaluation on the basis of the most stable area: the area of the cathode jacket or the maximum design anode area. However, even this will not guarantee full comparability of results. The primary factors decreasing comparability of results are: decrease of the "specific perimeter" and decrease in current density with an increase in space in between the poles or an increase in anode area. Formulas are suggested to consider these factors to improve comparability of results.

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USSR

UDC 669.713.1

SMORODINOV, A. N., and ~~KOROBOV~~, M. A.

"Consumption of Anodic Mass As a Function of Current Density and Geometrical Dimensions of Aluminum Electrolyzers"

Moscow, Tsvetnyye Metally, No 9, Sep 70, pp 24-26

Abstract: The effect of anodic current density on the quality of the anode and expenditure of the anodic mass have been the subject of earlier studies under laboratory conditions. In these studies, however, the chemical oxidation of the anode was ignored and consequently the effects of current density on both the thermal load of the anode and its consumption were not considered. The dependence of anode consumption on current density is of particular importance in determining the optimum current density of aluminum electrolyzers. In industrial practice, anodic mass consumption is related to one ton of produced metal. Such determination is appropriate

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USSR

SMORODINOV, A. N., and KOROBOV, M. A., Tsvetnyye Metally, No 9, Sep 70,
pp 24-26

for economic assessments of electrolysis results but cannot always serve as a criterion for evaluating the quality of the anode since anode consumption is a function of current efficiency. Formulas derived in this study make it possible to calculate with reasonable accuracy the consumption of anodic mass for electrolyzers of various sizes presently in the design stage and those in operation under various conditions as well as to perform appropriate calculations of optimum operating conditions for aluminum electrolyzers.

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AA0043435

Korobov, M.A. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-70

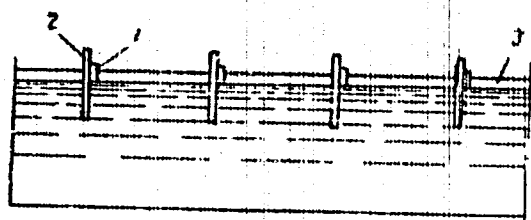
203921 A DEVICE FOR COOLING LIQUID SELF-HEATING ANODE in electrolyzers for the production of aluminium, by means of metallic ribs with their bottom ends immersed in the liquid anode, is characterized in that in order to control temp. along the surface of the anode and to change over the device without stopping the electrolysis, the cooling ribs are made in the form of sections freely fixed to the anode. These sections are made of steel beams and plates made of copper, aluminium or other highly conducting metals. The proposed device consists of steel beams 1 and plates 2. The latter are fixed to the beams 1 and are immersed half-way down their length in the liquid anode. The temp. of the liquid anode can be controlled over its whole area by decreasing or increasing the number of sections and also the number of plates in the sections. This cooling unit can be replaced by a new one without stopping the electrolysis process. 6.2.67. ab 1132087/22-1. M.A.KOROBV et al. Irkutsk Aluminium Works (4.7.69.) Bul.10/10.3.69. Class 40c. Int.Cl. C22d.

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19761762

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19761763

AA0043435

AUTHORS: Korobov, M. A.; Shul'ts, B. V.; Yanko, R. A.; Ivanets, T. A.; Sobal', I.I.
Kostevich, D. N.; Ratmanov, V. N.; Kulakov, A. N.; Kits - Kovyazina, A. A.

Irkutskiy Alyuminiyevyy Zavod

19761764

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1/2 031 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--PRESSURE AND COMPOSITION OF GASES IN ANODES OF ALUMINUM
ELECTROLYTIC CELLS WITH TOP CURRENT FEED -U-
AUTHOR--(02)-KOROBOV, M.A., AYUSHIN, B.I.

K

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(5), 47-9

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, ELECTRONICS
AND ELECTRICAL ENGR.
TOPIC TAGS--PHYSICAL CHEMISTRY PROPERTY, ELECTROLYTE, ANODE MATERIAL, GAS
ANALYSIS, PHYSICAL DIFFUSION, ALUMINUM, ELECTROLYTIC CELL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3008/0327

STEP NO--UR/0136770/043/005/0047/0049

CIRC ACCESSION NO--AP0137432

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137432

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PURPOSE OF THE STUDY WAS TO DET. THE FORMATION CONDITIONS OF A SELFBAKING ANODE AND THE PHYS. CHEM. PROCESSES TAKING PLACE DURING THIS FORMATION. LAB. SCALE EXPTS. WERE CARRIED OUT DURING WHICH GAS ANAL. FOR CO, CO SUB2, O, C SUBN H SUBN, H, AND C SUBN H SUB2N PLUS 2 WAS MADE AND GAS PRESSURES WERE DETD. AT VARIOUS LEVELS AND DEPTHS. THE GAS PRESSURE DECREASED FROM THE CENTER OF THE ANODE TOWARD THE PERIPHERY. THE MAX. GAS PRODUCTION RATE WAS AT 390-450DEGREES, AND THE FORMATION OF TAR HYDROCARBONS WAS FINISHED AT SIMILAR TO 500DEGREES. THE MAX. GAS PERMEABILITY WAS AT 390-480DEGREES. CONSIDERABLE AMTS. OF CO PLUS CO SUB2 (30-80PERCENT) WERE DETD. ALONG THE WHOLE LENGTH OF THE ANODE, AND THEIR HIGHEST CONC. WAS AT THE BOTTOM. UNDER INDUSTRIAL CONDITIONS, THE GAS COMPN. ON THE ANODE WAS QUITE DIFFERENT FROM THE COMPN. IN LAB. SCALE EXPTS. TO IMPROVE THE QUALITY OF THE ANODE AND REDUCE ITS CONSUMPTION, LOW LEVELS OF ELECTROLYTES (12-15 CM) SHOULD BE USED.

UNCLASSIFIED

USSR

UDC 619:616.981.42:614.4:636.32/.38

KOROBOV, N. F., Turkmen Scientific Research Institute of Livestock Breeding and Veterinary Medicine

"Course of Brucellosis in Vaccinated Flocks"

Moscow, Veterinarya, No 11, 1972, pp 57-58

Abstract: The course of brucellosis was studied on a large karakul breeding farm in Turkmenistan which had been affected with the disease for many years. Abortions were common among the sheep and a substantial number reacted positively to the inoculation of vaccine prepared from strain 19. In addition to systematic vaccinations and revaccinations, a variety of veterinary measures were carried out to improve the sanitary conditions. The animals were kept on distant pastures. As a result of these efforts, the infection soon subsided and abortions ceased, but it was not until 5 years later that all the sheep were found to be free of the disease pathogen.

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USSR

K UDC 681.325.07

BRIGADINOV, V. A., KOROBOV, N. N., PON'KIN, V. A.

"A Device for Measuring the Mean-Square Value of a Stationary Centered Random Process"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratztsy, Tovarnyye Znaki, No 9, 1970, p 133, Patent No 264798, filed 16 Aug 68

Abstract: This Author's Certificate introduces a device for measuring the mean-square value of a stationary centered random process. The device contains an input unit, integrator, and registration and comparison units. As a distinguishing feature of the patent, measurement precision is improved by connecting between the input unit and the integrator a comparison unit and an amplifier with variable gain which changes by a linear law.

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Titanium

USSR

UDC 669.295.539.295 ①

KOLACHEV, B. A., LOKSHIN, F. L., LYASOTSKAYA, V. S.,
SOVALOVA, Ye. G., and KOROBV, O. S., Stupinsk Branch of Moscow
Aviation Technological Institute, Chair of the Science of Metals
and of Hot Working of Metals

"The Influence of Aluminum on the Structure and the Properties
of Ti+10%V Alloy"

Ordzhonikidze, Tsvetnaya Metallurgiya, No 2, 1973, pp 149-152

Abstract: The influence of Al additions on the structure and properties of
Ti+10% V alloy, possessing the α'' martensite structure after hardening from
the β -region, was experimentally investigated. The demonstrated change of
the distance between (020) and (110) lines of the α'' -phase indicates that the
rhombic distortion of the lattice decreases with increasing temperature of
hardening. At the same time, the rhombic lattice distortion of martensite in
the alloy containing 6% Al is higher than in the alloy with 3% Al. The compar-
ison of Ti+10%V+3%Al and Ti+10%V+6%Al curves shows that the increase of Al con-
tent in the alloy widens the interval of the heating temperature of hardening,
after hardening from which the α'' -phase is stabilized. In hardening the
Ti+10%V alloy, with increasing hardening temperature the phases $\alpha + \beta$, $\alpha + \beta$
 $+ \omega$, $\alpha + \beta + \omega + \alpha''$, $\alpha + \alpha''$ and α'' develop in succession; in Ti +10%V+3%Al and

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USSR

KOLACHEV, B. A., et al., Tsvetnaya Metallurgiya, No 2, 1973, pp 149-152

Ti+10%V+6%Al the phases $\alpha + \beta$, $\alpha + \beta + \alpha''$, $\alpha + \alpha''$, and ω develop. Al prevents ω -phase formation in hardening and lessens the quantity of ω -phase developing in the aging of hardened alloys. Three figures, one table, eight bibliographic references.

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USSR

UDC 669.295'71'296'787.620.17

KORNILOV, I. I., PERADZE, T. A., VAVILOVA, V. V., PATAKULINA, L. P., and
KOROBOV, O. S., Institute of Metallurgy imeni A. A. Birykov

"Oxygen in Alloys of Titanium with Aluminum and Zirconium"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 4, Apr 73,
pp 36-39

Abstract: The effect of zirconium in alloys of titanium with aluminum and oxygen as well as oxygen in alloys with aluminum and zirconium was investigated with respect to the modulus of elasticity, electrical resistance, hardness, and mechanical properties. For alloys of the system Ti-2Al-0.35O, the addition of 2% Zr leads to increased tensile strength with almost unchanged ductility. The addition of 5% Zr leads to an insignificant increase in tensile strength and an insignificant lowering of ductility. Alloying the Ti-5Zr-0.35O system with up to 3% Al causes a significant increase in tensile strength and insignificant lowering of ductility. When more than 3% Al is added the proportional limit for the modulus of elasticity is exceeded, thus indicating that 3% Al is the solubility limit. Analysis of the system Ti-2Al-5Zr alloyed with oxygen showed that addition of 0.5% O does not lead to alloy embrittlement as long as the Al content is within the solubility limits. Ductility of the alloy remains at 12-16% elongation and 30-35% reduction in area. On the basis of the investigations a secondary titanium

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KORNILOV, I. I., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 4, Apr 73, pp 36-39

alloy (Author's certificate 298577) was proposed containing 2% Al, 2-5% Zr, and 0.3-0.35% O. Five figures, one table, six bibliographic references.

