"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 025

CIRC ACCESSION NO--AT0130423

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A THEORETICAL CALCN. WAS MADE OF THE ORDERING ENERGY BASED ON THE STATISTICAL THEORY (J. COWLEY, 1950) OF CLOSE RANGE ORDER AND BY USING EXPTL. VALUES FOR THE ORDERING COEFFS. FOR TEMPERED ALPHA SOLID SOLNS. OF CU-AL ALLOYS. THE DEPENDENCE OF THE CLOSE RANGE ORDER ON THE HARDENING TEMP. WAS STUDIED BY THE DIFFUSION SCATTERING OF X RAYS FOR CU-AL ALLOYS CONTG. 11.9, 14.3, 15.9, AND 17.6 AT. PERCENT AL. THE THEORETICAL AND EXPTL. VALUES WERE COMAPRED FOR THE CLOSE RANGE ORDERING COEFFS. FOR ALLOYS CONTG. LARGER THAN 15 AT. PERCENT AL, THE COEFF. DEPENDS MAINLY ON THE NATURE OF THE ORDERED STATE. FOR THESE ALLOYS ORDERING TAKES PLACE DURING QUENCHING.

FACILITY: PETROZAVODSK. GOSUNIV., PETROZAVODSK, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UNCLASSIFIED PROCESSING DATE--02OCT70

1/2 042

TITLE--EFFECT OF GAMMA IRRADIATION ON THE PROCESS OF ESTABLISHING SHORT RANGE ORDER IN ALPHA CUAL -U-

AUTHOR-(02)-KULMANEN, E.V., SHIVRIN, O.N.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(1) 154-7

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAMMA IRRADIATION, ORDERED ALLOY, ALUMINUM COPPER ALLOY, METAL DIFFUSION, CRYSTAL DEFECT, RADIATION EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0185/70/015/001/0154/0157

PROXY REEL/FRAME--1989/1338

CIRC ACCESSION NO--AP0107811

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

2/2 042 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107811

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF GAMMA IRRADN. WAS DETD. ON SHORT RANGE ORDER IN ALPHA CUAL ALLOYS CONTG. 11.9, 14.3, AND 15.9 AT PERCENT AL. THE 10 PRIME6 MINUS 10 PRIME7 R IRRADN. DOSES DID NOT AFFECT THE SHORT RANGE MAX. BUT AN INCREASE OF DIFFUSE BACKGROUND MODULATION WAS OBSERVED AT DOSES IS GREATER THAN 10 PRIME8 R. HIGH IRRADN. DOSES INCREASE SHORT RANGE ORDER DUE TO AN INCREASE OF DIFFUSE MOBILITY OF ATOMS AND DUE TO INTRODUCTION OF NONEQUIL. CONCN. OF DEFECTS AS A RESULT OF IRRADN.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

UDC 539.3

EESORG, KH. KH., PROMET, P. KH., VIRKUS, KH. M., KULMET, R. YU.

"Stress Concentration Around a Rectangular Inclusion in a Homogeneous Elastic Medium Under a Plane Stress State"

V sb. Issled. po str-vu. Vyp. 11 (Studies on Construction. No. 11 -- Collection of Works), Tallin, 1970, pp 142-151 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9V44)

Translation: The stress distribution in a plate with a rectangular inclusion of another material under uniaxial compression was investigated for its application to the tensometric study of concrete structures with the aid of measuring plates applied to the material by the photoelasticity method. The results are compared with data obtained by the authors by an approximate analytical method. The coincidence was satisfactory. N. P. Fleyshman.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--SYNTHESIS OF 2 FURANCARBOXYLIC AND 5,HALO,2,FURANCARBOXYLIC ACIDS -U-

AUTHOR-(02)-BORISOVA, N.N., KULNEVICH, V.B.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM., KHIM. TEKHNOL. 1970, 13(2), 230-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, FURAN, CARBOXYLIC ACID, IR SPECTRUM, IODINATED ORGANIC COMPOUND, BROMINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0177 STEP NO--UR/0153/70/013/002/0230/0232

CIRC ACCESSION NO--AT0132454

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

2/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0132454

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 2 FURANCARBOXYLIC ACID IS PREPD. IN 86PERCENT YIELD BY SLOWLY ADDING A SOLN. OF 20 G FURFURAL IN 100 ML C SUB6 H SUB6 TO AN AGITATED SUSPENSION OF 14 G NA SUB2 O SUB2 IN 100 ML C SUB6 H SUB6 AND STIRRING 30 MIN. THE 5 IODO, 5 BROMO, AND 5 IODO DERIVS. ARE SIMILARLY PREPD. THE IR SPECTRA OF THE 4 COMPDS., IN ETOH AT 10 PRIME NEGATIVE5 M, ARE INTERPRETED. FACILITY: KRASNODAR. POLITEKH. INST., KRASNODAR, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

UDC 621.52:629.39

ALEKSANDROVA, A.T., GURA, A.N., KULCMZIN, YE.K., SHAPKIN, YE.V.

"Experimental Units For Study Of The Operation Of Mechanisms And Radioelectronic Systems In A Vacuum"

Tr. Mosk. in-ta elektron. mashinostr. (Works Of The Moscow Institute Of Electrical Machine Construction), 1971, No 9, pp 185-190 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A66)

Translation: Units were developed for simulation of vacuum conditions in the range of vacuums of $10^{-4} \div 10^{-8}$ mm of mercury at temperature from minus 100 to plus 300° C. The means for high-vacuum pumping in the unit are two series-connected diffusion pumps with an output of 2000 and 500 l/sec. A.F.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

UDC 532.517.2

KULONEN, A. F., KULONEN, G. A., KULONEN, L. A.

"A Laminar Boundary Layer on a Surface With Sources"

Kazan', Izvestiya Vysshykh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 3, 1970, pp 22-29

Abstract: The problem of a laminar boundary layer in a medium of constant density on a surface with sources of mass or heat, with a constant velocity of the external stream, is formulated and solved in the article (the sink is regarded as a source with negative output). The Fourier method is applied to the basic equation that has been found as a result of linearization of the appropriate boundary-layer equation. The proposed method makes it possible to calculate the distribution of the friction stress and temperature in the boundary layer on the surface with discrete supply of heat on mass, when conventional methods of calculating the boundary layer prove inapplicable. 2 tables, 1 figure, 7 bibliographic entries.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

UDC 532.517.2

KULONEN, A. F., KULONEN, G. A., KULONEN, L. A.

"A Laminar Boundary Layer on a Surface With Sources"

Kazan', Izvestiya Vysshykh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 3, 1970, pp 22-29

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USSR UDC 532.517.2

KULONEN, A. F., KULONEN, G. A., KULONEN, L. A.

"A Laminar Boundary Layer on a Surface With Sources"

Kazan', Izvestiya Vysshykh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 3, 1970, pp 22-29

Abstract: The problem of a laminar boundary layer in a medium of constant density on a surface with sources of mass or heat, with a constant velocity of the external stream, is formulated and solved in the article (the sink is regarded as a source with negative output). The Fourier method is applied to the basic equation that has been found as a result of linearization of the appropriate boundary-layer equation. The proposed method makes it possible to calculate the distribution of the friction stress and temperature in the boundary layer on the surface with discrete supply of heat on mass, when conventional methods of calculating the boundary layer prove inapplicable. 2 tables, 1 figure, 7 bibliographic entries.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR UDC 911.3.616.-021.614.777(575.1)

KULOV, G. I.

"Vibrios in Open Reservoirs of Surkhandar'ya Oblast"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of works), Vyp. 3 (13), Saratov, 1970, pp 44-48 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.59 by Ts. Minsbarg)

Translation: In the years 1965-1966 studies were made on 1,783 water samples, using standard techniques. A total of 665 were taken from the Amu Darya; 781 from other reservoirs and water sources; and 337 samples were taken from drinking water cisterns of vessels plying the Amu Darya. An average of 150 samples was studied monthly. A total of 399 strains were acid-producing vibrios; among these 216 were from the Amu Darya. The largest number of Amu Darya strains was isolated in warm weather (26.5% during the hottest month, July). Some 89 strains were set aside, after initial identification, for future study: 59 from the Amu Darya; 14 from other water supplies; 4 from the city water supply; and 12 from ship cisterns. In addition, four strains from people living near the investigated water sources were studied.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

KULOV, G. I., V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of works), Vyp. 3 (13), Sartov, 1970, pp 44-48 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.59 by Ts. Minsbarg)

Classifying the vibrios according to carbohydrate fermentation (sucrose, arabinose, mannose), the study revealed strains from the 4 Heiberg groups: Group 1 -- 17; Group 2 -- 23; Group 3 -- 20, Group 4 -- 29. Vibrios isolated from humans also belonged to the 1-4 Heiberg groups. The strains studied did not differ in cultural, morphological or biochemical characteristics from classical and El-Tor strains. The water and human strains differed from the classical and El Tor strains only in the basic signs: the agglutination reaction with classical "O" and type sera, and the capacity for lyogenesis by classic and El-Tor phages. On the basis of the evidence that human strains are similar to those isolated from water, it seems possible that the vibrios entered the human body through the drinking water. Results of agglutination reactions of the studied strains with cholera type and rabbit and horse "O" serum, are presented and results with "ON" serum and results of action of classical and El-Tor phages on the investigated vibrios.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UNCLASSIFIED PROCESSING DATE--11SEP70

1/2 052

TITLE--THIN FILM SUPPRESSOR COATINGS, METHODS FOR THEIR PREPARATION AND STUDY, AND THEIR BASIC PROPERTIES -U-

AUTHOR--KULOV, S.K., SHERSTNEV, L.G.

K

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKH. ELEKTRON. 1970, 15(2) 420

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTRON BOMBARDMENT, METAL COATING, TITANIUM, CHROMIUM, BORON, CARBON, COPPER, THERMAL EFFECT, HIGH VACUUM, ELECTRON EMISSION, BORON CARBIDE, TITANIUM CARBIDE, CHROMIUM CARBIDE, BORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1272 STEP NO--UR/0109/70/015/002/0420/0420

CIRC ACCESSION NO--AP0107748

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

2/2 052 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107748

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SECONDARY ELECTRON EMISSION WAS STUDIED FOR THIN FILMS OF TI, CR, B, C, AS WELL AS FOR THE CARBIDES AND BORIDES OF TI AND CR ON A CU SUBSTRATE. THE SECONDARY EMISSION COEFF. WAS DETD. AS A FUNCTION OF THE ENERGY OF THE PRIMARY ELECTRONS AND THE EFFECTIVE THICKNESS OF THE FILM WAS DETD. FOR WHICH THE PRIMARY ELECTRONS DET. COMPLETELY THE SECONDARY EMISSION PROPERTIES OF THE SURFACE. THIS IS OF THE ORDER OF 50-100 ANGSTROMS. THE STABILITY OF THE EMISSION PROPERTIES WAS STUDIED OVER A WIDE RANGE OF PRESSURE (10 PRIME NEGATIVE7-760 TORR) AND TEMP. THE REDN. OF THE OXIDIZED CR FILMS IS ONLY POSSIBLE BY MEANS OF ELECTRON BOMBARDMENT. THE TI FILMS CAN ALSO BE REDUCED BY HEATING IN A HIGH VACUUM IF THEIR THICKNESS IS GREATER THAN 150-200 ANGSTROMS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

UDC 536.531

KULOV, V. S., STAROSEL'TSEVA, S. P., and METREVELI, S. G., Severo-Osetinskiy State University

"Thermistors of High-Resistance Indium Phosphide"

Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye, Vol 14, No 7, 1971, pp 135-136

Abstract: The authors suggest using high-resistance indium phosphide, neutralized with copper, as the material for producing thermistors. The experimental thermistor samples prepared of InP have a thermal coefficient of resistance $\alpha \approx 12\%$/deg at room temperature and $\alpha = 6\%$/deg at 150° C.