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USSR
KOROBov, V. D.

UNC 601.382.000

"Calculation And Study Of The Effect Of Technological Factors On The Scattering Of The Parameters Of Diffused Collection p-n Junction Of Microwave Germanium Planar Transistor"

Elektron.tekhnika. Nauch.-tekh.n.sb. Poluvodn.pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp 139-149 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B419)

Translation: Expressions are derived for computation of the dependence of the depth and transverse conductivity of a diffused layer, and the capacitance and breakdown voltage of a collector junction, on a regime of gallium diffusion (time, temperature, surface concentration of impurity) and on the resistivity of the initial n-type Ge. A simplified mathematical model of the technological process is presented in the form of a system of linear equations which express the dependence of the parameters of the collector junction on the independent technological parameters. The linear coefficients were calculated by the method of total factorial trial. Using the GT-329 transistor as an example, the correspondence is shown of the theoretical and experimental values of the mean arithmetic values of the parameters of the collector junction and their range within the real scattering of the parameters of the technological process. 4 ref.

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UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

242201 BLASTFURNACE HEAT INTENSIFICATION combines the conventional central oxygen blow with natural gas so that these together are converted into reducing gases in the combustion zone with resultant heat absorption. The blast through this central tuyere is adjusted so that the amount of gasified coke carbon in the centre of the hearth should be in a ratio of 0.5-1.2 of the amount of carbon gasified in the air tuyere. Addition of natural gas in this proportion provides a means of controlling the hearth centre heat.

15.4.65 as 1002462/22-2. KOROLOV, I. I. & TORCHIKOV, V. K.
 DNEPROPETROVSK METALLURGICAL INST. (3.9.69) Bul 15/
 25.4.69. Class 18a. Int.Cl.C 21b.

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LD 18

19750208

AA0040638

AUTHORS: Korobov, I. I.; and Korobov, V. I.

Dnepropetrovskiy Metallurgicheskiy Institut

19750209

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1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF THE TYPE OF CHEMICAL BONDS ON THE STRENGTH OF RUBBERS
OBTAINED BY CURING WITH ALKYLPHENOL FORMALDEHYDE RESIN -U-
AUTHOR--(04)--NIKITIN, YU.N., EPSHTEYN, V.G., KOROBV, V.I., TUKTAROVA, L.S.
COUNTRY OF INFO--USSR
SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 403-408 *R*
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, CHEMISTRY
TOPIC TAGS--CHEMICAL BONDING, VULCANIZATE, MECHANICAL STRENGTH, CURING
AGENT, PHENOL FORMALDEHYDE RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1583 STEP NO--UR/0059/70/032/003/0403/0408
CIRC ACCESSION NO--AP0125205
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--300GT70

CIRC ACCESSION NO--AP0125205

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRONG AND RELATIVELY SHORT CROSS LINKS IN THE STRUCTURE OF UNFILLED VULCANIZATES FROM CRYSTALLIZING RUBBERS OBTAINED BY CROSS LINKING WITH ALKYLPHENOLFORMALDEHYDE RESIN DO NOT HINDER THE ORIENTATION CYRSTALLIZATION OF MOLECULAR CHAINS IF THE STRUCTURE OF VULCANIZATES IS SUFFICIENTLY HOMOGENEOUS. THESE VULCANIZATES HAVE HIGH STRENGTH PROPERTIES. THE PRESENCE OF RESIN CROSS LINKS WITH ETHER GROUPS, WHICH ARE MORE LABILE UNDER THERMO MECHANICAL TREATMENT, ENHANCES APPRECIABLY THE STRENGTH PROPERTIES OF VULCANIZATES BASED ON NCN CRYSTALLIZING, AND TO A LESSER EXTENT, OF THOSE BASED ON CRYSTALLIZING RUBBERS. FACILITY: NII MONOMEROV DLYA SINTETICHESKOGO KAUCHUKA, YAROSLAVL'.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--CONCENTRATION OF ENZYMIC CULTURE SOLUTIONS -U-
AUTHOR--(02)--TARARYKOV, G.N., KOROBOV, YE.B. K
COUNTRY OF INFO--USSR
SOURCE--FERMENT. SPRIT. PROM. 1970, 36(1), 24-6
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CONTINUOUS CULTURE, AMYLASE, PROPANE, WATER, DEHYDRATION,
ENZYME ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/1710 STEP NO--UR/0071/70/036/001/0024/0026
CIRC ACCESSION NO--AP0103476
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--1600170

2/2 016

CIRC ACCESSION NO--AP0103476

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD IS BASED UPON THE FACT THAT PROPANE, WHICH EASILY LIQUEFIES, WILL REMOVE H SUB2 O FROM AQ. SOLNS. BY FORMATION OF A GAS HYDRATE, E.G. C SUB3 H SUB8.17H SUB2 O (I). THE COMPO. IS NOT STABLE, AND WILL DECOMP. AS A FUNCTION OF THE CONC., WHICH IN TURN IS DETD. BY PRESSURE AND TEMP., THE ADJUSTING OF WHICH CAN CAUSE I TO PPT. AT 0-5DEGREES. H SUB2 O WAS REMOVED FROM CULTURES CONTG. AMYLOLYTIC ENZYMES. NO AMYLOLYTIC ACTIVITY IS LOST AND ACTIVITY IS ABOUT EVENLY DISTRIBUTED BETWEEN THE REMAINING CULTURE SOLN. AND THE PPTD. I. FACILITY: VORONEZH. TEKHNOL. INST., VORONEZH, USSR.

UNCLASSIFIED

KOROBOV, Yu. F.

Signal Theory

SOLJPRS 58116
31 JAN 73

NEW BOOKS ON COMMUNICATIONS REVIEWED

[Book review, Moscow, Vestnik Byazi, Russian, No 8, August 1972, inside back cover]

Following are brief reviews of books recently published by Izdatel'stvo Svyaz' which are of interest to readers of the magazine Vestnik Svyazi.

Sheno, A. Ya. Korobov, Yu. F. Teoriya Peredachi Svyazi (Signal Transmission Theory), 1972, 200 pages. Price 71 kopeks.

This book represents a textbook written in accordance with the program of a course by the same name given in communications higher educational establishments.

The book examines the theory of signal transmission as a unified scientific discipline whose basis consists of the signal theory, resistance to interference, and information theory.

General features involved in the transmission of data via communications channels are described, potential possibilities of signal transmission and reception methods are presented, comparisons are made between various communication systems, and new directions in the technical realization of modern systems are discussed.

Principal attention in the book is focused on a description of methods and concepts necessary for the solving of principal ideas inherent in modern theory. The authors strive to free their description from an abundance of mathematical facts for the purpose of making clear the physical interpretation of the obtained results. For the same reason the basic theoretical positions are illustrated with concrete examples from various fields of communications technology.

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USSR

UDC 621.394.3

KOROBOV, Yu.F. (Odessa)

"The Use of Error-Detecting Codes in a System of Relative Phase Telegraphy"

Kiev, Otbor i Peredacha Informatsii. Respublikanskiy Nazhvedomstvennyy Sbornik (Collection and Transmission of Information. Republic Interdepartmental Collection), Vypusk 25, "Naukova Dumka," 1970, pp 18-26.

Abstract: The purpose of this article is to determine the noiseproofness of the coherent reception of binary signals for relative phase telegraphy in communication systems that utilize automatic error interrogation based on error-detecting codes. Although the use of such codes presents no problems in amplitude and frequency telegraphy, in the case of relative phase telegraphy, the comparison principle which is used in the detection process leads to a correlation between errors in the output signal, which in turn unfavorably affects the correction capabilities of the codes. Formulas are obtained for the probability of errors in the information received at the output of the system; these probabilities may be found when the distribution of errors in the signal elements which form code combinations is known.

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USSR

UDC 621.394.3

KOROBOV, Yu.F., Kiev, Otbor i Peredacha Informatsii. Respublikanskiy Mezhdome-
stvennyy Sbornik (Collection and Transmission of Information. Republic
Interdepartmental Collection), Vypusk 25, "Naukova Dumka," 1970, pp 18-26

Three very simple error-detecting codes are analyzed -- a six-place code with a parity check, a seven-place code with a constant number of zeros and ones, and a seven-place cyclic code with minimally undetectable twofold error. Because there is a correlation between errors in the decoding of a signal, each of the three types of codes has an optimal interval between the elements of the code that are being compared. With respect to noise-proofness, the best results may be obtained by using the first of the three codes because of its low redundancy, which has a greater effect on its error-correction capabilities than the larger probability of error detection of the other two codes has on their correction capabilities.

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USSR

GUZ', I. S., DEMINA, G. S., KOROBov, Yu. M.

"Interaction of Elastic Waves with the Boundary in a Bicrystal"

VII Vses. Konf. po Polyarizats.-optich. Metodu Issled. Napryazh., 1971, T. 3
[VII S11-Union Conference on Polarization-optical Method of Studying Stresses,
1971, Vol 3 -- Collection of Works], Tallin, 1971, pp 171-172, (Translated
from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 V135 by Kh.
K. Aben).

Translation: The method of dynamic photoelasticity, in combination with selective etching, is used to study the distribution of dynamic stresses in the zone of a boundary in materials with crystalline structure. Studies were performed on flat specimens of bicrystals of lithium fluoride having low-angle (less than 5°) and broad-angle (over 10°) disorientation. A photoelastic coating 0.1 mm thick was applied to one face of the crystal. The stress wave was excited by a micro-explosion of lead azide and sent through a waveguide to the end of the specimen. A cinegram of the interaction of the stress wave with the boundary, produced at 720,000 frames per second, is presented. The study performed shows that a great portion of the energy is reflected from the boundary, while significantly less passes through to the second crystallite.

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USSR

GUZ', I. S., DEMINA, G. S., KOROBV, Yu. M., VII Vses. Konf. po Polyarizats.-
optich. Metodu Issled. Napryazh., 1971, T. 3., Tallin, 1971, pp 171-172.

This agrees well with the results produced by selective etching. The dislo-
cation density is found to be significantly higher in the crystallite in
which the wave is reflected.

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172 022

UNCLASSIFIED

PROCESSING DATE--1109070

TITLE--INFLUENCE OF CATALYST RESIDUES ON THE PROPERTIES OF POLYETHYLENE

-U-

AUTHOR--(05)-KALDEVA, N.I., LUGOVA, L.I., MATVEYEVA, E.T., OKLOVA, G.P.,
PARAMONKOV, YE.YA.

COUNTRY OF INFO--USSR

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SOURCE--PLAST. MASSY 1970, (5), 63-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS

TOPIC TAGS--POLYETHYLENE, CATALYTIC POLYMERIZATION, ALUMINUM OXIDE,
CHROMIUM OXIDE, ELECTRIC PROPERTY

CENTRAL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0921

STEP NO--UR70191770/000700570063/0064

CIRC ACCESSION NO--AP0134650

UNCLASSIFIED

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PROCESSING DATE--ALD1C70

2/2 022
CIRC ACCESSION NO--A0134650

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEDIUM D. POLYETHYLENE (1) WAS PREPD. BY USING AL SUB2 O SUB3 AND SUB3 CATALYST. THE CATALYST WAS NOT REMOVED FROM I PRIOR TO TESTING AND ITS AMT. WAS APPROX. DETD. FROM THE AMT. OF ASH IN I. THE INCREASE OF ASH CONTENTS IN I FROM SIMILAR TO 0.00 TO 0.03PERCENT DECREASED THE OXIDN. INDUCTION PERIOD FROM 110 TO 15 MIN. THE ELEC. PROPERTIES OF I (DIELEC. LOSS TANGENT, RESISTANCE, DIELEC. CONST.) DID NOT CHANGE WITH THE INCREASE OF THE ASH CONTENTS IN I BEFORE AGING. HOWEVER, AFTER AGING, DUE TO THE INCREASED NO. OF CO AND CO SUB2 H GROUPS IN I WITH HIGH ASH CONTENTS, ITS ELEC. PROPERTIES WERE NOT SATISFACTORY.

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UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--AUTORADIOGRAPHIC STUDY OF THE SYNTHESIS OF NUCLEAR RNA IN INTACT EMBRYOS AND ISOLATED CELLS OF MISGURNUS FOSSILIS -U-
AUTHOR--(02)-KOSTOMAROVA, A.A., KOROBISOVA, N.S.

K

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSR 1970, 191(2), 493-5

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, METHODS AND EQUIPMENT

TOPIC TAGS--AUTORADIOGRAPHY, RNA, EMBRYOLOGY, NUCLEUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605006/F02 STEP NO--UR/0020/70/191/002/0493/0495

CIRC ACCESSION NO--AT0139814

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 020

CIRC ACCESSION NO--AT0139814
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. IN THE TITLE SYSTEMS INCUBATED WITH URIDINE PRIME3 H, ACTIVATION OF NUCLEAR RNA SYNTHESIS APPEARS FROM THE STAGE OF MID BLASTULA ONWARD AND INCREASES IN INTENSITY WITH DEVELOPMENT OF EITHER THE NUCLEI OF ISOLATED CELLS OR INTACT ISOLATES. HOWEVER, INCLUSION OF PRIME3 H IS MORE INTENSE WITH NUCLEI OF ISOLATED CELLS THAN WITH INTACT ISOLATES OF SAME AGE. FACILITY: INST.
BIOL. RAZV., MOSCOW, USSR.

UNCLASSIFIED

UDC: 621.397.3

USSR

BUKHAROV, A. K., GOR'YAN, I. S., KOROCHKIN, E. V., KHAYKIN, L. M.,
and TSUKKERMAN, I. I.

"Television Automaton for Recognition Study"

Moscow, Tekhnika kiro i televideniya, No 3, 1972, pp 52-56

Abstract: The recognition or classification of images can be automated by the use of histograms statistically representing the characteristics of the structures to be recognized. This article describes an automatic device operating on this principle, which uses the time scale and video signal of a standard television camera. The television equipment is operated in combination with an electronic computer using a specific algorithm and programmed for recognition. A general block diagram of the equipment is given together with specific block diagrams of individual assemblies. Photographic samples are also provided of the type of structures and textures recognized: soil specimens and cross sections of metals. Results of experiments with the device are comparable with those obtained by modeling with a computer.

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- 209 -

USSR

NOVIKOVA, N. A., et al., Kardiologiya, No 12, 1971, pp 98-99

system is mobilized by sudden acute hypoxia but not when there is a possibility of slow, gradual adaptation to a deficiency of oxygen.

USSR

UDC 616-008.922.1.04-089:616.839-089.85-07:616.12-008.1-072.7

NOVIKOVA, N. A., KOROCHKIN, L. I., and RAKHMANOVA, T. B., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, and Institute of Cytology and Genetics, Siberian Department, Academy of Sciences USSR, Novosibirsk

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201510007-3"

"Effect of 'Immunologic Sympathectomy' on the Cardiac and Respiratory Rates in High-Altitude Hypoxia"

Moscow, Kardiologiya, No 12, 1971, pp 98-99

Abstract: "Immunologic sympathectomy" was performed in 1- to 5-day-old rats by injecting them with antibody to the nerve growth factor. Histologic examination of the sympathetic trunk a month later revealed a sharp decrease in the number of cells and concomitant disappearance of norpinephrine from the myocardium but increased concentration of epinephrine. The spinal ganglia, however, were little affected by the immune serum. The resistance of the "sympathectomized" animals to hypoxia induced by gradual "elevation" in a pressure chamber to "altitudes" of 1000 to 11,000 m (as determined from the ECG, pneumogram, and rectal temperature) was virtually the same as the control. This finding can be reconciled with published references to lowered resistance of sympathectomized animals to acute hypoxia by assuming that the sympathetic nervous

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1/2 023 UNCLASSIFIED PROCESSING DATE--1970
TITLE--IDENTIFICATION OF ESTERASE ZONES OF RAT BRAIN HISTOCHEMICALLY
EXPOSED ON ZYMOGRAMS DURING ELECTROPHORESIS ON STARCH AND POLYACRYLAMIDE
AUTHOR--KOROCHKIN, L.I.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAU. NAUK SSSR 1970, 190(6), 1459-62

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ESTERASE, RAT, BRAIN, ELECTROPHORESIS, EMBRYOLOGY,
CHOLINESTERASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1672

STEP NO--08/0020/70/190/005/1459/1462

CIRC ACCESSION NO--A10133577

2/2 023

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0133577

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECIMENS FROM WISTAR RAT BRAIN TAKEN AT VARIOUS AGES WERE SUBJECTED TO DOUBLE ELECTROPHORESIS OF POLYACRYLAMIDE GEL INTO STARCH IN ORDER TO DEVELOP THEIR COMPN. POLYACRYLAMIDE ELECTROPHORESIS FAILED TO DEVELOP FRACTIONS VISIBLE AFTER THE DOUBLE OPERATION ABOVE. THE EMBRYONIC FRACTION BA WHICH VANISHES BY 10TH DAY OF LIFE (RAT) YIELDS A 2,ZONE REGION WHICH IS SUPERIMPOSED ON ZONES FOUND FROM THE EXAMN. OF NORMAL ADULT RATS. THIS BAND CANNOT BE OBSO. AT ALL IN ADULT BRAINS. THE CHANGES IN BRAIN ESTERASE WITH AGE OCCURS MAINLY IN ALI, AND CHOLINESTERASES AND THE FRONTAL PART OF ARYLESTERASE WHICH IS NOT FOUND AMONG SPECIMENS TAKEN FROM VERY YOUNG ANIMALS. FACILITY: INST. TSITOL. GENET., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC 576.851.511.095.38:599.323.44-616.981.51.022.39:599.323.4

KOROL', A. G., Khersonskaya Oblast Epidemiological Station

"Participation of Muridae Rodents in the Circulation of Anthrax Infection in Nature"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 2, 1973,
p 141

Abstract: Subcutaneous injection of *Apodemus silvaticus* Pall., *A. agrarius* Pall., and *Cricetulus migratorius* Pall. with a virulent *Bac. anthracis* culture demonstrated that the sensitivity of *A. silvaticus* did not differ from that of house mice (*Mus musculus* L.) and that anthrax agent is subjected to lysis and degeneration in *A. agrarius* and *C. migratorius*. Thus *M. musculus* and *A. silvaticus* are implicated in anthrax circulation and probably maintain epizootic intensity. However, their sparse distribution during periods of anthrax activity cause the disease to be localized and undetectable.

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USSR

UIC: 547.341.07

FESHCHENKO, N. G., KOROL', A. I., KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences of the Ukrainian SSR

"A Method of Synthesizing Tri-(sec-octyl)-phosphine Oxide"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 14, May 71, Author's Certificate No 301337, Division C, filed 24 Feb 70, published 21 Apr 71, p 67

Translation: This Author's Certificate introduces: 1. A method of synthesizing tri-(sec-octyl)-phosphine oxide. As a distinguishing feature of the patent, secondary octyl iodide is treated with phosphorus in the presence of a catalytic quantity of iodine with heating, followed by treating the resultant product with an alkali such as sodium hydroxide, and with sodium sulfite, and isolating the product by conventional methods. 2. A modification of this method is distinguished by heating to 210°C.

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1/2 018 UNCLASSIFIED PROCESSING DATE--ZONOV70
 TITLE--CALCULATION OF THE HEATS OF DISSOLUTION OF ALKYL BENZENES IN A
 NONPOLAR FIXED PHASE -U-
 AUTHOR-(02)-YELNIKOVA, S.L., KOROL, A.N.
 COUNTRY OF INFO--USSR
 SOURCE--TEOR. EKSP. KHIM, 1970, 6(1), 72-8
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--CALCULATION, ALKYL BENZENE, SQUALENE, SOLVENT ACTION, HEAT OF REACTION
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3002/1170 STEP NO--06/0379770/006/001/0072/0078
 CIRC ACCESSION NO--AP0125592

K

2/2 018

UNCLASSIFIED

PROCESSING DATE--2040V70

CIRC ACCESSION NO--AP0128592

ABSTRACT/EXTRACT--(U) CP-CP ABSTRACT. THE HEATS OF SOLN. OF 32
ALKYLBENZENES IN NONPOLAR FIXED PHASES (PENTADECANE, SQUALENE AND
APIEZON L) WERE CALCD. AS A SUM OF DISPERSE POWERS, HOLE FORMATION WORK,
AND INTERACTION BETWEEN SOLVENT MOLS. AND ME GROUPS OF DISSOLVED AGENTS.
FACILITY: INST. FIZ. KHIM. IM. PISARZHEVSKOGO, KIEV, USSR.