The authors further describe the experimental set up and cite the results; these are shown on two schematics. Figure 1 depicts the thermistor resistance versus temperature and Figure 2 gives the static volt-ampere characteristics of the thermistor in an atmosphere of calm air. The article contains 2 figures.

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UDC 536.531

USSR

KULOV, V. S., STAROSEL'TSEVA, S. P., and METREVELI, S. G.

"High-Resistance Indium Phosphide Thermistors"

Leningrad, Izvestiya VUZ -- Priborostroyeniye, No. 7, 1971, pp 135-136

Abstract: The authors, associated with the North Osset University, present the results of tests made on thermistors they synthesized and for which they claim characteristics better than the ST1-18 cobalt-manganese thermistors thought to be the best in the Soviet Union. The high-resistance material they used was made by introducing a compensating impurity, copper, into the InP melt; it has a resistivity of about 10^7 ohm·cm and has n-type conductivity. The ohmic contacts are made of lead. Curves are given for the thermistor resistance as a function of the temperature, and for the static volt-ampere characteristic of the thermistor in undisturbed air. The device can be used with reliability at temperatures above 100° C.

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USSR

UDC 621.315.592.3:669.872'779

STAROSEL'TSEVA, S. P., METREVELI S. G., KULOV, V. S.

"Technological Process for Obtaining p-Type Indium Phosphide"

Tr. Sev.-Kavkaz. gornometallurg. in-ta (Works of the Northern Caucasus Mining and Metallurgical Institute), 1970, vyp. 28, pp 59-60 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G502)

Translation: Alloying the initial InP with n-type conductivity by admixtures of Zn, Cd, and Mg was carried out both in the process of crystal growth by the zone melting method and by diffusion. The crystal growth rate was 10 mm/hour. Large-block ingots with a hole concentration up to $8 \cdot 10^{18}$ cm^{-3} are obtained by crystallizing a melt of InP of stoichiometric composition. By diffusion of radioactive Zn^{65} it is demonstrated that the solubility of the Zn in InP reaches 10^{20}-10^{21} cm^{-3}. Part of the Zn is present in the form of neutral atoms. This leads to an anomalously low value of the mobility of the charge carriers in strongly alloyed InP (10-20 cm^2/volt-second at 77° K). Moderately alloyed samples of InP ($6 \cdot 10^{16}$-$8 \cdot 10^{16}$ cm^{-3}) have high hole mobility of 1,200 cm^2/volt-second at 77° K. It is demonstrated by the method of x-ray spectral analysis that InP crystals grown from a melt are stoichiometric.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

KUL'SKIY, L. A., Academician, Academy of Sciences Ukrainian SSR

"The Problem of Treatment of Water With Silver in the Light of Present-Day Scientific Concepts"

Kiev, Vestnik Akademii Nauk Ukrainskoy RSR, No 9, Sep 71, pp 8-14

Abstract: The subject of sterilization of water with silver is reviewed (31 references). Silver is a very effective agent for the sterilization of water and its preservation in a sterile state. In work by Kul'skiy et al it was established that silver has a bactericidal effect on both gram-positive and gram-negative bacteria. It is particularly effective against pathogenic microorganisms such as Proteus vulgaris and Bact. cereus which intensively propagate in water stored for a long time. As shown by L. V. Grigor'yeva, silver inhibits the reproduction of both adeno- and enteroviruses. While the presence of chlorides initially reduces the bactericidal effect of silver, as shown in experiments in which water contaminated with E. coli was used, the action of chlorides in reducing the effect of silver on microorganisms disappears after one week. In view of the fact that E. coli is less resistant to the action of disinfectants that Streptococcus faecalis, Clostridium welchii, entero- and adenoviruses, the effects

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USSR

KUL'SKIY, L. A., Vestnik Akademii Nauk Ukrainskoy RSR, No 9, Sep 71, pp 8-14

on these contaminants as well as on E. coli must be taken into consideration in developing standards for the sterilization of water with silver. Silver is a trace element that is present in the human organism and affects the action of enzymes. Similarly to Cu, Ag participates in the development of immunity. In infectious diseases, the concentration of Ag in the blood increases. There are reasons to believe that Ag participates in the defense reactions of the organism in tuberculosis. Both Cu and Ag inhibit the synthesis of amino acids by tumor tissue. Ag accumulates in the blood serum, particularly in the blood serum globulins from which antibodies are formed. It is bound by the reticuloendothelial system, stimulating the activity of the latter. Because of the high antibacterial activity of Ag and its effects on the organism, this element could be successively applied in the therapy of chronic gastritis, gastrointestinal ulcers, various diseases of the bile-forming system, diseases of the upper respiratory passages, etc. In work in which the author participated, stationary and portable equipment has been developed for the sterilization with Ag of water to be used for drinking and other purposes and preservation of this

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

KUL'SKIY, L. A., Vestnik Akademii Nauk Ukrainskoy RSR, No 9, Sep 71, pp 8-14

water in a sterile state. The operation of this equipment is based on anodic dissolution of Ag in the water. Equipment units of this type were named ionizers. Ionizers with a high output (LK-28 and LK-30), for medical laboratories (LK-25), for means of transportation (LK-26 and LK-27), and for household use (LK-31 and LK-32) have been developed. Ionizers of type LK-28 have been installed on some ships, with the result that the incidence of gastrointestinal diseases among sailors has decreased considerably. Water treated with Ag is used on space vehicles. Sterilization of mineral water with Ag is being applied at the Kiev, Yalta, Dobropol'sk, Khar'kov, Berezovsk, Feodosiya, Kislovodsk, Dnepropetrovsk, and some other plants.

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Water Treatment

USSR K UDC 628.543:546.214 2

KUL'SKIY, L. A., PLYSYUK, A. A., and SLIPCHENKO, V. A., Institute of Colloidal Chemistry and Chemistry of Water, Academy of Sciences Ukrainian SSR

"Use of Ozone for the Final Purification and Decontamination of Biochemically Pure Waste Water"

Kiev, Khimicheskaya Promyshlennost' Ukrainy, No 2, 70, pp 58-61

Abstract: This study concerns ozonization as a multi-purpose and economical method for the final purification of biochemically pure waste water. Ozone, a strong oxidizer, not only decontaminates water but considerably improves its physicochemical and sanitary-hygienic characteristics. Research on the use of ozone for oxidizing the organic matter of industrial sewage at organic synthesis and processing plants has shown ozone to be effective in removing phenols, thiocyanates, and cyanides, petrochemicals and products of methane thermooxidative pyrolysis, as well as polynuclear aromatic compounds (possessing carcinogenic properties), nitrocompounds, etc. Ozone, unlike chlorine, does not produce harmful oxidation products of organic matter, and ozonization does not require temperature and

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

KUL'SKIY, L. A., et al, Khimicheskaya Promyshlennost' Ukrainy, No 2, 70, pp 58-61

pH regulation. Experiments conducted on a small laboratory device with an oxidation column demonstrated the high effectiveness of final purification with ozone. At dose rates of 20--25 mg/l ozone is sufficiently effective in decolorizing, deodorizing and decontamination of water. A table in the original article gives comparative data on the effectiveness of purifying water with ozone as a function of its concentration in the ozone-oxygen mixture. Ozone has also gained wide acceptance in decontamination of drinking water. The bactericide activity of ozone is shown in another table in the original article.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR UDC 541.183.24

MATSKEVICH, YE. S., KUZEVANOVA, L. V., and KULSKIY, L. A., Academician of the Academy of Sciences Ukrainian SSR, Institute of Colloidal Chemistry and the Chemistry of Water, Academy of Sciences Ukrainian SSR, Kiev

"Effect of Electron Density Displacement in Surface Layer of Active Carbons on Their Adsorption Properties in Electrolyte Solutions"

Moscow, Doklady Akademii Nauk SSSR, Vol 194, No 2, 1970, pp 363-366

Abstract: Based on the idea of the nonequipotentiality of the surface of oxidized active carbon, the authors assumed that changes in the dipole potential jump φ_d can be judged not so much from a decrease in cation adsorption as a change in the magnitude of anion adsorption. The purpose of the article was to study this question. The adsorption was studied on specimens of ashless coarse-pore carbon from phenol-aldehyde resin. It was found that methylation of oxidized carbon decreases the magnitude of the dipole potential jump due to the presence

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USSR

MATSKEVICH, YE. S., et al., Doklady Akademii Nauk SSSR, Vol 19.., No 2, 1970, pp 363-366

of different oxygen-containing groups on the surface. The value of $\Delta\varphi_d$ can be found from variations in the magnitude of anion adsorption (a_A^-). Variations in $\Delta\varphi_d$ in the transition from oxidized carbons to methylated oxidized carbons can also be judged from displacement of the point of zero ion adsorption on these carbons, which tends towards less positive potentials.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

Water Treatment

UDC 628.543:546.214

USSR

K

KUL'SKIY, L. A., PLYSYUK, A. A., and SLIPCHENKO, V. A., Institute of Colloidal Chemistry and Chemistry of Water, Academy of Sciences Ukrainian SSR

"Use of Ozone for the Final Purification and Decontamination of Biochemically Pure Waste Water"

Kiev, Khimicheskaya Promyshlennost' Ukrainy, No 2, 70, pp 58-61

Abstract: This study concerns ozonization as a multi-purpose and economical method for the final purification of biochemically pure waste water. Ozone, a strong oxidizer, not only decontaminates water but considerably improves its physicochemical and sanitary-hygienic characteristics. Research on the use of ozone for oxidizing the organic matter of industrial sewage at organic synthesis and processing plants has shown ozone to be effective in removing phenols, thiocyanates, and cyanides, petrochemicals and products of methane thermooxidative pyrolysis, as well as polynuclear aromatic compounds (possessing carcinogenic properties), nitrocompounds, etc. Ozone, unlike chlorine, does not produce harmful oxidation products of organic matter, and ozonization does not require temperature and

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

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KUL'SKIY, L. A., et al, Khimicheskaya Promyshlennost' Ukrainy, No 2, 70, pp 58-61

pH regulation. Experiments conducted on a small laboratory device with an oxidation column demonstrated the high effectiveness of final purification with ozone. At dose rates of 20--25 mg/l ozone is sufficiently effective in decolorizing, deodorizing and decontamination of water. A table in the original article gives comparative data on the effectiveness of purifying water with ozone as a function of its concentration in the ozone-oxygen mixture. Ozone has also gained wide acceptance in decontamination of drinking water. The bactericide activity of ozone is shown in another table in the original article.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR UDC: 621.317.733:621.317.029.64

KULISH, G. M.

"Use of Self-Compensation Measurement Methods in Instruments for Measuring the Parameters of SHF Devices -- the Path to Improvement of Precision and Reliability"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 149-151 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A368)

Translation: The author points out the advisability of using autocompensation methods of measurement to improve precision and reliability in panoramic measuring instruments. This principle is realized in the Kh37 instrument. To create simple instruments for measuring phase-frequency characteristics with high resolution for extensive use, an investigation is made into autocompensation methods of measurement directly on superhigh frequencies using designs with precision wide-band phase shifters, standard SHF elements and modules. A block diagram of such a measuring instrument is presented and its principle of operation is described. A block diagram is given and the working principle is described for an instrument which measures the amplitude-frequency and phase-frequency characteristics utilizing

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KULISH, G. M., Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2, Novosibirsk, 1970, pp 149-151

self-compensation on an intermediate frequency. The lack of wide-band electrically tunable SHF measurement devices puts a speed restriction on autocompensation circuits. E. L.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UDC 541.1

USSR

KNYAZ'KOVA, T. V., and KUL'SKIY, L. A., Institute of Colloidal Chemistry and Chemistry of Water, Academy of Sciences, Ukrainian SSR

"Selectivity of Triethylamine in Softening of Salt Water"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 37, No 6, Jun 71, pp 620-622

Abstract: Studies were carried out on the effect of water concentration in organic phase and on the initial concentration of the salt in water on the selectivity of triethylamine in respect to the chlorides during extraction of water; it has been shown that this selectivity depends on both of these factors. An empirical formula has been developed for the calculation of the coefficient of selectivity of triethylamine as a function of above parameters.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR UDC 681.326.34:519.1

VOBLENKO, S. T., and KULTYGIN, A. K.

"A Procedure for Forming the Unidirectional Output Pulses of a Linear Transforming Combinatory Switch"

USSR Author's Certificate No 278752, Filed 28 May 68, Published 3 Dec 70 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B171 P)

Translation: A procedure for forming the unidirectional output pulses of a linear transforming combinatory switch is being patented. The procedure is distinguished by the following features, whose purpose is to decrease significantly the energy accumulated in the inductance of the trigger of the switch during the time a pulse occurs and also to increase the limiting frequency of the switch's operation. At one of the outputs of the switch, a pulse is formed whose length is equal to half of the specified length of the pulse in the charge; this pulse is formed by supplying the appropriate combination of input signals to the inputs of the switch. Then the polarity of all the input signals is reversed and at the same switch output a pulse is formed whose length is the same as the preceding pulse, but whose polarity is the reverse of the polarity of the preceding pulse. Both output pulses are then permitted to pass.

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USSR

UDC 681.327

DOROZHKINA, V. Ya. KULTYGIN, Ye. V., SOLODOVNIKOV, Yu. N.

"Device for Data Input to Digital Computers"

Tr. Vses. n.-i. in-ta stroit. i dor. mashinostr. (Works of the All-Union Scientific Research Institute of Construction and Road Machine-Building), No 46, 1970, pp 84-85 (from RZh-Avtomatika, Telemekhanika i vychislitelnaya tekhnika, No 9, Sep 70, Abstract No 9B515K)

Translation: Statistical processing of experimental data usually requires use of a digital computer. Under experimental conditions, the data is recorded in the form of a continuous signal on an oscillographic tape. Therefore, most often this data is input to the digital computer in two steps: conversion of the initial data into numerical values and transfer of the numerical values to the information carrier for the digital computer. These steps are extremely labor-consuming and greatly increase the processing time as a whole. A device has been developed for inputting data directly to the ready-access memory of the computer. The basic advantage of the device is the fact that it is built on the basis of elements and modules of series-manufactured computers. The block diagram of the device was developed as applied to the Razdan-2 digital computer.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR UDC 615.28:547.722/.724).012.1

ZELIKMAN, Z. I., KUL'NEVICH, V. G., SHKREBETS, A. I., PERSHIN, G. N., MIKERINA, A. L., Krasnodar Polytechnical Institute, USSR Institute of Chemical-Pharmaceutical Scientific Research imeni S. Ordzhonikidze, Moscow

"Synthesis and Germistatic Activity of Several 5-Substituted 2-(α-furyl)-1,3-dioxanes"

Moscow, Khimiko-Farmitsevticheskii Zhurnal, Vol 7, No 11, Nov 73, pp 25-27

Abstract: 2-(α-furyl)-5-ethyl-5-nitro-1,3-dioxane, 2-(α'-methylfuryl-α)-5-ethyl-5-nitro-1,3-dioxane, 2-(α'-bromofuryl-α)-5-ethyl-5-nitro-1,3-dioxane and 2-(α'-indofuryl-α)-5-ethyl-5-nitro-1,3-dioxane were synthesized and identified using IR and UV spectraphotometry and elemental analysis. The biological activity of these compounds and six others -- 2-(α'-nitrofuryl-α)-5,5-dimethyl-1,3-dioxane, 2-(α'-nitrofuryl-α)-5-ethyl-5-methylol-1-3-dioxane, 2-(α'-nitrofuryl-α)-5-methyl-5-methylol-1,3-dioxane, 2-(α'-nitrofuryl-α)-5,5-bis-(chloromethyl-)-1,3-dioxane, 2-(furyl-α)-5-methyl-5-methylol-1,3-dioxane, and 2-(α'-bromofuryl-α)-5-ethyl-5-methylol-1,3-dioxane -- was tested against various microorganisms. It was noted that the addition of bromine, iodine, and especially the nitro-group the furyl ring enhanced, while addition of the methyl group lessened physiological activity of the compounds.

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Luminescence

UDC 535.379:542.943.4:547.724.1

USSR

KUL'NEVICH, V. G., and YEROFEYEVA, Krasnodar Polytechnic Institute, Department of Organic Chemistry

"Chemiluminescence During the Oxidation of Furfural"

Ivanovo, Izvestiya Vysshikh Uchebnykh Zavedeniy, Khimiya i Khimicheskaya Tekhnologiya, Vol XIII, No 10, 1970, pp 1,466-1,471

Abstract: Chemiluminescence methods have assumed increasing importance in recent years in assessing the kinetics and mechanisms of various complex processes.

The authors' study represents the first attempt to apply these methods to the oxidation of furfural. They studied experimentally the effects of heating in a closed vessel, of oxygen concentration, of temperature, and of several other factors, on the intensity of chemiluminescence.

It was concluded that the method in question is feasible in the case of furfural oxidation, given sufficiently sensitive equipment. The data obtained are illustrated graphically.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EFFECT OF ULTRASOUND ON FURFURAL HYDROGEN PEROXIDE WATER SYSTEMS -U-

AUTHOR-(03)-BADOVSKAYA, L.A., KARYAKIN, A.V., KULNEVICH, V.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL., 1970, 13(2), 221-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--FURFURAL, HYDROGEN PEROXIDE, ULTRASONIC RADIATION, FUMARIC ACID, ACRYLIC ACID, FORMIC ACID, MALEIC ACID, SUCCINIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0169 STEP NO--UR/0153/70/013/002/0221/0224

CIRC ACCESSION NO--AT0132446

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

2/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0132446

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRODUCTS OF THE REACTION OF FURFURAL (I) WITH H SUB2 O, 30PERCENT H SUB2 O SUB2, OR 1.5-3.0PERCENT H SUB2 O SUB2 AND H SUB2 O, FOR 5 HR AT 25DEGREES, WHILE THE MIXT. IS ULTRASONICALLY IRRADIATED AT 800 KHZ, INCLUDE PYROMUCIC, FUMARIC, BETA FORMYLACRYLIC, FORMIC, MALEIC, SUCCINIC, AND MALIC ACIDS. UNDER IRRADN., THE RATE OF LOSS OF I AND OF FORMATION OF TOTAL ACIDS IS 2 OR MORE TIMES AS RAPID AS IN ITS ABSENCE. FURTHER, MALIC ACID IS NOT A SIGNIFICANT PRODUCT IN THE ABSENCE OF ULTRASONIC IRRADN., SO THAT THE EFFECT OF THE LATTER IS NOT ONLY AN ACCELERATION OF OXION., DUE IN PART TO THE PRODUCTION OF PEROXIDE DURING IRRADN., BUT ALSO INCLUDES INITIATION OF HYDROGENATION REACTIONS. FACILITY: KRASNODAR. POLITEKH. INST., KRASNODAR, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UNCLASSIFIED PROCESSING DATE--23OCT70

1/2 008

TITLE--FURFURYL ALCOHOLS FROM THE CORRESPONDING ALDEHYDES -U-

AUTHOR-(04)-SMIRNOV, V.A., KULNEVICH, V.G., SOLTOVETS, G.N., SEMCHENKO, D.P.

COUNTRY OF INFO--USSR

SOURCE--GER. OFFEN. 1,803,373

DATE PUBLISHED--14MAY70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, FURFURYL ALCOHOL, ALDEHYDE, ORGANIC SYNTHESIS, PENTOSE, HEXOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1422 STEP NO--GY/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0120210

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 008

CIRC ACCESSION NO--AA0120210

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FURFURYL ALCS. (I, R EQUALS H, CH SUB2 OH, ME, BR, OR CL) WERE PREPD. IN 90-98PERCENT YIELD BY TREATING THE CORRESPONDING ALDEHYDES (II) WITH NA AMALGAM AND PASSING CO SUB2. AQ. SOLNS., AQ. ALC. SOLNS., OR SOLNS. OBTAINED FROM THE HYDROLYSIS OF PENTOSANS OR DEHYDRATED HEXOSE WERE USED AS SOLNS. OF II. THUS, A 3.34PERCENT AQ. SOLN. OF 6.98 G I (R EQUALS CHO) WAS ADDED TO 0.3 L. 2.36N NA AMALGAM AT A RATE OF 16 ML-MIN AT 18DEGREES AND CO SUB2 WAS BLOWN THROUGH AT 45 L.-HR TO GIVEN 6.3 G I (R EQUALS CH SUB2 OH).