UNCLASSIFIED

1/2 035 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--DISPERSION OF PHONONS IN GALLIUM ARSENIDE -U-
AUTHOR--KOROL, E.N. K
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERO. TELA 1970, 12(2), 644-5
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--GALLIUM ARSENIDE, PHONON, CRYSTAL LATTICE, ELASTICITY, TENSOR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0136 STEP NO--UR/C181/70/011/002/0644/0645
CIRC ACCESSION NO--AP0054932
UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054932

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

ABSTRACT. THE DYNAMIC THEORY OF THE LATTICE OF THE A PRIME III B PRIME V TYPE CRYSTALS WITH IONIC COVALENT NATURE OF BINDING AND FINELY CHANGEABLE CHARGES OF IONS IS APPLIED TO GaAs CRYSTALS. COMPARISON OF THE THEORY WITH EXPT. MADE IF POSSIBLE TO DET. ALL FORCE (DIMENSIONLESS) PARAMETERS OF THE THEORY; THEY ARE TABULATED. INDEPENDENCE WAS OBSD. OF THE EQUATIONS OF MOTION AND IONIC CHARGES OF THE DYNAMIC VARIABLES; ALSO IN AS THERE IS A LOWER POLARIZABILITY (A SUB2) OF THE CRYSTAL THAN IN Ga (A SUB1). THIS INDICATES A LOW DEGREE OF IONIC CHARACTER OF THE COMPD. FROM THE OBTAINED PARAMETERS DISPERSION CURVES WERE CONSTRUCTED AND MACROSCOPIC CHARACTERISTICS OF THE CRYSTAL WERE DETD. SUCH AS STATIC DIELEC. CONST., LIMITING FREQUENCIES OF LONGITUDINAL AND TRANSVERSE VIBRATIONS, PIEZOELEC. TENSOR, AND THE COMPONENTS OF THE ELASTICITY TENSOR.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--LATTICE POTENTIAL ENERGY AND OPTICAL, PIEZO ELECTRIC, AND ELASTIC
PROPERTIES OF A PRIMEIII & PRIMEV TYPE CRYSTALS -U-
AUTHOR--KOROL, E.N.
COUNTRY OF INFO--USSR *K*
SOURCE--UKRAIN. FIZ. ZHUR., APR. 1970, 15, (4), 641-647
DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS
TOPIC TAGS--CRYSTAL LATTICE ENERGY, GALLIUM ARSENIDE SEMICONDUCTOR, OPTIC
PROPERTY, PIEZOELECTRIC PROPERTY, ELASTICITY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0200 STEP NO--UR/0185/70/015/004/0641/0647
CIRC ACCESSION NO--AP0129456
UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0129456
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THEORY OF THE LATTICE
POTENTIAL ENERGY OF SEMICONDUCTING COMPOUNDS OF THE A PRIME III B PRIME V
TYPE (GAAS, ETC.) IS PRESENTED ON THE BASIS OF THE ADIABATIC
APPROXIMATION. FROM THE GENERAL EXPRESSIONS OBTAINED, PARTICULAR
EXPRESSIONS ARE DERIVED FOR THE OPTICAL, PIEZO ELECTRIC, AND ELASTIC
PROPERTIES OF THE CORRESPONDING MATERIALS; THESE INCLUDE THE D.C. AND
H.F. DIELECTRIC CONSTANTS AND THE PIEZO ELECTRIC AND ELASTIC TENSOR
COMPONENTS.

UNCLASSIFIED

USSR

UDC 612.358.76-006:613.644

OSTAPKOVICH, V. Ye., and KOROL', I. M., Institute of Work Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, Moscow, and Department of Propathology, Municipal Clinical Hospital No 5, Minsk

"The Effect of Prolonged Industrial Noise and Vibration on the Vestibular Analysor"

Moscow, Vestnik Otorinolaringologii, No 2, Mar/Apr 73, pp 13-18

Abstract: Electronystagmography was used to investigate postrotational (Barany chair, 10 rotations per 20 sec) and postcaloric (perfusing the external auditory meatus with 100 ml of water at 10°C for 10 sec) nystagmus in 32 smiths daily exposed to pulsed noise of 110 db, 23 weavers regularly exposed to high frequency noise of 100 db and to general vibration, and 14 control subjects. Statistical analysis of the records showed that though the latent period was unchanged, the duration of the nystagmus and the speed of the slow phase were significantly reduced in smiths and weavers. Similarly, the amplitude was considerably diminished in both groups, especially in weavers in whom a marked reduction in the frequency was also observed. Thus, the data indicated that prolonged, intensive industrial noise depresses the excitability of the vestibular apparatus. The injury is magnified by the combined action of noise and vibration.

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- 79 -

KOROLE, O. G.

Weather Radar

TECHNICAL TRANSLATION

CRCW

FTC/HFT-23-149-73

ENGLISH TITLE: Principles of Radar and Meteorological Radar Devices

2

FOREIGN TITLE:

WEATHER RADAR

AUTHOR: O. G. KOROLE and N. N. SHARAF

SOURCE: Soviet Meteorology, 1971, pp. 216-230 (numbers 8, 9, and 10)

GRAPHICS NOT REPRODUCIBLE

Translated for FTIC by LEO EASNER ASSOCIATES

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1/3 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ALKYLATION OF PHOSPHORUS DIOXIDE AND RED PHOSPHORUS -U-
AUTHOR--(04)-FESHCHENKO, N.G., IRODIONOVA, L.F., KOROL, O.I., KIRSANOV,
A.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 773-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ALKYLATION, PHOSPHORUS, IODINE, IODINATED ORGANIC COMPOUND,
ORGANIC PHOSPHORUS COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1362 STEP NO--UR/0079/70/040/004/0773/0776
CIRC ACCESSION NO--AP0128765
UNCLASSIFIED

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2/3 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128765

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE LOWER ALCS. (C SUB3-S) REACT WITH RED P AND IODINE IN 1:1.2:3 RATIO AT ELEVATED TEMP. WITHOUT PRESSURE MUCH MORE RAPIDLY THAN THE ALKYL IODIDES WITH SAME RADICALS REACT WITH P SUB2 I SUB4 OR P SUB4 I SUB2. AFTER ALK. TREATMENT THE REACTION MIXTS. YIELD TERTIARY PHOSPHINE OXIDES, AND PHOSPHONIC AND PHOSPHINIC ACIDS. ALKYL IODIDES IN THE PRESENCE OF H SUB3 PO SUB4 REACT WITH P AND IODINE OR WITH P SUB2 I SUB4 JUST AS DO THE CORRESPONDING ALCS. THE MIXED ROH AND IODINE IN THE ABOVE RATIO WERE TREATED WITH RED P AT SMALLER THAN 70DEGREES, THEN REFLUXED UNTIL CONDENSATION OF RI CEASED IN THE REFLUX CONDENSER AND AFTER TREATMENT WITH 20PERCENT NaOH AND EXTN. WITH C SUB6 H SUB6 GAVE IN THE ORG. LAYER THE REQUISITE R SUB3 PO; THE ALK. LAYER GAVE ON ACIDIFICATION THE APPROPRIATE ACIDS. THE FOLLOWING YIELDS OF INDICATED PRODUCTS WERE OBTAINED AFTER REACTION (HR DURATION IN PARENTHESES) OF THE ALCS. WITH INDICATED RADICALS: PR (40-4) 50.3PERCENT R SUB3 PO AND 32-7PERCENT R SUB2 PO SUB2 H; PD (12), 43PERCENT R SUB3 PO, 45PERCENT R SUB2 PO SUB2 H; C SUB5 H SUB11 (94-5) 43PERCENT R SUB3 PO, 41PERCENT RPO SUB3 H SUB2; ISQ-C SUB5 H SUB11 (4-5), 32PERCENT R SUB3 PO AND 50PERCENT RPO SUB3 H SUB2; CYCLO-C SUB6 H SUB11 (4) 80PERCENT R SUB3 PO; AND PACH SUB2 CH SUB2, 79PERCENT R SUB2 PO. OCTYL IODIDE WITH P SUB2 I SUB4 IN THE PRESENCE OF 1-2 MOLES H SUB3 PO SUB4 WAS HEATED GRADUALLY TO 200-100DEGREES IN VARIOUS PROPORTIONS AND, AFTER AN ALK. TREATMENT, GAVE UP TO 40PERCENT R SUB3 PO, UP TO 18PERCENT R SUB2 PO SUB2 H AND 34PERCENT RPO SUB3 H SUB2, THE ACIDS BEING ISOLATED IN THE FORM OF CHLORIDES.

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3/3 012

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PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123765

ABSTRACT/EXTRACT--IT WAS SUGGESTED THAT IN THIS REACTION P SUB2 I SUB4 AND H SUB3 PO SUB4 FORM A REACTIVE INTERMEDIATE WITH NO OR OTHER REACTIVE GROUPS WHICH CANNOT BE REPLACED BY R; THIS APPEARS TO BE UNSTABLE AND ABLE TO REACT INSTANTLY WITH R1 OR WITH ITSELF, AS IT COULD NOT BE ISOLATED. REACTION OF 2:2:2:2:1 MIXT. OF R1, RED P, I SUB2 AND H SUB3 PO SUB4 GAVE THE FOLLOWING YIELDS: PR (33 HR) 52.7PERCENT R SUB3 PO AND 28.5PERCENT R SUB2 PO SUB2 H; BU (12 HR) 41.4PERCENT R SUB3 PO, AND 52PERCENT R SUB2 PO SUB2 H; C SUB5 H SUB11 (4 HR) 42.2PERCENT R SUB3 PO AND 48.6PERCENT RPO SUB3 H SUB2; ISO-C SUB5 H SUB11 (9 HR) 32.2PERCENT R SUB3 PO AND 57PERCENT RPO SUB3 H SUB2; CYCLO-C SUB6 H SUB11 (2 HR) 11PERCENT R SUB3 PO, 40PERCENT R SUB2 PO SUB2 H AND 32.4PERCENT RPO SUB3 H SUB2; AND PHCH SUB2 CH SUB2 (11 HR) 52PERCENT R SUB3 PO, AND 34.8 PERCENT R SUB2 PO SUB2 H. FACILITY: INST. ORG. KHIM., KIEV, USSR.

UNCLASSIFIED

USSR

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UDC 547.241

FESHCHENKO, N. G., IRODIONOVA, L. F., KOHOL, D. I., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Alkylation of Phosphorus Diodide and Red Phosphorus"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 773-776

Abstract: Lower alcohols (n-propyl, n-butyl, n-amyl and isoamyl) react with red phosphorus and iodine in a ratio of 1 : 1.2 : 3 at high temperatures (without pressure) much more rapidly than do the corresponding alkyl iodides with phosphorus diiodide or phosphorus and iodine. The reaction results in the formation (following decomposition of the reaction mixture with a solution of sodium hydroxide) of trialkylphosphine oxides and phosphinic or phosphonic acids. A study of the alkylation of phosphorus diiodide or a mixture of red phosphorus and iodine with alkyl iodides in the presence of phosphoric acid showed that the formation of acid products is due to the presence of the phosphoric acid, which not only changes the direction of the reaction, but also helps to speed it up.

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KOROL, V. I.

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Система передачи информации по радиоволнам
Система передачи информации по радиоволнам
Система передачи информации по радиоволнам

01-7111/741
1/1/75

In order to organize the transmission of data via a switched telegraph network it is necessary to include a large number of terminal installations for the relay of data to the switching telegraph stations. Since most of such installations will be located in cities, city telephone exchange cable lines will be used to connect them. The complex of subscriber's telegraph equipment of the most type worked out at Khabarovsk Division of the Central Scientific Research Communications Institute of the USSR Ministry of Communications, will make it possible to utilize practically any number of circuits in city telephone exchange cables for the transmission of data at a speed of up to 670 bauds.

New Equipment Introduced in the Five-Year Plan

At the present time the transmission of telegraph signals via city telephone exchange subscriber's lines is carried out with the aid of subscriber's panels of electronic transmission devices of the EDRU and DRU-12 type installed in exchange switchboards. Inasmuch as direct current signals are transmitted from these devices directly to the electrodes of the telegraph apparatus, sources of high linear voltage of 300 volts are used in them with a grounded central point.

Utilization of voltage sources with a grounded central point leads to a decrease in transitional attenuation between the telegraph circuit and other circuits in the cable by 13-17 decibels. As a result of the combination of two factors: high linear voltage and a decrease in transitional attenuation telegraph communication exerts a substitutive

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...the need to improve AOTC being practical use is not possible...

Criteria Involved in the Transmission of Direct Current Via Secondary Cells

The "direct current" circuit is usually utilized for the transmission of a secondary current. In this circuit (Fig. 1) transmission relay A and reception relay B are normally included in the linear circuit from the distributor's side, while from the side of the station a transmission relay C and reception relay D along with a network of linear power supply E are included. Transmission of secondary current takes place by the reception of the current circuit by utilizing elements in series in the secondary relay. Reception takes place correspondingly by the reception relay E or by the action of the direct current circuit of the receiver. Under the condition of a single power supply, the undistorted transmission in both directions, however, initial values of the triggering thresholds in both directions, however, initial values of the triggering thresholds of reception relays B and D, or with a change in line parameters, some distortions take place. In order to remove the distortions it is necessary to regulate linear voltage reception relay triggering thresholds.

USSR

PAK, V. P., ZHIROV, G. K., and KOROL', V. S., Kazakh Branch of the All-Union Scientific Research Institute of Exploration Geophysics

"Quantum Magnetometer"

USSR Authors' Certificate No 356615, Cl. G 01v 3/14, Filed 17 May 71, published 23 Oct 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 32, 1972, p 136)

Abstract: The device contains a magnetosensing element on the principle of optical pumping, a signal pickup, an electronic counting frequency meter and an automatic graph plotter with a mechanical scanner. To increase recording resolution, a pulse generator is introduced, made in the form of a synchron-disk, rigidly joined to the drive of the scanner and uniformly quantizing the scale of the recorder for intervals whose graduation mark corresponds to the resolution of the low-order digit and the quantity equals the capacity of the interrogated counter, which is connected to the pulse generator output and during the recording cycle performs the role of zero organ, which controls the run-through of the recording mechanism according to the moment of overflow or coincidence of the readings of the interrogated counter.

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- 69 -

USSR

UDC 575.111:575.24:576.858

RYAPIS, I. V., KOROL', V. V. SUCHKOV, Yu. G., and DOMARADSKIY, I. V.,
Rostov-na-Donu Scientific Research Antiplague Institute

"The Use of Auxotrophic Mutants to Study the Possibility of Mutual Conversion of Cysteine and Methionine in *Pasteurella pestis*"

Moscow, Genetika, No 9, 1971, pp 155-159

Abstract: Treatment of *P. pestis* with N-nitroso-N-methylurea yielded 139 auxotrophic mutants, of which 35 required sulfur-containing amino acids - 28 cys⁻, 6 met⁻, and 1 met⁻(cys⁻). After one year of storage, 25 mutants reverted to the original phenotype, 13 being cysteine-dependent. There was a high frequency of occurrence of revertants in 4 of 11-cysteine-dependent mutants. All the met⁻ mutants remained auxotrophs and only rarely reverted to the original phenotype. The mutants were indistinguishable from the parent strain in cultural, morphological, and biochemical properties except for one of the cysteine-dependent mutants, which did not form typical colonies on Hottinger's agar and fermented mannose, xylose, arabinose, and galactose slowly. Study of the capacity of the mutants to grow on media with cysteine and methionine precursors showed that they differ in nutritional requirements. The cysteine-cystathionine-homocystine-methionine reaction is apparently catalyzed by the prototrophic variant of *P. pestis* in both directions.

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Acc. Nr:

AP0047410

Abstracting Service: GEOPHYSICAL ABST.

5/70

Ref. Code:

2170065

91859n Dependence on chemical structure of the lower concentration limit for the propagation of an alkane flame. Kozolchenko, A. V.; Bobkov, A. S.; Filid, R. M. (USSR). *Tekhnol. Topl. Masel* 1970, 13(1), 21-2 (Russ). The lower concn. limit C_1 of an alkane C_nH_{2n+2} was calcd. by the equation

$$C_1 = \sum_{i < j = 1}^n \pi_{ij} Q_{ij}$$

where i, j are the primary, secondary, etc. C atoms, Q_{ij} the combustion heat related to the bonds $C_i - C_j$. Q_{ij} for the calcd. was obtained according to the structural formula of the alkane from literature data. Thus, C_1 of 2,2,3-trimethylbutane, whose no. of π_{ij} bonds $C_i - C_j$ were $\pi_{11} = 2$, $\pi_{12} = 3$, $\pi_{21} = 1$, the primary, tertiary and quaternary C being marked by the indexes 1, 3, and 4, resp., was $C_1 = 1180(2 \times 228.48 + 3 \times 210.01 + 69.40) = 1.02$ vol. C_1 . The higher difference between the calcd. and exptl. data for 9 alkanes was 0.08 vol. C_1 . The equation reflected the isomeric effect. C_1 decreased with the increase of the mol. wt. but, for the high homologs, the effect of the mol. wt. was lower. The alkane with branched Me and Et groups had C_1 similar to that of the normal-structure alkanes due to the insignificant difference in their combustion heat. Comparative calcd. and exptl. data are tabulated. GGJR

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REEL/FAME
19790936

USSR

UDC 621.375.9:535

KOROLENKO, P. V.

"Excitation of Natural Types of Oscillations in Fabry-Perot Resonators by an Off-Axis TEM_{00} -Wave"

Leningrad, Optika i Spektroskopiya, No. 3, Mar 71, pp 496-502

Abstract: The coefficients for the conversion of an external TEM_{00} -wave into natural types of waves of a spherical Fabry-Perot resonator in the presence of both breakdown of coaxiality and mismatch of the parameters of the incident and excited waves are calculated. The calculations are more general than previous calculations and the formulas obtained include previous results as a particular case. The functional dependence of the conversion coefficients on the degree of maladjustment and mismatch of the system is analyzed. It is shown that there is an optimal degree of mismatch and noncoaxiality for each type of TEM_{00} -wave for which the given type is excited with the greatest intensity. It is noted that the formulas obtained for the conversion coefficients can be used to calculate permissible magnitudes of mismatch of the parameters and

1/2

KOROLENKO, P. V., Optika i spektroskopiya, No. 3, Mir 71, pp 496-502

departure from coaxiality of scanning Fabry-Perot interferometers and various types of systems using connected resonators. Quantitative conclusions concerning the magnitude of the mismatch of parameters and maladjustment of the axes of the beams can then be made on the basis of the nature of higher types of waves excited in the system and their intensity.

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EXCITATION OF HIGHER MODES OF A FABRY-PEROT RESONATOR BY AN
EXTERNAL TEM SUB OO WAVE -U-
AUTHOR-(03)-KOROLENKO, P.V., ODINTSOV, A.I., TARASOVA, S.N.
COUNTRY OF INFO--USSR
SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 28, MAR. 1970. P. 518-523
DATE PUBLISHED----MAR 70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--RESONATOR, WAVE FRONT, EXCITED STATE, EXCITATION ENERGY,
SPHERIC GEOMETRY, ELECTROMAGNETIC WAVE ABSORPTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1435 STEP NO--UR/0051/70/028/000/0518/0523
CIRC ACCESSION NO--AP0118424

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118424

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL MEASUREMENT OF THE CONVERSION COEFFICIENTS CHARACTERIZING THE EXCITATION OF HIGHER MODES OF A FABRY-PEROT RESONATOR BY AN EXTERNAL TEM SUB 00 WAVE. IT IS SHOWN THAT IN THE PRESENCE OF A MISMATCH BETWEEN THE RADIUS OF CURVATURE OF THE WAVEFRONT AND THE BEAM DIAMETER IN A SPHERICAL FABRY-PEROT RESONATOR EXCITED BY AN EXTERNAL TEM SUB 00 WAVE EXCITATION OF HIGHER TEM SUB 00 MODES WITH SPHERICAL GEOMETRY IS OBSERVED. IF THE MISMATCH IS CAUSED BY A DISTURBANCE OF THE COAXIALITY WITH THE INCIDENT BEAM, HIGHER TEM SUB 00 MODES WITH RECTANGULAR GEOMETRY ARE EXCITED. FOR EACH MODE THERE IS A SPECIFIC OPTIMAL DEGREE OF MISMATCH, AT WHICH ITS INTENSITY REACHES A MAXIMUM. THE OPTIMAL DEGREE OF MISMATCH INCREASES WITH AN INCREASE IN THE MODE INDEX.

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Psychology

USSR

UDC 616.89:621.72

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VOLKOV, P. P., KOROLENKO, Ts. P., NIKIFOROV, V. V., and SEMILOVA, V. K., Novosibirsk Medical Institute

"Data on the Investigation of Mental Illness by Biological Methods and Mathematical Simulation"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Biologicheskikh Nauk, Vol 1, No 5, Apr 70, pp 112-118

Abstract: The simulation method is a new approach for the solution of problems in psychiatry. Biological and mathematical models are used. The combined use of both types of models is particularly effective in various fields of medicine. Problems on the borderline of various disciplines, such as pathophysiology, pathomorphology, pharmacology, microbiology, toxicology, etc. complicate the study of pathogenic, exogenic psychoses under clinical conditions. Furthermore, the study is made difficult by the fact that the group of cases to be examined and analyzed should be of the same type, from the etiological as well as from the clinical point of view. In addition, a complete series of clinical studies may be limited or inapplicable.