FACILITY: ORDZHONIKIDZE, S., POLYTECHNIC INSTITUTE NOVOCHERKASSK AND KRASNODAR POLYTECHNIC INSTITUTE.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SPECTROPHOTOMETRIC METHOD FOR THE QUANTITATIVE DETERMINATION OF FURAN ALDEHYDES AND THEIR CONVERSION PRODUCTS IN REACTION MIXTURES -U-

AUTHOR-(03)-KULNEVICH, V.G., SOLTOVETS, G.N., ZELIKMAN, Z.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 283-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTROPHOTOMETRIC ANALYSIS, FURAN, ALDEHYDE, ALCOHOL, ACETAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0747 STEP NO--UR/0409/70/000/002/0283/0284

CIRC ACCESSION NO--AP0119654

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

2/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119654

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE UV SPECTRA OF FURAN ALDEHYDES (I), ALCS. (II) AND ACETALS (III) WERE STUDIED. A SPECTROPHOTOMETRIC METHOD FOR THE QUANT. DETN. OF I, II, AND III SEPARATELY OR IN THE REACTION MIXT. WAS DEVELOPED. FACILITY: KRASNODAR, POLITEKH. INST., KRASNODAR, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

1/3 017 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--PROCESSING OF STILL RESIDUES OF FURFURAL PRODUCTION -U-

AUTHOR--BADOVSKAYA, L.A., KULNEVICH, V.G., FIRSOVA, L.I., SHAPIRO, YU.M., KURZIN, M.I.

COUNTRY OF INFO--USSR

SOURCE--GIDROLIZ. LESOKHIM. PROM. 1970, 23(2) 23-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FURFURAL, FURAN, PEROXIDE, POLAROGRAPHY, GAS CHROMATOGRAPHY, UV SPECTRUM, SUCCINIC ACID, MALEIC ACID, FUMARIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/0147 STEP NO--UR/0328/70/023/002/0023/0025

CIRC ACCESSION NO--AP0106809

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

2/3 017 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106809

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 2 METHODS PRESENTLY USED FOR PROCESSING RESIDUES FROM FURFURAL RECTIFICATION ARE THE RECOVERY OF FURFURAL (I) AND METHYLFURFURAL (II) AND DECARBONYLATION TO SYLVAN (ALPHA MEHTYL-FURAN). THE METHOD PROPOSED CONSISTS IN OXIDN. OF THE RESIDUES WITH H SUB2 O SUB2 TO YIELD ORG. ACIDS. ALSO DEVELOPED WAS A NEW METHOD FOR CHEM. ANAL. OF THE RESIDUE, BETTER SUITED FOR INDUSTRIAL CONTROL THAN EITHER POLAROGRAPHY OR GAS CHROMATOG. THE METHOD, WHICH HAS BEEN DESCRIBED ELSEWHERE (SHAPIRO AND KUL'NEVICH, 1969), IS BASED ON UV SPECTROMETRY AND CALCNS. OF I CONCN. FROM THAT OF A STD. SOLN. AND THE OPTICAL DS. OF THE TEST SAMPLE AND THE STD. SOLN. THE AMT. OF IMPURITIES ARE DETD. FROM DIFFERENTIAL SPECTRA. THE ACCURATE METHOD MAKES POSSIBLE SEP. I AND II DETNS. EVEN IN STRONGLY RESINIFIED MATERIAL. COM. RESIDUES ANALYZED CONTAINED 22-95PERCENT FURALDEHYDES, DEPENDING ON THE RAW MATERIAL AND THE I PRODN. METHOD. THEY WERE OXIDIZED WITH 30PERCENT H SUB2 O SUB2 AT A MOLAR RATIO OF FURALDEHYDES-H SUB2 O SUB2 OF 1:3, A TEMP. OF 64 PLUS OR MINUS 1DEGREE, WITH INTENSE MIXING FOR 4 HR. THE QUAL. AND QUANT. COMPN. OF THE OXIDN. PRODUCTS WERE ANALYZED BY PAPER, COLUMN, AND THIN LAYER CHROMATOG. OXIDN. CONVERTED I TO A MIXT. OF CRYST. ACIDS (MALEIC, FUMARIC, AND SUCCINIC). II WAS CONVERTED TO BETA ACETYLACRYLIC (III) AND LEVULINIC ACID (IV). THE RESIDUAL PEROXIDES WERE DECOMPD. BY TREATMENT WITH THIOUREA (1PERCENT BASED ON THE VOL. OF REACTION PRODUCTS). THE CRYST. ACIDS WERE SEPD. BY RECRYSTN. FROM HOT WATER, AND IV BY DISTN. (70DEGREES-5 MM). IV IS RECOVERED BY EVAPN. OF THE SOLVENT AFTER EXTN.

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3/3 017

CIRC ACCESSION NO--AP0106809

ABSTRACT/EXTRACT--THE OVERALL YIELD OF THE ACID WAS 85PERCENT, AND THE PERCENT COMPN. OF THE ACIDS WAS SUCCINIC 28, IV 24, III 26, MALEIC 18, AND FUMARIC 3. HIGHER YIELDS WERE OBTAINED FROM RESIDUES WITH A HIGH INITIAL CONTENT OF ALDEHYDES. SAMPLES WITH LOW ALDEHYDE CONTENT GAVE POOR YIELDS (AT CONTENT 22PERCENT, THE YIELD OF TOTAL ACID WAS 21.6PERCENT.

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UNCLASSIFIED PROCESSING DATE--11SEP70

1/3 015

TITLE--COMPOSITION OF PEROXIDES AND ACIDS OF FURFURAL CONDENSATES -U-

AUTHOR--KARDAYLOVA, K.M., ABRAMYANTS, S.V., KULNEVICH, V.G.

COUNTRY OF INFO--USSR

SOURCE--GIDROLIZ. LESOKHIM. PROM. 1970, 23(1) 8-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FURFURAL, PEROXIDE, CARBOXYLIC ACID, FORMIC ACID, MALEIC ACID, SUCCINIC ACID, PROCESSED PLANT PRODUCT, POLAROGRAPHY, CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0145 STEP NO--UR/0328/70/023/001/0008/0009

CIRC ACCESSION NO--AP0106809

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UNCLASSIFIED PROCESSING DATE--11SEP70

2/3 015

CIRC ACCESSION NO--AP0106808

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUNFLOWER HUSKS WERE HYDROLYZED IN A PILOT PLANT APP. AND EVERY 10 MIN, SAMPLES OF THE HYDROLYZATE DISCHARGED WERE ANALYZED FOR THEIR CONTENTS OF PEROXIDES AND ACIDS, AS WELL AS OF FURFURAL. ORG. ACIDS WERE SEPD. BY COLUMN CHROMATOG. ON SILICA GEL, H SUB2 O SUB2 WAS DETD. BY CERIMETRY, PERACIDS BY IODOMETRY, AND SOME PEROXY COMPDS. BY POLAROGRAPHY. THE MAX. FORMATION OF PEROXIDES WAS OBSD. DURING THE HEATING PERIOD; THEY WERE DISCHARGED DURING THE 1ST 10-15 MIN OF FURFURAL VAPOR EVOLUTION. AT THE END OF THE HEATING PERIOD, THERE WAS 5-9 MG PEROXIDE O-MOLE FURFURAL. THE CONCN. OF H SUB2 O SUB2 AND PERACIDS WAS THE HIGHEST AT THE BEGINNING AND AT THE END OF THE COOK. PYROMUCIC, FUMARIC, ACETIC, BETA FORMYLACRYLIC, FORMIC, MALEIC, AND SUCCINIC ACIDS WERE FOUND. A COMPARISON OF THE DATA WITH THOSE OBTAINED IN LAB. AUTOXION. OF FURFURAL SHOWED THAT FURFURAL REACTS WITH O IN THE HYDROLYZER. EXCEPT FOR HOAC, WHICH ORIGINATES FROM HYDROLYSIS OF PLANT TISSUES, ALL ACIDS ARE THE PRODUCTS OF FURFURAL AUTOXION. BY A CHAIN REACTION IN THE PRESENCE OF ATM. O. THE PEROXIDES CANNOT SERVE AS AN INDEX OF OXIDIZABILITY BECAUSE OF THEIR LABILE NATURE. A MORE RELIABLE INDEX WOULD BE THE CONCN. OF ACIDS, BUT HERE ALSO THEIR CONVERSION AT HIGH TEMP. MUST BE TAKEN INTO CONSIDERATION. THE MOST STABLE OF THE ACIDS IS HCO SUB2 H AND ITS YIELD CAN SERVE AS AN INDEX OF FURFURAL LOSSES BY OXIDN. IN THE HYDROLYZER. ACCORDING TO THIS INDEX, THE AMT. OF FURFURAL FORMED IN THE HYDROLYZER IS SIMILAR TO 130PERCENT IF THE ACTUAL YIELD IS TAKEN AS 100PERCENT. FURTHER LOSSES OCCUR THROUGH DEGRADATION OF PENTOSES WITHOUT FURFURAL FORMATION.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

3/3 015 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106808

ABSTRACT/EXTRACT--THUS, THE ROLE OF MOL. O DURING HYDROLYSIS IS MORE IMPORTANT THAN THAT GENERALLY ASSUMED, AND SPECIAL MEASURES ARE NEEDED TO PREVENT OR AT LEAST REDUCE THE LOSSES. REPLACEMENT OF O BY CO SUB2 INCREASES THE YIELD OF FURFURAL BY 12-15PERCENT. UNDER INDUSTRIAL CONDITIONS, REDN. OF OXION. NOT ONLY INCREASES THE FURFURAL YIELD, BUT ALSO IMPROVES THE QUALITY OF THE PRODUCTS FROM PLANT MATERIAL HYDROLYZATES.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

1/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--BETA,ACETYLACRYLIC ACID -U-

AUTHOR-(02)-BADOVSKAYA, L.A., KULNEVICH, V.G.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 220,257
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACRYLIC ACID, CHEMICAL PATENT, ALKYL RADICAL, FURFURAL, OXIDATION, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1582 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0135223

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

2/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0135223

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BETA,ACETYLACRYLIC ACID IS PREPD. BY OXION. OF 5,METHYLFURFURAL WITH H SUB2 O SUB2 AT 65DEGREES.

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Miscellaneous

USSR UDC 532.573

MYASNIKOV, S. K., KULOV, N. N., MALYUSOV, V. A., and ZHAVORONKOV, N. M., Institute of General and Inorganic Chemistry Imeni N. S. Kurnakov, Acad. Sc. USSR

"Effective Velocity of the Free Surface of a Flowing Liquid Film"

Moscow, Teoreticheskiye Osnovy Khimicheskoy Tekhnologii, Vol 6, No 6, Nov-Dec 72, pp 893-899

Abstract: A method was developed for the determination of the effective rate of movement of a free surface of a flowing liquid film $\bar{w}_L$. On the basis of the experimental data obtained, equations have been derived for the calculation of $\bar{w}_L$ for four conditions of flowing: transitional flow ($35 \leq Re_L \leq 80$), first wave laminar flow ($80 \leq Re_L \leq 280$), second wave laminar flow ($280 \leq Re_L \leq 1000$), and turbulent flow ($Re_L > 1600$). It has been shown that the ratio of $\bar{w}_L$ to the average liquid velocity $\bar{v}_L$ in the range of laminar flow conditions is less than 3/2. The velocity on the liquid film surface has also been determined in presence of surface active materials and dilute aqueous solutions of polymers.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

KULOKOVA, E. TS.

So: JPRS 54354
29 OCT 1971

UDC: 616.24-002.2-082.4

ORGANIZATION OF TREATMENT OF CHRONIC PNEUMONIA IN A SPECIALIZED PULMONOLOGICAL DEPARTMENT

[Article by E.Ts. Kulokova, chairs of hospital therapy (headed by Professor V.S. Smolenskiy), social hygiene and public health organization (headed by Professor A.I. Serenko, corresponding member of the USSR Academy of Medical Sciences), First Moscow Medical Institute imeni I.M. Sechenov; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 9, 1971, submitted 11 May 1971, pp 30-32]

The current 1971-1975 five-year plan provides for further development of specialized medical care for the population, and for improving it through the network of multispecialty large hospitals now under construction.

The clinics of the First Moscow Medical Institute imeni I.M. Sechenov today constitute a complex of therapeutic institutions representing almost all specialized departments needed for the complete educational, scientific, and therapeutic process.

Better training of physicians is involved in the constant improvement of therapeutic and diagnostic work. Recognizing that specialization of the hospital and resources is the main direction in operation of clinics, the heads of clinical chairs, in collaboration with the institute's public health organizers, undertaken the task of executing the plans for hospital bed specialization as far back as 1967.

In the present investigation we submit the results of analysis of the quality of diagnostics and therapy of patients with chronic pneumonia before and after opening a pulmonological department in the hospital therapeutic clinic (director of the clinic: Professor V.S. Smolenskiy). The case histories of employed patients, treated at this clinic in 1965-1969 were submitted to analysis. This period includes the years prior to creation of the pulmonological department (1965-1966), the years during which it was in the process of being organized, staffed, and the necessary equipment was being acquired, and years of regular operation of the already created department (1966-1969).

The case histories were analyzed in collaboration with the head of the pulmonological department. An expert chart for chronic pneumonia patients was developed at the chair of social hygiene and public health organization and

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USSR UDC 541.18.04:547.1'118

MATROSOV, YE. I., KULUMBETOVA, K. ZH., ARKHIPOVA, L. I., MEDVED', TA. YA., and KABANCHIK, M. I., Institute of Hetero-Organic Compounds, USSR Academy of Sciences

"Acid-Base Properties of Substituted Tetraphenyl-Methylene-Diphosphine Dioxides"

Moscow, Izvestiya Akad. Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 72, pp 199-201

Abstract: Potentiometric titration with perchloric acid of the dioxides of tetraphenylmethylenediphosphines substituted in the methilene bridge was carried out in nitromethane. The obtained values of the alkalinity constant pK_a (CH_3NO_2) were found to be linearly related to the σ^*-constants of the substitutes.

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USSR UDC 66.095.25+661.718.1

POLIKARPOV, YU. M., KULUMBETOVA, K. ZH., MEDVED', T. YA., KABACHNIK, M. I., Institute of Organo Elemental Compounds, Moscow, Academy of Sciences USSR

"Alkylation of Tetraphenylmethylenediphosphine Dioxide"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 70, pp 1326-1329

Abstract: Alkylation of the potassium salt of tetraphenylmethylenediphosphine dioxide (I) with alkyl halides in boiling xylene gave a series of tetraphenyl-(R)-alkylidenediphosphine dioxides (R derivative and m.p. in °C are reported): C_2H_5-, 257-258; C_4H_9-, 204-206; C_6H_{13}-, 172-173; $C_{12}H_{25}$-, 116-118; $C_6H_5CH_2$-, 217-218. In a similar fashion (I) and CH_2Br_2 gave tetraphenylmethylenediphosphine dioxide and its vinylidene homologue, m.p. 197-199°; 1,6-dibromohexane and (I) gave oxaphenylhexamethylenetetraphosphine tetroxide, m.p. 302-304°. while the p-xylylenedibromide yielded octaphenyl-p-xylylene tetraphosphine tetroxide m.p. 324-325°, and 1,5-dibromopentane gave tetraphenylcyclohexylidenediphosphine dioxide, m.p. 254-255°.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

KULYA, V. I.

"Multidimensional Scaling and the Problem of Recognition of Speech Patterns"

VI Vses. Seminar "Avtomat. Raspoznavaniye Slukhovykh Obrazov (ARSO VI) Dokl. i Soobshch. [Sixth All-Union Seminar on "Automatic Recognition of Auditory Patterns (ARSO VI), Reports -- Collection of Works], Tallin, 1972, pp 116-120 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V852).

Translation: The ideas of Shepard and Kruskal concerning geometric representation of the set of patterns in the form of a three-dimensional configuration of points which reflects the experimental estimates of mutual closeness of patterns are developed. A strict solution is presented to the problem of multidimensional scaling of patterns. Using studies of 6 isolated vowels of Russian speech, an example, the presence of 5 types of systems of vowels reflecting the individual peculiarities of the speakers is demonstrated. A self-teaching algorithm is developed for recognition of vowels with high reliability for a broad class of speakers under arbitrary acoustical conditions.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR UDC 8.74

KULYA, V. I.

"Multidimensional Scaling, and the Problem of Recognizing Audible Patterns"

Tallin, VI Vses. seminar "Avtomat. raspoznavaniye slukhovykh obrazov (ARSO VI)". Dokl. i soobshch.--sbornik (Sixth All-Union Seminar on Automatic Recognition of Audible Patterns. (ARSO VI). Papers and Reports--collection of works), 1972, pp 116-120 (from RZh-Matematika, No 1, Jan 73, abstract No 1V852)

Translation: The paper develops the ideas of Shepard and Kruskal on geometric representation of a set of patterns in the form of a spatial configuration of points which reflects experimental evaluations of the mutual similarity of patterns. A strict solution is given for the problem of multidimensional scaling of patterns. An example of a study of six isolated vowels in Russian speech illustrates the existence of five types of vowel systems which reflect the ideosynchrasies of the speakers. A self-teaching algorithm of vowel recognition is developed with high reliability for an extensive class of speakers and arbitrary acoustic conditions.

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Cybernetics

KULYA, V.I.

[illegible]

[illegible]

[illegible]

ON ONE METHOD OF INFORMATION OUTPUT IN SPEECH FORM FROM COMPUTERS

[Article by [illegible] and [illegible] Kulya; Kiev, [illegible], Ukrainian, No 6, 1971, pp [illegible]]

[illegible]

The creation in computers of the ability to express output information in speech form means a new direction in the development of external apparatus or even a new direction in making direct connections between people and computers. Since a tendency has been noted in computers of the third and fourth generations toward the operator's performance with the machine in the realm of direct reciprocal action (in the realm of dialogue, as it were), it is therefore useful in a number of cases to give a speech form to the intermediate information which is transmitted from machines to people.

It should be expected that speech output will find wide application in various automated information systems [1, 2].

To achieve speech output of data from computers means to create on the basis of these machines a certain automated speech information system (ASIA) which has in its composition algorithms for transforming output data with the goal of giving them a speech form, a certain auxiliary mass of data which are essential for this transformation, and finally, a certain external apparatus with whose help the speech information obtained in discrete form is transformed into a speech signal.

Restrictions concerning the rapid action and memory capacity of ZP computers, and also the large size of the speech signal, for the memorization of one second of which in digital form a memory capacity of the order of 50,000 double units is necessary [3, 4], condition the application of methods of speech synthesis in achieving speech output.

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1/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--SIMULATION OF ABRASIVE WEAR OF THE INTERNAL SURFACES OF LIGHT ALLOY DRILL PIPES -U-

AUTHOR-(03)-KULYABIN, G.A., BOLSHAKOV, I.F., KOPYLOV, V.YE.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(2), 31-4

DATE PUBLISHED--------70

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

TOPIC TAGS--CELLULOSE, ALLOY, WELL DRILLING MACHINERY, WEAR RESISTANCE/(U)CM CELLULOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1636 STEP NO--UR/0152/70/013/002/0031/0034

CIRC ACCESSION NO--AT0118615

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

2/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0118615

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WEAR OF TURBODRILL PIPES WAS MAINLY DUE TO THE ABRASIVE EFFECT OF THE SAND PARTICLES INCLUDED IN THE DRILLING FLUID. A WEAR OF 1 MM OF THE INTERNAL DIAM. WAS ATTAINED AFTER 1100-50 HR WITH WATER, CONTG. 2PERCENT SAND AT FLOW VELOCITY 2.7 M-SEC. ADDN. OF 0.3PERCENT CM CELLULOSE BASED ON THE DRILLING FLUID REDUCED THE WEAR BY 50PERCENT. A MORE THOROUGH REMOVAL OF SAND WAS RECOMMENDED. A SCHEME OF THE EXPTL. INSTALLATION AND RESULTS ARE PRESENTED.

FACILITY: TYUMEN. IND. INST., TYUMEN, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

UDC 577.1:615.7/9

KULYABKO, P. N., DUBENKO, R. G., and KONYSHEVA, V. D.

"Mechanism of the Radioprotective Effect of Nitrogen-Containing Heterocyclic Compounds"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiologically Active Substances. Republic Interdepartmental Collection), 1972, No 4, pp 87-89 (from RZh-Biologicheskaya Khimiya, No 4, Feb 73, Abstract No 4 F1931 by V. G. Mazayeva)

Abstract: The effect of derivatives of 1-aryltetrazoline-5-thiones and 1-aryltriazoline-2,5-dithions (a total of 15 compounds) on O_2 tension in the spleen, liver, and muscles of rats was studied. The tetrazoline aryl derivatives had no effect (or they increased) O_2 tension in the tissues, whereas the triazoline-2,5-dithion derivatives decreased it; the peak was reached in the first 20 to 40 minutes. 1-phenyltriazoline-2,5-dithion had the greatest effect in this respect. It was concluded that the mechanism of the radioprotective action of the triazoline-2,5-dithion derivatives (but not the tetrazoline-5-thion derivatives) is based on an "oxygen effect."

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

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UDC 528.514

KULYASOV, A. G.