Staphylococcus infection and intoxication were used as models for the study of
1/3

USSR

VOLKOV, P. P., et al, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Biologicheskikh Nauk, Vol 1, No 5, Apr 70, pp 112-118

general principles and of specific reactions of the central nervous system to injury.

Imizin and chlorazicin were used to produce intoxication psychoses, because they have a pronounced psychotropic effect. Clinical and experimental studies were used to explain several mechanisms of the therapeutic effect of these preparations. EEG studies indicated that therapeutic doses of these drugs produce slow bioelectrical activity. Toxic doses cause blocking of EEG responses to high-frequency stimulation. The blocking effect was similar to that evoked by central choline-blocking agents.

The data obtained indicate that the biological simulation method is extremely effective, and can be applied to the study of pathogenesis of exogenic psychoses and the mechanism of action of psychopharmacological drugs.

The simulation method was applied also to differential analysis of schizophrenia, and to mathematical analysis of epilepsy (organic, genuine, alcoholic, and traumatic), as well as to emotion syndromes (apathy and depression).

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USSR

VOLKOV, P. P., et al, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Biologicheskikh Nauk, Vol 1, No 5, Apr 70, pp 112-118

All these problems lie on the boundary of three disciplines: pathological physiology, psychiatry, and cybernetics. In this area, the approaches have not been worked out. Untried paths will have to be taken, and great difficulties and errors must be expected. One thing is certain: the application of the principles, ideas, and methods of biology and mathematics to psychiatry has a promising future.

3/3

USSR

UDC 629.735.33.063.7:539.622:622.75

AKSENOV, A. F., LITVINOV, A. A., KOROLENKO, YU. I., BOGODIN, A. YE., and SHEPEL', A. YA., Kiev Institute of Civil Aviation Engineers

"Role of Physical and Chemical Processes in the Failure of Rolling Friction Surfaces in Low-Molecular Hydrocarbon Media"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 2, 1973, pp 25-29

Abstract: Studies were conducted to test the effect of different jet fuels on rolling friction surfaces using ShKh15 steel as the test material. Fuels used were commercial T-7, deoxygenated, and T-7 + 0.025% (by weight) Akor-1. Special attention was given to determining the effect of molecular oxygen and surface-active substances on wear. Test parameters consisted of a maximum stress of 230 kg/mm^2 , $n = 850 \text{ rpm}$, and load time equal to 2×10^5 cycles; test temperature ranged from 20 to 120°C. Data plotted from test results showed that wear increases steadily using fuel T-7, reaching a maximum around 60°C and then drops rapidly and levels off at 120°C to less than 0.001 mm of wear. Wear was constant for the deoxygenated fuel and T-7 with Akor-1 added, being less than 0.005 mm. It was established that the anti-friction properties of fuels depend on the intensity and nature of occurrence of physical and chemical processes in the friction zone with the mandatory participation of

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USSR

AKSENOV, A. F., et al, Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 2, 1973, pp 25-29

oxygen. The lubricating action of surface-active substances is considerably greater if the metal is coated with an oxide. Minimum wear is observed when oxygen content in the fuel is maximum. 2 figures, 14 bibliographic references.

2/2

- 72 -

USSR

UDC: 621.891: 662.75

NAZARENKO, P. V., GRIGOR'YEV, N. F. and KOROLENKO, YU. I.

"Increasing the Wear Resistance of Friction Pairs Operating in Hydrocarbon Mediums by Surface Modification"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Symposium of Scientific Works of Kiev Institute of Civil Aviation Engineers) 1971, vyp 2, pp 36-38 (from Referativnyy Zhurnal-Aviatsionnyye i Raketnyye Dvigateli, No 7, 1972, Abstract No 7.34.106)

Translation: It is pointed out that preliminary friction working of the surface in the presence of trialkoxy-organosilane, with and without addition of solid lubricants, more than doubles the wear resistance of the specimens in the jet fuel medium. Absorption of silane molecules forms a coating on the friction surface of metal in the preliminary working process. Molybdenum disulfide, boron nitride and graphite are used as fillers. The boron nitride increases the wear under certain conditions of friction in fuel medium. Friction in different kinds of fuel with coated surfaces does not produce appreciable difference in wear (1 illustration, 2 references, Resume).

1/1

- 101 -

USSR

UDC: 621.891: 662.75

BORODIN, A.YE., LIVINOV, A.A. and KOROLENKO, YU. I.

"Effect of Jet Fuels on Failure of Friction Surfaces of Second Kind"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Symposium of Scientific Works of Kiev Institute of Civil Aviation Engineers) 1971, vyp 2, pp 48-50 (from Referativnyy Zhurnal-Aviatsionnyye i Raketnyye Dvigateli, No 7, 1972, Abstract No 7.34.109)

Translation: The results of investigation of the effect of fuel mediums and of T-7 fuel volume temperature on the contact strength of SHKH15 steel are summarized. The test results show that the fuels being tested differ in their effects on pitting; the effect of T-7 fuel is the greatest, that of T-1 fuel the smallest. As to the temperature effect, the life of SHKHIS steel in T-7 fuel decreases with the increase of temperature to 60°C, increases with further increase of temperature (3 illustrations, 1 reference).

1/1

USSR

UDC: 629.78.002.3

NAZARENKO, P. V., BABAYAN, Kh. A., KOROLENKO, Yu. I.

"Wear Resistance of Multilayered Deformed Metals"

Sb. nauch. tr. Kiyev. in-t inzh. grazhd. aviatsii (Collected Scientific Works of Kiev Institute of Civil Aviation Engineers), 1971, vyp. 2, pp 26-28 (from RZh-Raketostroyeniye, No 10, Oct 72, abstract No 10.41.141)

Translation: This article publishes the results of an investigation of the wear resistance of single-component and two-component multilayered metals deformed to large degrees and annealed at various temperatures. The experiments were done on 99.99% pure silver, and on multiple-layer silver-copper and silver-iron specimens. One illustration, bibliography of two titles. Résumé.

1/1

1/2 032 UNCLASSIFIED PROCESSING DATA--20NDVTO
 TITLE--EFFECT OF OXIDE FILMS ON THE CHANGE IN DISLOCATION STRUCTURE AND
 EXTERNAL FRICTION FORCE -U-
 AUTHOR--(02)-KAZARENKO, P.V., KOROLENKO, YU.I.
 COUNTRY OF INFO--USSR
 SOURCE--FIZIKO KHIMICHESKAIA MEKHANIKA MATERIALOV, VOL. 6, NO. 2, 1970, P.
 75-77
 DATE PUBLISHED-----7C

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

TOPIC TAGS--CRYSTAL DISLOCATION, BIBLIOGRAPHY, OXIDE FILM, PLASTIC DEFORMATION, FRICTION COEFFICIENT, SURFACE AREA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3001/0059

STEP NO--UR/0869/10/006/002/0075/0077

CIRC ACCESSION NO--AP012504

UNCLASSIFIED

272 032

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--A0125894

ABSTRACT/EXTRACT--(U) SP-0- ABSTRACT. STUDY OF THE EFFECT OF OXIDE FILMS AND LIQUID MEDIA ON THE FRICTION COEFFICIENT, THE SURFACE RELIEF, AND THE DISTRIBUTION OF DISLOCATION DENSITY ALONG THE DEPTH. IT IS SHOWN THAT AT A CERTAIN VALUE OF THE OXIDE FILM, THE FRICTION COEFFICIENT ATTAINS A MAXIMUM. IT IS SUGGESTED THAT THIS PHENOMENON IS CONNECTED WITH THE CHARACTERISTICS OF THE PLASTIC DEFORMATION PROCESS AND THE FORMATION OF A RELIEF ON THE FRICTION SURFACE. FACILITY: KIEVSKII INSTITUT INZHENEROV GRAZHDANSKOI AVIATSII, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC 669.168:621.746

SHARANOV, M. A., SILUKOV, G. A., KUROLEV, A. A., KRYLOV, I. A., and VESELOVSKIY, A. Ya. (All-Union Scientific Research Institute of Heat Engineering in Metallurgy /VNIIMT/; Serov Plant of Ferroalloys)

"Study of the Granulation Process of Silicochrome"

Moscow, Stal', No 4, Apr 72, pp 321-323

Abstract: Described is a joint study by the All-Union Scientific Research Institute of Heat Engineering in Metallurgy and the Serov Plant of Ferroalloys involving plant-scale experiments on silicochrome granulation. The objective of the study was to determine the causes of explosions (during the process) and to develop preventive safety measures. The potential causes of explosions are theorized to include the clogging of nozzles and obstructing the metal stream, disintegration of the refraction control mesh constraining the feed of the liquid alloy to the granulation tank, fracture of the lining of the overflow trough snout, excessive distance between the trough snout and the nozzles, etc. The relationship between the granulometric composition of the granulated material and the water supply parameters has been established. Recommendations are made to exclude the limitation on water temperature in the granulation tank to 40°C from the standard technical

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- 74 -

USSR

SHARANOV, M. A., et al, Stal', No 4, Apr 72, pp 321-323

specifications as well as to introduce other relevant technological refinements. The study proposes a new explosion-free granulation technology. (3 illustrations).

2/2

USSR

UDC 621.311.21:666.927(47+57)

KOROLEV, A. A.

"Concrete Operations when Building the Khevoskosk Hydroelectric Power Plant on the Paz River"

Energ. str-vo -- V sb (Power Engineering Construction -- Collection of Works), No 10 (112), Moscow, 1970, pp 50-53 (from RZh-Elektrotehnika i Energetika, No 2, Feb 71, Abstract No 2 D209)

Translation: This article contains a description of the concrete plant and methods of performing the concrete operations and controlling the concrete quality when building the hydroengineering complex with a 47 megawatt hydroelectric power plant by the Norwegian company Norelektro on the border river Paz in Murmansk Oblast. There are 4 illustrations.