"GD-317m Optical Range-Finder Attachment"

Leningrad, Optiko-mekhanicheskaya promyshlennost', No. 4, Apr 71, pp 64-65

Abstract: A miniature range-finder, the GD-317m, intended as an attachment to the telescope of a theodolite or other geodesic instrument is described. The design of the GD-314 range-finder with phase detection in the photoelectron multiplier is applied in the attachment. The miniature range-finder is a modification of the DNK-02 attachment and differs from it in its optical design and optical-mechanical portions with the result that further range of operation was achieved without a considerable increase in scale. Its weight is about 1.5 kg. In field tests conducted in November 1970 in Leningrad, distances up to 1.2 km were measured, which considerably exceeds the operating range of the DNK-02. The mean square error was ±23 mm in measurements of a distance of 929.984 m.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

1/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--PASSIVATION LAYERS FORMED ON ZINC DURING ANODIC POLARIZATION IN STRONG ALKALINE ZINCATE ELECTROLYTES -U-

AUTHOR-(04)-POPOVA, T.I., SIMONOVA, N.A., KULYAVIK, W.YA., KABANOV, B.N.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(1), 104-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--ELECTROLYTE, ANODE POLARIZATION, METAL PASSIVATION, ZINC, METAL ELECTRODE, OXIDE FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0695 STEP NO--UR/0364/70/006/001/0104/0108

CIRC ACCESSION NO--AP0105671

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

2/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105671

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS STUDIED OF THE PASSIVATION POTENTIAL OF A ZN ELECTRODE, THE COMPN. OF THE ELECTROLYTE, AND CONDITIONS OF DIFFUSION ON THE THICKNESS AND COMPN. OF THE OXIDE FILMS DEPOSITED ON THE ELECTRODE. THE ACTIVATION OF ZN ELECTRODES PASSIVATED AT 0.0 V BEGAN AT MINUS0.3 AND WAS COMPLETE AT MINUS1.3 V. THE REDN. POTENTIAL WAS IN A SEMI LOG RELATION TO THE EXCESS O REMAINING IN THE FILM. AN INCREASE IN THE CATHODIC C.D. SHIFTED THE REDN. POTENTIAL OF THE EXCESS O TOWARD THE NEG. SIDE. UP TO MINUS1.3 V. ALL THE O ABOVE STOICHIOMETRIC IN THE PASSIVATION FILM IS REDUCED ACCORDING TO: (1-M) ZNO SUB1 PLUS M PLUS H SUB2 O PLUS 2E PRIMENEGATIVE YIELDS (1-M) ZNO PLUS 2OH PRIMENEGATIVE, WHERE 1 IS LARGER THAN M IS LARGER THAN 0. WHEN THE PASSIVATION IN SOLNS. CONTG. NO ZINCATE WAS SLIGHT, THE EXCESS OVER STOICHIOMETRIC O IN THE FILM WAS 5-7, AND WHEN THE PASSIVATION WAS HEAVY, IT ROSE TO 10 AT. PERCENT. IN THE CASE OF PASSIVATION IN ALK. SOLNS. SUPERSATD. WITH ZINCATE, THE VALUES WERE 1-2 AND 3 AT. PERCENT, RESP. EXPTS. WITH AGITATING THE SOLN. SHOWED THAT THE QUANTITY OF ELECTRICITY REQUIRED TO DISSOLVE THE PASSVATING FILM AND ACTIVATE THE ELECTRODE DEPENDS ON THE RATE AT WHICH HO SUB2 PRIMENEGATIVE IS REMOVED FROM THE ELECTRODE.

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AA0052675 KULYGIN V.V. UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 2-70

243167 GANTRY CRANE WITH PROGRAMME CONTROL, e.g. for use in stores. has load trolley carrying a vertically-moving traverse with load grips. The traverse has guide rollers on either side, moves in slots in brackets fixed to the load carriage. This prevents the load deviating from the vertical while being lowered. Gantry 1 rests via legs 2 and 3 on trolleys 4 and 5. Load trolley 6 carries traverse 7 with vacuum grips 8. On traverse 7 is vacuum receiver 9. The traverse has guide rollers 10 moving in slots 11. On trolley 6 are mechanisms for moving the trolley, raising and lowering the traverse, and a vacuum pump, covered by casing 12. The crane-moving mechanism is under casing 13. The drives of these mechanisms are supplied via suspended cable 14. Control mechanism is in box 15. There is a hand control panel for emergencies. To

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AA0052675

operate under programme control, the operator selects on the control panel the number of the position where the load is to be lowered, and presses the "start" button. The crane then moves to the required position, picks up the load, returns and lays it in the working position. 10.4.67. as 1148575/27-11, KLIMENKO, I.M. et al (26.9.69) Bul. 16/5.5.69. Class 35f, Int. Cl. B 66c.

Klimenko, I. M.; Kulygin, V. V.; Lavrov, A. A.; Vigont, R. P.

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19821440

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

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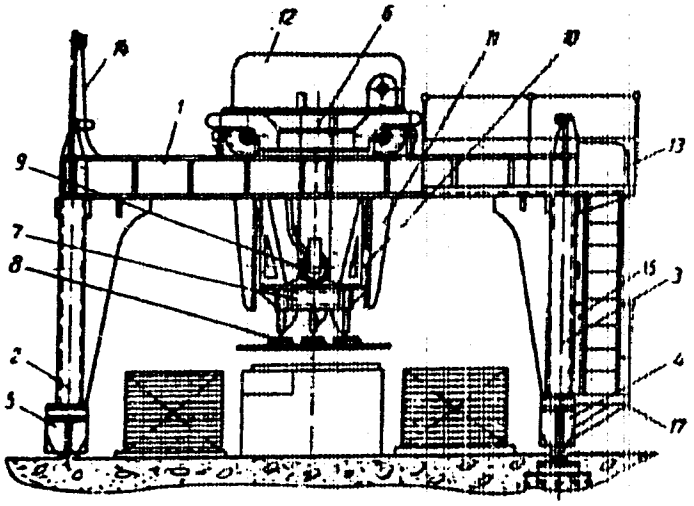

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR UDC 591.1.15

GORKIN, V. Z., AKOPYAN, ZH. I., KULYGINA, A. A., and ZEYNALOV, T. A.

"Disturbances of Deamination of Some Nitrogen Compounds and a Method of Normalizing Them Experimentally"

Byul. eksperim. biol. i med. (Bulletin of Experimental Biology and Medicine), 1971, 72, No 11, pp 42-45 (English summary) (From RZh-Biologicheskaya Khimiya, No 4, 25 Feb 72, Abstract No 4F1256 from summary)

Translation: White rats which had been x-irradiated (1000 rad dose) were used in the experiments. Diminution of monoaminoxidase activity, accompanied by the appearance of histamine and AMP deaminase activity, occurs in rat liver mitochondria after irradiation or intraperitoneal injection of oxidized oleic acid. Repeated injections of rats with adenozine-2'(3')-monophosphate result in normalization of these disturbances of the deamination of nitrogen compounds.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR UDC: 51

KULYGINA, M. M. and NIKITIN, A. V.

"Gradient Method of Solving Transport Problems"

Sb. tr. Vses. zaoch. politekhn. in-t (Collection of Works, All-Union Correspondence Polytechnical Institute) No 79, 1973, pp 33-40 (from RZh--Matematika, No 1, 1974, Abstract No 1V474)

Translation: An algorithm is proposed for solving a transport problem which consists in solving a dual problem. Let the original problem be written as

$$\sum_{i,j} c_{ij} x_{ij} \to \min$$

with $\sum_j k_{ij} = a_i$, $\sum_i k_{ij} = b_j$. The specific function of the dual problem is $T(U,V) = \sum_j b_j v_j - \sum_i a_i u_i$, where u_i are the potentials of

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

KULYGINA, M. M. and NIKITIN, A. V., Sb. tr. Vses. zaoch. politekhn. in-t, No 79, 1973, pp 33-40

the lines and v_j are the potentials of the columns. The condition $v_j = \min_i (u_i + c_{ij})$, required for optimity of the plan, is fixed. This permits rewriting T(U,V) as S(U), where S(U) is a piecewise linear convex function.

The gradient method is considered for finding the maximum of S(U). It is shown that its realization is connected with the derivation of the bonding components of a bi-partite graph at each iteration. A description is given of a "weaker" algorithm which does not involve graphs. Ye. Dinits.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

UDC: [621.318.371:537.312.62]:001.4

SYCHEV, V. V., ZENKEVICH, V. B., AL'TOV, V. A., KULYKOV, N. A., Moscow

"The 'Double' Solenoid Method for Studying Dynamic Processes in a Superconducting Winding"

Moscow, Izv. AN SSSR: Energetika i Transport, No 4, Jul/Aug 72, pp 81-87

Abstract: A method is worked out for experimental investigation of processes of propagation of the normal zone in a superconducting winding. The proposed method can be used for precision determination of the principal characteristic currents in combination superconductors used in a winding. The experimental installation described completely eliminates interference from the power supply and control equipment. The procedure is relatively simple and can be recommended as a convenient tool for predicting the behavior of a combined conductor in large superconducting windings.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

UDC: [621.315.55:537.312.62]:001.4

SYCHEV, V. V., ZENKEVICH, V. B., AL'TOV, V. A., KULYKOV, V. A., Moscow

"The Controllable Low-Resistance Shunt Method of Studying the Current--Voltage Curves of Combined Superconductors"

Moscow, Izv. AN SSSR: Energetika i Transport, No 4, Jul/Aug 72, pp 88-96

Abstract: A method is described for determining the current-voltage characteristics of combined superconductors which can be used to study both short specimens (under isothermal conditions or when there is a temperature gradient lengthwise of the specimen), and specimens in the form of solenoids with open or tight windings. The proposed experimental procedure is simple and convenient, and can be used to study the state of thermal equilibrium of combined superconductors over the entire range of operating temperatures. The method has high sensitivity and gives the current-voltage curves of combined superconductors with negative resistance.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

172 018 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--THE ORGANIZATION OF AGITATION AND PROPAGANDA OF BLOOD DONORSHIP IN THE MILITARY CHAST -U-

AUTHOR--KULYSOV, V.P.

COUNTRY OF INFO--USSR

SOURCE--VOYENNO-MEDITSINSKIY ZHURNAL, 1970, NR 3, P 120

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD TRANSFUSION, DONOR BLOOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0421 STEP NO--UR/0177/70/000/003/0120/0120

CIRC ACCESSION NO--AP0135890

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

2/2 018 UNCLASSIFIED

CIRC ACCESSION NO--AP0135890 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PROPAGANDA OF BLOOD DONORSHIP THE MAIN THING IS PURPOSEFULNESS AND CONTINUITY IN THE USE OF ALL AVAILABLE METHODS: ORAL, PRINTED AND GRAPHIC. LECTURES AND CONVERSATIONS LASTING NO MORE THAN 30-40 MINUTES, ILLUSTRATED BY EXAMPLES FROM THE PRACTICE OF WORK OF THE MEDICAL SERVICE OF THE CHAST' OR MEDICAL INSTITUTIONS ARE THE MOST EFFECTIVE EMTHOD OF ORAL PROPAGANDA. FOR GREATER GRAPHICNESS IT IS DESIRABLE TO ACCOMPANY THE LECTURE WITH A DEMONSTRATION OF SLIDES AND MOTION PICTURE FILMS ON BLOOD TRANSFUSION AND BLOOD DONORSHIP. IN CONCLUSION, 10-15 MINUTES SHOULD BE ALLOCATED FOR REPLIES TO QUESTIONS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--A TENSIMETRIC STUDY OF THE SYSTEM GALLIUM BROMINE -U-

AUTHOR-(02)-KULYUKIN, V.N., PETROV, YE.S.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR, NO 4, SERIYA KHIMICHESKIKH NAUK, 1970, NR 2, PP 43-50

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GALLIUM, BROMINE, VAPOR PRESSURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0578 STEP NO--UR/0289/70/000/000/0043/0050

CIRC ACCESSION NO--AP0113469

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5"

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2/2 010 UNCLASSIFIED

CIRC ACCESSION NO--AP0113469 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VAPOR PRESSURE DETERMINATIONS FOR COMPOSITIONS FROM 100 TO 0.18 ATOMIC PERCENT OF BROMINE IN THE GALLIUM-BROMINE SYSTEM WERE EXAMINED WITH A STATICAL METHOD AND USE A PYREX GAUGES OF SPOON TYPE. THE LIQUIDUS CURVES WERE OBTAINED IN THE REGION OF THE COMPOSITIONS BETWEEN 100 AND 70.0 ATOMIC PERCENT OF BROMINE WHICH ARE WITH A GOOD AGREEMENT OF THE DTA DATE. IN THE REGION OF COMPOSITIONS BETWEEN 65.0 AND 0.18 ATOMIC PERCENT OF BROMINE WERE DETERMINED BOUNDARY OF EXFOLIATION UP TO 780DEGREESK. FACILITY: INSTITUT FIZIKO-KHIMICHESKIKH OSNOV PERERABOTKI MENERALNOGO SYR'YA SO AN SSSR, NOVOSIBIRSK.

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USSR

UDC 632.93:531.551

POLYAKOV, I. M., POPOV, V. I., KUMACHEVA, YE. M.

"Effectiveness of Vitavax Against Loose Wheat Smut"

Moscow, Khimiya v Sel'skom Khozyaystve, No 1, 1972, pp 20-21

Abstract: A study was made of vitavax (2,3-dihydro-5-carboxyanilid-6-methyl-1,4-oxathiine) prepared in various forms as a fungicide in the control of loose wheat smut. Test results are presented for the Krasnodar Kray, Leningrad, Irkutsk, Novosibirsk and Moscow Oblasts for a 75% wetting powder produced by the Uniroyal Company of the USA and a mixture of the [illegible] the Murphy Company of [illegible] containing 50% vitavax and [illegible] octyl)ammonium sulfate.

The 75% wetting powder was effective in the control of [illegible] all the test areas. [illegible] disinfection of the seed [illegible] of 4-8 grams/kg (without drying), damage to the wheat [illegible] completely prevented in natural and artificial tests of [illegible] smut. The [illegible] not lower the [illegible] and on the whole it [illegible] positive effect on the [illegible]. [illegible] reduction in yield was observed only in one case. [illegible] combination [illegible] compound [illegible] been recommended for [illegible] production [illegible] under [illegible] climate [illegible]

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

Coatings

USSR

UDC 621.74.015:621.744.37

KUMAININ, I. B., BAUMAN, B. V., OREKHOV, A. I., ISAYEVA, T. A., SMOL'KIN, A. A., and ZOTOVA, N. G., Moscow Institute of Steel and Alloys"

Ceramic Antiscorching Coatings for Steel Castings"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 7, 1973, pp 53-56

Abstract: Antiscorching coatings with ceramic type bonding agents were developed on the base of metallophosphates. Starting materials for the production were orthophosphoric acid H_3PO_4, aluminum hydroxide $Al(OH)_3$, and chromium acid Cr_2O_3. The coatings possess high refractoriness and resistance, high thermal stability, and chemical inertia in the working temperature interval. They also have high technological qualities, as good covering power, and high sedimentation stability. The coatings do not contain scarce materials and are not expensive. Results of industrial tests are presented of antiscorching coatings on carbon steel and alloy steels. Comparative results of petrographic analyses of antiscorching coatings are discussed by reference to microsections of the mold and of metal-mold

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USSR

KUMANIN, I. B., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 7, 1973, pp 53-56

and metal-coating contact zones. Three figures, six bibliographic references.

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USSR

GAL'CHINETSKIY, L. P., KOSHKIN, V. M., KUMAKOV, V. M., KULIK, V. N., RUDENKO, M. I., RYABKA, P. M., ULMANIS, U. A., SHAKHOVTSOV, V. I., and SHINDICH, V. L.

"Radiation Stability Effect in Semiconductors With Stoichiometric Vacancies"

Leningrad, Fizika Tverdogo Tela, vol 14, No 2, 1972, pp 646-648

Abstract: Because such lattice defects as impurity atoms have no effect on the electrical characteristics of semiconductors of the $A^{III}_2B^{VI}_3$ type, such as In_2Te_3, Ga_2Te_3, and Ga_2Se_3, the authors were led to the assumption that irradiation of these crystals by high-energy particles would have little effect on their electrical characteristics as well. To test this assumption, they subjected crystals of In_2Te_3 and Ga_2Te_3 to irradiation by gamma quanta, fast electrons, and fast neutrons in a pulse reactor, as well as by mixed reactor radiation. Tables of the characteristics of these crystals before and after the irradiation are presented. The authors of this brief communication thank V. S. Vavilov and V. L. Vinetskiy for their helpful discussions of the results.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

1/3 . 030 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--POLYFUNCTIONAL CHARACTER OF THE RESPONSES OF SINGLE NEURONS OF THE VIGIL RAT VISUAL CORTEX -U-

AUTHOR-(02)-KUMAN, E.A., LATASH, L.P.

COUNTRY OF INFO--USSR

SOURCE--NEYROFIZIOLOGIYA, 1970, VOL 2, NR 3, PP 242-250

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WHITE RAT, NEURON, GLASS ELECTRODE, VISION, CEREBRAL CORTEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1632 STEP NO--UR/0660/70/002/003/0242/0250

CIRC ACCESSION NO--AP0123471

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UNCLASSIFIED PROCESSING DATE--30OCT70

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CIRC ACCESSION NO--AP0123471

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FIRING ACTIVITY OF THE VISUAL CORTEX SINGLE NEURONS OF UNANALSTHETIZED, UNCURARIZED ALBINO RATS WAS STUDIED WITH EXTRACELLULAR GLASS MICROELECTRODES IN THE BACKGROUND STATE AND DURING PRESENTATION OF A CERTAIN PROGRAMMED STIMULATION INCLUDING SERIES OF REPEATED SPECIFIC (FLASHES, CONTINUOUS LIGHT) AND NON SPECIFIC (CLICKS, TONE) STIMULI WHICH WERE APPLIED APART AS WELL AS IN A COMPLEX. THE NEURONAL RESPONSES INDUCED BY FLASHES AND CLICKS WERE ANALYZED WITH THE POSTSTIMULUS HISTOGRAM METHOD. THE REGULAR NEURONAL ACTIVITY SHIFTS IN RESPONSE TO FLASHES (ONE PER SEC) RESULTED IN AN INCREASE OR-AND DECREASE IN FIRING RATE AND WERE OBSERVED NOT ONLY DURING THE FIRST 150-200 MSEC (SHORT LATENCY RESPONSE, SLR) BUT LATER, UP TO 800-900 MSEC (LONG LATENCY RESPONSE, LLR) AS WELL. LLR DIFFERED FROM SLR ALSO IN GREATER VARIABILITY (INCREASING OR DECREASING DURING REPEATED STIMULUS PRESENTATION), IN PRONOUNCED INTERACTION WITH THE NON SPECIFIC STIMULI WHICH AT THE SAME TIME INFLUENCES RARELY AND WEAKLY SLR AND VERY RARELY EVOKED THE VISUAL CORTEX NEURON REACTIONS BY THEMSELVES. THE NEURON COULD RESPOND WITH SEVERAL DIFFERENT LLR'S LATENCIES. IT IS SUGGESTED THAT ONE AND THE SAME NEURON IN EACH CYCLE OF ITS EVOKED ACTIVITY CAN BE INCLUDED INTO THE DIFFERENT FUNCTIONAL BRAIN SYSTEMS, WHICH SEEM TO PROVIDE BASIS FOR BOTH THE IMMEDIATE RECEPTION OF INFORMATION MESSAGES THAT COME VIA SPECIFIC SENSORY PATHWAYS AND THE FOLLOWING TRANSFORMATION OF THEM. IT SEEMS POSSIBLE TO IDENTIFY SUCH NEURONS (MORE THAN A HALF OF ALL STUDIED) AS POLYFUNCTIONAL ONES.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UNCLASSIFIED PROCESSING DATE--30OCT70

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CIRC ACCESSION NO--AP0123471

ABSTRACT/EXTRACT--FACILITY: THE N. I. GRASHCHENKOV LABORATORY OF PROBLEMS OF CONTROLLING THE FUNCTIONS IN THE HUMAN AND ANIMAL ORGANISM, ACADEMY OF SCIENCES, USSR, MOSCOW.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

Hydraulic and Hydrostatic

UDC: 551.46.086

USSR

FEL'DMAN, A. Ye., KUMAN, V. V., KROTOV, V. A., PYANTKOVSKAYA, E. P.

"A Device for Measuring Wind Parameters From on Board a Moving Ship"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, Feb 72, Author's Certificate No 328390, Division G, filed 28 Jul 69, published 2 Feb 72, p 137

Translation: This Author's Certificate introduces: 1. A device for measuring wind parameters from on board a moving ship. The device contains a wind gauge connected to a device for converting wind speed and direction to angle of turn. The conversion device is connected to a vector plotter. The measurement device also contains instruments which relay the ship's course and velocity. As a distinguishing feature of the patent, the device is designed for vector averaging of the true wind speed and direction. For this purpose it is equipped with two averaging blocks, each of which is made in the form of an integrating drive connected through an electromagnetic clutch to a linearly rotating transformer and a device for resetting readings to zero. The device is also equipped with programming and commutating devices. The averaging blocks are connected between the output

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

FEL'DMAN, A. Ye. et al., USSR Author's Certificate No 328390

circuits of the sine-cosine rotating transformer of the central instrument and the vector plotting inputs. The power supply for the electromagnetic clutches is connected through the commutating device, which is controlled by the programming device. The output circuits of the sine-cosine rotating transformer of the central instrument are connected to the inputs of the integrating drives through controlled phasing devices. Connected between the outputs of the linearly rotating transformers of the averaging blocks and the inputs of the sine-cosine rotating transformer in the vector plotter are scaling rotating transformers and resistance-controlled transformers. 2. A modification of this device distinguished by the fact that provision is made for storage of the average vector values found for the wind parameters and for relaying these parameters in the next averaging period. The power supply for the elements of the vector plotter and the linearly rotating transformer of the averaging block is connected through the commutating device controlled by the programming device. The programming device actuates the commutating device at the end of the averaging period before reset of the readings on the averaging block.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UDC 656.61.052:551.5

USSR

KUMAN, V. V.