1/1

USSR

UDC 614.777.1/615.277.4:547.53

IL'NITSKIY, A. P., YERSHOVA, K. P., KHESINA, A. YA., NOBENKOVA, L. G., KLUBKOV, V. G., and KOROLEV, A. A., Institute of Experimental and Clinical Oncology, Academy of Medical Sciences USSR, Institute of General and Communal Hygiene ineni A. N. Syzin, Academy of Medical Sciences USSR, and First Moscow Medical Institute ineni I. M. Sechenov

"Stability of Carcinogens in Water and Effectiveness of Decontamination Methods"

Moscow, Gigiyena i Sanitariya, No 4, 1971, pp 8-12

Abstract: Polycyclic aromatic hydrocarbons, especially benopyrene, can remain active in water a long time and spread to considerable distances from the source of contamination. The wide distribution of these carcinogens in water is promoted by the presence of certain substances that help them to dissolve, e.g., surfactants which at concentrations of 10 to 50 mg/l can increase the solubility of benopyrene as much as 10-fold. Certain purification methods (ultraviolet irradiation, chlorination, ozonization, gamma irradiation) decrease the concentration of the carcinogens in varying degrees. Ozonization is the most effective, gamma irradiation the least effective.

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- 88 -

USSR

IL'NITSKIY, A. P., et al., Gigiyena i Sanitariya, No 4, 1971, pp 8-12

Experiments showed that bacteriological indicators (e.g., the coli titer) following the use of ultraviolet or gamma rays reveal little about the presence or absence of carcinogenic hydrocarbons. Sixty minutes' boiling of water containing benzopyrene at a concentration of 0.002 to 0.002 μ g/L neutralized most of the compound.

2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--MELTING OF SILICOCHROMIUM BY A TWO STAGE PROCESS IN A CLOSED
FURNACE -U-
AUTHOR-(05)-NAKHABIN, V.P., KOROLEV, A.A., KRYLOV, I.A., SCHCHERBIN, A.N.,
SHATOV, YU.I.
COUNTRY OF INFO--USSR
SOURCE--STAL' 1970, 30(3), 239-40
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--SILICON ALLOY, CHROMIUM ALLOY, METALLURGIC FURNACE, METAL
MELTING, CARBON ALLOY, MANGANESE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605019/C09 STEP NO--UR/0133/70/030/003/0230/0240
CIRC ACCESSION NO--AP0140929

2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC71

CIRC ACCESSION NO--AP0140929

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPERATIONAL STEPS EMPLOYED IN SHIFTING ARC FURNACE OPERATION FROM MAKING FERROCHROMIUM TO MAKING SILICOMANGANESE AND THEN OPERATING IT ON A CHARGE CONTG, QUARTZITE 300, COKE BREEZE 126-134, FERROCHROMIUM 130-135, AND STEEL TURNINGS 25-30 KG TO PRODUCE SI 48.8PERCENT, CR 29.7, C 0.05 ALLOY ARE DESCRIBED.
FACILITY: ZAVOD FERROSLAVOV, SEROV, USSR.

UNCLASSIFIED

USSR

UDC 628.162.82:628.19:628.54

KOROLEV, A. A., First Moscow Medical Institute imeni I. M. Sechenov

"Ozonization as a Method of Treating Water Polluted by Chemical Compounds"

Moscow, Gigiyena i Sanitariya, No 12, 1973, pp 78-83

Abstract: This article is a review of the Soviet and foreign literature relating to the effect of ozone on various chemical compounds present in industrial effluent that threaten the sanitary condition of lakes and streams. Ozone has been found to be capable of oxidizing or destroying phenols, surfactants such as anionic detergents, crude oil and certain petroleum products, cyanides, organochlorine and organophosphorus pesticides, organic compounds like dimethylamine and various hydrocarbons, nitroso compounds, and various inorganic iron, manganese, magnesium, and sulfur compounds. Ozone can also halt the biological activity of substances formed as a result of the decomposition of algae. And it can destroy enzymes and pigments of plant and animal origin. Any preceding purification process makes ozonization more effective and less expensive. Some of the products of ozonolysis, e.g., aldehydes, ketones, peroxides, acetone, compounds having free radicals, may at high concentrations present a danger to human and animal health or impair water quality.

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Acc. Nr.: AP0100761

Ref. Code: UR 0182

USSR

UDC: 621.73.621.822.5

KOROLEV, A. I. and OGARKOV, B. I.

"Investigation of Pressure Distribution in a Slide Bearing by the Photoelasticity Method"

Moscow, Kuznechno-Shtampovoychnoye Proizvodstvo, No. 2, 1970,
pp 25-28

Abstract: The authors of this article clarify the character of the distribution of contact pressures along the peripheries of flat bearings for two limiting cases. In the first, they consider a shaft and sleeve made of fluoroethylene resins or amido plastics with various fillers, laminated-wood plastics, and pressed wood, materials in which the ratio of normal elasticity moduli is equal to unity. In the second, the ratio of the moduli of the shaft and sleeve materials was equal to 6000. In both cases, a polarization optical method for investigating stresses was used. The bearing specimens were made of epoxy resins type EDG-M. Two discs,

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Reel/Frame
10530/2217

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Acc. Nr.: AP0100761

one of steel St.3, the other of ED6-M, were used as shaft models. The polarization-optical method of investigating the stresses permits finding, from the interference band pattern, the family of isoclines, and the optical constant of the material of the modules, the difference in normal stresses and the tangential stresses. The formulas for calculating these quantities are given. A table is also presented of these stresses, normal and tangential, for points of the inner bearing surface. The results of the investigation lead to the following conclusions: the real character of the contact pressure distribution in the bearings differs substantially from the character of the pressure distribution in shaft and sleeve pairs; the use of the materials named above in slide bearings leads to an increase in the maximum pressures acting on the contact surfaces of bearing and shaft.

2/2

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REEL/FRAME
19850238

Genetics

USSR

KONONOVA, S. D., KOROLEV, A. N., YEREMENKO, L. T., and GUPANOV, L. L.,
Institute of Chemical Physics, Academy of Sciences USSR

"Mutagenic Effects of Primary Alkyl Nitrates"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 5, Sep/Oct
71, pp 762-763

Abstract: The mutagenic effects of methyl nitrate, ethyl nitrate, propyl nitrate, and butyl nitrate on the bacteriophage T4B *E. coli* were investigated by keeping the bacteriophage in 0.084 M solutions of the alkyl nitrates with a 0.2 M carbonate buffer at 27°C for up to 48 hours under constant stirring. The results were expressed as the number of r -mutations observed per 1,000 plaques. After 24 hours of exposure, the number of mutations was 5.6 in methyl nitrate, 0.4 in ethyl nitrate, 0.06 in propyl nitrate, 0.1 in butyl nitrate, and 0.1 in control tests. After 48 hours of exposure, methyl nitrate induced 14.5 mutations, thus considerably exceeding the mutagenic effect of *N*-nitroso-*N*-methylurea. The relative rates with which methyl, ethyl, and propyl nitrates entered nucleophilic reactions were calculated to be 9.1:1:0.1. It is concluded that these substances induce mutations by alkylating DNA molecules. The mutagenic effect decreases with increasing size of the alkyl in the alkyl nitrate, however the 1:1:0.1

USSR

KONONOVA, S. D., et al., Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya,
No 5, Sep/Oct 71, pp 762-763

negative charge on the alpha carbon atom increases, preventing the radical
from approaching the nucleophilic reagent.

1/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--NEW VARIATION FOR WAGNER'S OXIDATION OF UNSATURATED COMPOUNDS -U-

AUTHOR--EREMENKO, L.T., KOROLEV, A.M. *K*

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 147-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ISOMER, OXIDATION, NITRATE ESTER, GLYCEROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1070

STEP NO--0062/70/000/001/0147/0149

CIRC ACCESSION NO--AP0104468

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104468

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO 10 G CIS,2,BUTENE,1,4,DIOL
DINITRATE IN 42. ME SUB2 CO WAS ADDED AT 150DEGREES OVER 1 HR 8.9 G POWD.
KMNO SUB4 TO YIELD 80PERCENT MESO,ERYTHRITOL 1,4,DINITRATE, M.
91-1.5DEGREES. THE TRANS ISOMER SIMILARLY GAVE 77.5PERCENT
DL,ERYTHRITOL 1,4,DINITRATE, M. 80-1DEGREES. WHILE 1,BUTENE,3,4,DIOL
DINITRATE GAVE 73PERCENT MIXED ISOMERS OF ERYTHRITOL 1,2, DINITRATE, N
PRIME2 SUBDOEGREES 1.4818, WHICH ON KEEPING GAVE DL,ERYTHRITOL
1,2,DINITRATE (THREO ISOMER), M. 46-70DEGREES, AND THE LIQ.
MESO,ERYTHRITOL 1,2,DINITRATE (ERYTHRO ISOMER). ALLYL NITRATE OXIDIZED
AS ABOVE TO 76PERCENT GLYCERYL 1,NITRATE, M. 57-80DEGREES.

1/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--MAGNETIC DIPOLE AND ELECTRICAL QUADRUPOLE MOMENTS OF ODD NUCLEI -U-

AUTHOR--KOROLEV, A.M. *K*

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 161-4

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETIC DIPOLE, QUADRUPOLE MOMENT, SPHERIC NUCLEUS, EXCITED STATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0070

STEP NO--UR/0048/70/034/001/0161/0164

CIRC ACCESSION NO--AP0103756

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0103756

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REASONS FOR THE DIFFERENCES IN THE VALUES OF THE MAGNETIC DIPOLE AND ELEC. QUADRUPOLE MOMENTS OF ODD SPHERICAL NUCLEI AND IN THEIR SINGLE PARTICLE VALUES ARE DISCUSSED. THE TREATMENT OF MAGNETIC DIPOLE AND ELEC. QUADRUPOLE MOMENTS OF THE FUNDAMENTAL AND OF THE 1ST EXCITED STATES OF THESE NUCLEI ARE PRESENTED ON THE BASIS OF THE BOHR MODEL WITH RESPECT TO THE EXCITATION OF THE INFINITE PHONON NO. IN THE CORE. THE QUADRUPOLE MOMENT OF THE SINGLE N IN THE COUPLING OF THE PARTICLE WITH THE CORE DOES NOT CHANGE. THE ELEC. QUADRUPOLE MOMENT OF THE FUNDAMENTAL AND OF THE SINGLE PARTICLE EXCITED STATES DEPENDS UPON THE PARAMETER G PRIME²-HW ONLY. THUS, THE MAGNETIC DIPOLE AND ELEC. QUADRUPOLE MOMENTS DEPEND UPON THE PARAMETER G PRIME²-HW ONLY, WHICH CAN BE DEFINED FROM THE POSITION OF THE ENERGY LEVELS. THE SIGN OF THE CORRELATION FOR THE SINGLE PARTICLE MAGNETIC MOMENT IS DETERM. BY THE SIGN OF (G_L MINUS G_J). THUS, IN MOST CASES, THE CONSIDERATION OF THE COUPLING OF THE PARTICLES WITH THE CORE IMPROVES THE AGREEMENT OF THE THEORY WITH THE EXPTS. FACILITY: INST. FIZ., KIEV, USSR.

UNCLASSIFIED

KOROLEV A.N.

AA0043547

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

243215 REMOTE TRANSMISSION OF OPTICAL IMAGES is effectively done without the distortion which usually comes from phase shift due to atmospheric scatter of signals. The device consists of a source 1 of continuous spectrum light, two wedge-type interference filters 2,3 in axes crossed over at right angles, the image for transmission 4 and an optical transmission system 5. At the opposite end of the system is, essentially the reverse arrangement, consisting of receiving optics 6, two more crossed-over wedge filters 7, 8 and the received image plane 9. The images may, for example, be film: 9 may be a screen. The light from source 1 is dispersed through the image in frequency spectra at right angles, so that to each point of the image there corresponds a unique frequency, and a given intensity. These quantities are detected and demodulated in the same sense at the receiving end, giving two-dimensional transfer

30.1.67 as 1129654/26-25. A.I. KARTASHEV & A.N. KOROLEV
(18.9.69) Bul 16/5.5.69. Class 42h, Int. Cl. G 02h.

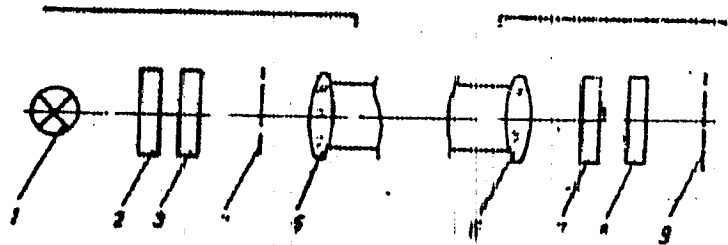
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Coatings

USSR

UDC 678.742:678.01.53

KORYUKIN, A. V., KOROLEV, A. YA., REYTLINGER, S. A., and A GUDIMOV, M. H.,
All-Union Institute of Aviation Materials

"Effect of the Adhesion Properties of a Polymer on the Formation and Gas Permeability of Metallized Polymer Films"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 6, 1973, pp 53-55

Abstract: A study was made of the gas permeability of metal coated polymer films, and the relationship of gas permeability to the magnitude of adhesion of the metal layer to the polymer film was established. Aluminum coatings were deposited on inert polymers PTFE (polytetrafluoroethylene) and (polyethylene) PE and polar polymers PI (polyimide) and (polyethyleneterephthalate) PETF where it was noted that the coefficient of gas permeability of the aluminum coating was on the order of 1-3 times greater for the inert polymers, which leads to the conclusion that inert polymers are more porous. The greatest aluminum coating adhesion strength was noted on the polar polymers (43.0 kgf/cm² for PETF and 20.7 kgf/cm² for PI). The low adhesive strength of aluminum coatings on PTFE and PE polymers is due to the ease with which the metal atoms can migrate to the substrate surface and form coarse
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KORYUKIN, A. V., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 6, 1973, pp 53-55

crystal structures with increased porosity. The adhesive strength of Al films on inert polymers can be increased by modifying (chemically) the surface layer on PTFE with a sodium-naphthalene complex and PE -- with a chromium mixture to make the surface of these polymers functionally adhesively active. Two tables, seven bibliographic references.

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1/2 023 UNCLASSIFIED PROCESSING DATE—30OCT70
TITLE—INCREASE IN THE STABILITY OF ADHESION PROPERTIES IN A POLYETHYLENE
METAL SYSTEM -U-
AUTHOR—(05)—BEIDER, E.YA., VINOGRADOVA, L.M., GUDIMOV, H.M., YEFRENOVA,
~~Z.A., KOROLEV, A.YA.~~
COUNTRY OF INFO—~~USSR~~
SOURCE—VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 222-5
DATE PUBLISHED—70
SUBJECT AREAS—MATERIALS
TOPIC TAGS—ADHESION, POLYETHYLENE, ALUMINUM SURFACE, ISOCYANATE, ORGANIC
SILANE, OLEIC ACID, METAL TO NONMETAL BONDING
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—2000/0666 STEP NO—UR/0460/70/012/003/0222/0225
CIRC ACCESSION NO—AP0124338
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124338

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN AL SURFACE TREATED WITH TOLYLENE DIISOCYANATE, GAMMA AMINO PROPYLTRIETHOXYSILANE, AND OLEIC ACID EXHIBITED SUPERIOR ADHESION TO POLYETHYLENE DEPOSITED BY EDDY SPRAYING. THE MODIFIED SURFACES WERE ALSO RESISTANT TO LONG TERM EXPOSURE TO H SUB2 O. A MODIFICATION MECHANISH IS PROPOSED.

UNCLASSIFIED

KOROLEV A.Ya.

PROCESSING DATE--090970

UNCLASSIFIED

172 - 021

TITLE--INTERNAL STRESSES AND DIFFUSION OF WATER IN POLYMERS -U-

AUTHOR--(U5)-AKTAMINOVA, L.V., VINOGRADOVA, L.A., GARAMINA, S.O., ZHERDEV, YU.V., KOROLEV, A.YA.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(2), 336-42

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--INTERNAL STRESS, WATER, EPOXY RESIN, POLYETHYLENE, POLYAMINE, FLUID DIFFUSION/(U)EPOXY RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1972/0319

STEP NO--UK/0459/70/012/002/0336/0242

CIRC ACCESSION NO--AP0111513
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--02OCT70


2/2 021

CANC ACCESSION NO--AP0111513

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF H SUB2 O AND H SUB2 O VAPOR ON INTERNAL STRESSES IN EPOXY RESIN ED 5 COATINGS HARDENED WITH POLYETHYLENE POLYAMINE AND MODIFIED WITH DEG-1 WERE STUDIED. SWELLING IN H SUB2 O REDUCED, AND EVEN CHANGED THE SIGN, OF INTERNAL STRESSES PRODUCED DURING THE THERMAL HARDENING AND SUBSEQUENT COOLING TO ROOM TEMP. THE INTERNAL STRESSES WERE INVERSELY PROPORTIONAL TO THE RELATIVE HUMIDITY. THE DIFFUSION COEFF. OF H SUB2 O (D), DETD. FROM KINETIC DATA (2.4 TIMES 10 PRIME NEGATIVE9 CM PRIME2-SEC) AGREED WITH D MEASURED BY THE SORPTION METHOD. AN EQUATION WAS PROPOSED FOR THE EVALUATION OF THE MAX. EXPTL. ERROR IN THE DETN. OF INTERNAL STRESSES BY THE CANTILEVER METHOD (A.T. SANZHAROVSKII, G. I. EPIFANDV, 1961) DUE TO A NONUNIFORM DISTRIBUTION OF H SUB2 O ALONG THE COATING.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--02DCT70
TITLE--ADHESION AND INTERNAL STRESSES IN POLYMERS -U-

AUTHOR--(05)-VINOGRADOVA, L.M., ZHERDEV, YU.V., KIROLEV, A.YA.,
SIMONENKOVA, R.V., ARTAMONOVA, R.V. 
COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(2), 348-54

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ADHESION, INTERNAL STRESS, EPOXY RESIN, STAINLESS STEEL,
ADHESIVE STRENGTH/(U)EDS EPOXY RESIN, (U)EDGI RESIN MODIFIER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0254

STEP NO--UR/0459/70/012/002/0348/0354

CIRC ACCESSION NO--AP0106910

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--02DCT70

CIRC ACCESSION NO--AP0106910

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

ABSTRACT. THE ADHESIVE STRENGTH OF EPOXY RESIN ED-5 (I) (MODIFIED WITH DEG-1 AND HARDENED WITH POLYETHYLENEPOLYAMINE), STAINLESS STEEL (II) PAIRS WAS STUDIED AS A FUNCTION OF THE HARDENING TEMP. (T) AND WITH REF. TO INTERNAL STRESSES ARISING DUE TO THE FORMATION OF ADHESIVE BONDS. THE ADHESIVE STRENGTH WAS PROPORTIONAL TO T, REACHING A MAX. OF 360 KG-CM PRIME², WHEN THE INTERNAL STRESSES BROUGHT ABOUT PRESSURE PERPENDICULAR TO THE I-II INTERFACE. A PLOT OF ADHESIVE STRENGTH VS. TEMP. FOR THE I "DISSOLVED" IN II SYSTEM REVEALED THAT THE ADHESIVE STRENGTH DECLINED, REACHING A MIN. AT 100DEGREES AND THEN SUDDENLY INCREASED. A POSSIBLE EXPLANATION FOR THE ANOMALOUS BEHAVIOR WAS GIVEN. MEASUREMENTS OF INTERNAL STRESSES INDICATED THAT EFFECTIVE ADHESION MARKEDLY INCREASED WITH T AT LARGER THAN 100-200DEGREES, PRESUMABLY DUE TO THE FORMATION OF STRONGER ADHESIVE, AND POSSIBLY, CHEM. BONDS. AT LOWER TEMPS. THE ADHESION WAS INDEPENDENT OF T. THE COMPONENT OF THE ADHESIVE STRENGTH RELATED TO FRICTION I.E., THE NORMAL PRESSURE DUE TO INTERNAL STRESSES IN THE POLYMER AND THE STATIC FRICTION COEFF. OF THE I-II PAIR WERE DETERM.

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GARANINA, S. D., ZHERSEV, YU. V., KOROLEV, A. YA., GONUSHKIN, V. A., and IVLUSTIN, YA. D., All-Union Scientific Research Institute of Aviation Materials, Moscow, State Committee for Aviation Technology USSR

"Water Diffusion in Fiberglass Plastics"

Moscow, Kolloidnyy Zhurnal, Vol 32, No 4, Jul-Aug 70, pp 508-511

Abstract: The sorption method was used to study water diffusion in brand EDT-10-VO unidirectional winding epoxy fiberglass plastics in relation to the type of surface filler pretreatment, the direction of water molecule diffusion (along and across the fibers) and other factors. It was found that in the case of water penetration across the fibers the diffusion coefficient is lower than for solidified binder EDT-10, which indicates the absence of through pores in this direction. In the case of water penetration along the fibers the diffusion constant is almost two orders higher than across the fibers, which indicates the presence of a large number of microdefects in the plastic mainly in the boundary layer between the glass fiber and the polymer.

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Boiling of specimens in water results in the formation of additional microdefects in this boundary layer, which results in a significant increase in the rate of water molecule diffusion. Pretreating the glass-fiber filler surface with chemically active substances (finishes) leads to a significant decrease in the water diffusion coefficient.

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