"Ship Meteorological Systems"

Leningrad, Sudostroyeniye, No 12, 1970, pp 41-45

Abstract: A brief survey of shipboard meteorological instruments and systems is presented. Descriptions and specifications are given for three units: the GM-6 hydrometeorological station, intended for remote measurement of the velocity and direction of the observed wind, the air temperature and humidity, and the temperature of the surface layer of the water; the KIV wind meter, intended for remote measurement of the velocity and direction of the observed wind; the KMS-1 meteorological system, intended for remote measurement of the velocity and direction of the observed wind and the true wind, the air temperature and humidity, the atmospheric pressure, and the temperature of the surface layer of the water. 6 figures, 3 bibliographic entries in the form of footnotes.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UDC 613.693

USSR

VYAZITSKIY, P. O., and KUZNICHKIN, S. D.

"The Effect of Hypodynamia on the State of External Respiration Under Various Microclimatic Conditions"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 7, 1970, pp 38-40

Abstract: The effect of hypodynamia on respiration was studied in eight young men under conditions of comfortable temperature, heat with humidity, and cold. The subjects remained for 6 days in a sitting position, with restricted movement. Oxygen consumption was determined prior to the tests and at the end of the 6 day period. It was established that hypodynamia under various climatic conditions does not lower the permeability of the lung diffusion membrane. The greatest changes were noted in the functional indicators of external respiration after hypodynamia during physical exercise at a comfortable temperature. Analysis of shifts in individual parameters of external respiration led to the conclusion that these shifts are related to the state of the cardiovascular system, namely its capability to adapt to changing situations. Examination of the subjects after exposure to hypodynamia showed that those kept in a comfortable microclimate exhibited the largest decrease in circulatory volume, both as compared to the initial value and in relation to the two other groups.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR UDC 669.14.018.44:620.192.7

TRUNIN, I. I., KUMANIN, V. I., and BOGOMOL'NAYA, R. B., Central Scientific Research Institute of Technology and Machine Building, All-Union Correspondence Machine Building Institute

"Destruction Mechanism of Heat-Resistant Steel"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 46-50

Abstract: The destruction mechanism of EP44 steel (0.22% C, 1.45% Cr, 1.03% Mo, 0.9% V, 0.15% Nb, 0.15% Ni, 0.0026% B, and 0.06% Ce) was studied during a tensile test using samples with different plasticity indicators. Samples (I) were normalized at 1100°C for 30 min and tempered at 725°C for 6 hr. Samples with high plasticity (II) were hardened in oil at 1050°C for 1 hr and tempered at 725°C for 6 hr. The metallographic analysis of deformed (broken during the tensile test) samples showed that accumulation of a critical number of micropores leads to destruction of the EP44 steel. Pores in both type of samples were localized along the grain boundaries perpendicular to the tensile axis. Most of the pores were concentrated close to the breaking point of the samples. The total volume of pores at this point was approximately 0.41-0.51% regardless of the test duration.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

TRUNIN, I. I., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 46-50

At a distance of 5 mm from the breaking point the total volume of pores decreased 3-5 times, and 10-100 times at a distance of 10 mm. The microhardness of samples I decreased upon approaching the breaking point, but for samples II it was independent of the distance from the breaking point. The metal density at the breaking point was identical for both types of samples, and was equal to 0.006-0.01 g/cm^3.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

USSR

KUMANIN, I. B., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 7, 1973, pp 53-56

and metal-coating contact zones. Three figures, six bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

1/2 035 UNCLASSIFIED PROCESSING DATE--23OCT7

TITLE--QUANTUM MECHANICAL CALCULATIONS OF DIAMAGNETIC SUSCEPTIBILITY OF GENERALIZED ALTERNANT SYSTEMS INFINITE IN ONE DIMENSION -U-

AUTHOR-(02)-KUMANOVA, M., REBANE, T.

K

COUNTRY OF INFO--USSR

SOURCE--VESTN. LENINGRAD. UNIV., FIZ. KHIM. 1970, (1), 158-61

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--CALCULATION, QUANTUM MECHANICS, DIAMAGNETISM, GRAPHITE, BORON NITRIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1794 STEP NO--UR/30[illegible]

CIRC ACCESSION NO--[illegible]

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UNCLASSIFIED

2/2 035

CIRC ACCESSION NO--AP0123591

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LONDON'S METHOD (1937) WAS USED T CALC. THE CONTRIBUTION OF THE INTRAT. PI ELECTRON CONTENTS IN THE DIAMAGNETIC SUSCEPTIBILITY, AND THE RESULTS ARE TABULATED. THE RESULTS CAN BE USED TO PREDICT AND INTERPRET THE DEPENDENCE OF THIS CONTRIBUTIO ON THE TRANSVERSE DIMENSIONS OF THE CRYSTALLITES FOR SYSTEMS SUCH AS GRAPHITE AND HEXAGONAL B NITRIDE.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

1/2 014 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--CRYSTALLIZATION OF CAST IRON -U-

AUTHOR-(02)-KUMAROV, O.S., BAKHMAT, V.A.

COUNTRY OF INFO--USSR

SOURCE--LITEINOE PROIZVOD. 1970, 2, 31-2

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CAST IRON, METAL CRYSTALLIZATION, METALLOGRAPHY, ALLOY COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1375 STEP NO--UR/0128/70/002/000/0031/0032

CIRC ACCESSION NO--AP0116824

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UNCLASSIFIED PROCESSING DATE--09OCT70

2/2 014

CIRC ACCESSION NO--AP0116324

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF TEMP. TIME CURVES AND METALLOGRAPHIC ANAL. AT DIFFERENT STAGES OF THE CRYSTN. PROCESS HAVE BEEN CARRIED OUT TO DET. THE INFLUENCE OF STRUCTURE MODIFYING ADDNS. ON THE CRYSTN. RATE OF A CAST IRON (C 3.87, SI 0.99, MN 0.2, S 0.043, P 0.085, CR 0.11PERCENT). ADDNS. OF AL, BI, SB, S AND C HAVE BEEN INTRODUCED IN AMTS. OF 0.01-0.4 WT.PERCENT. THE CRYSTN. RATE CAN DIFFER FROM THE RATE OF HEAT REMOVAL. IN PARTICULAR THE PRESENCE OF ELEMENTS PROMOTING THE NUCLEATING AND ACCELERATING THE GROWTH OF GRAPHITE (AL AND SMALL ADDNS. OF CE) NARROWS THE GAP BETWEEN CRYSTN. AND HEAT TRANSFER RATES. TEMP. RISES AND CRYSTN. ENDS SOONER. ADDNS. HAMPERING THE GROWTH OF GRAPHITE COLONIES (BI, SPHEROIDIZING ADDNS. OF CE) HAVE AN OPPOSITE EFFECT. SOME ADDNS. ARE NEUTRAL WITH RESPECT TO GRAPHITE GROWTH (SB). EXPTS. WITH S ADDNS. SHOW THAT THE CRYSTN. TIME OF THE AUSTENITE GRAPHITE EUTECTIC IS DETD., OTHER FACTORS BEING CONST., BY THE RATE OF GRAPHITE FORMATION.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 027

TITLE--SPECTRAL PROPERTIES OF GLASSY SOLUTIONS OF HYDROHALIC ACIDS WITH CYANIDE, THIOCYANATE, AND SELENOCYANATE IMPURITIES -U-

AUTHOR-(02)-KUMESKIY, V.R., KUSHNIRENKO, I.YA.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 547-51

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CYANIDE, SELENIUM COMPOUND, CYANATE, METAL HALIDE, ALKALI METAL, ABSORPTION SPECTRUM, LUMINESCENCE SPECTRUM, OPTIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1535 STEP NO--UR/0048/70/034/003/0547/0551

CIRC ACCESSION NO--AP0125163

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

2/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125163

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OPTICAL PROPERTIES WERE INVESTIGATED OF AQ. SOLNS. OF BOTH HYDROHALIC ACIDS (HCL, HBR) AND SOME ALKALI METAL HALIDES (LICL, LIBR, ETC.) WITH ON PRIME NEGATIVE, SECN PRIME NEGATIVE, AND SCN PRIME NEGATIVE ACTIVATORS AT TEMPS. OF 77 AND 300DEGREESK. NO LUMINESCENCE IS OBSD. AT ROOM TEMP. THE LUMINESCENCE SPECTRA OF 77DEGREESK AS WELL AS THE ABSORPTION SPECTRA AT BOTH TEMPS. ARE CHARACTERIZED BY FINE STRUCTURE OF THE SPECTRAL BANDS. THE EFFECT IS STUDIED OF WAVELENGTH OF EXCITING UV LIGHT, NATURE AND CONCN. OF HALIDE, ALKALI METAL, AND ACTIVATOR IONS ON THE FORM OF THE LUMINESCENCE SPECTRA AT 77DEGREESK. THE EXPTL. DATA SHOW THAT THE MOL. ANIONS ON PRIME NEGATIVE, SECN PRIME NEGATIVE, AND SCN PRIME NEGATIVE FORM, IN THE AQ. SOLNS. (OF GLASSY CHARACTER), DEFINITE ABSORPTION AND LUMINESCENT CENTERS INVOLVING ALSO BOTH ALKALI METAL AND HALIDE IONS. THE LONG WAVELENGTH SEPECTRAL BANDS IN THE ABSORPTION, EXCITATION, AND LUMINESCENCE SPECTRA ARE ASCRIBED TO DEFINITE ELECTRONIC TRANSITIONS WITHIN THE ACTIVATOR IONS. FINE STRUCTURE OF SPECTRAL BANDS RESULTS FROM INTERACTION OF THE ELECTRONIC TRANSITIONS WITH AN INTRAMOL. BIBRATION OF THE ACTIVATOR ANION. FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--LUMINESCENCE PROPERTIES OF THIOSULFATE, PYROSULFITE, AND PEROXYDISULFATE IN HF, HCL, AND HBR SOLUTIONS -U-

AUTHOR-(02)-KUSHNIRENKO, I.YA., KUMESKIY, V.R.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ 1970, 34(3), 543-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--LUMINESCENCE SPECTRUM, SULFATE, HALIDE, HYDROGEN FLUROIDE, ABSORPTION SPECTRUM, ALKALI METAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1536 STEP NO--UR/0048/70/034/003/0543/0546

CIRC ACCESSION NO--AP0125164

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 023

CIRC ACCESSION NO--AP0125164

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LUMINESCENCE SPECTRA WERE INVESTIGATED OF AQ. SOLNS. OF HF, HCL, HBR, AND SOME ALKALI METAL HALIDES WITH S SUB2 O SUB3 PRIME2 NEGATIVE, AND S SUB2 O SUB3 PRIME2 NEGATIVE IMPURITIES (10 PRIME NEGATIVE3-10 PRIME NEGATIVE1 G-ION-L.) AT 77-90DEGREESK. THE LUMINESCENCE AND ABSORPTION SPECTRA OF THE SOLNS. CONSIST, RESP., OF 1 AND 2 SPECTRAL BANDS EXHIBITING A FINE ELECTRONIC VIBRATION STRUCTURE. THE EFFECT IS STUDIED OF BOTH THE NATURE AND CONCN. OF HALIDE, ALKALI METAL, AND ACTIVATOR IONS ON THE POSITION AND INTENSITY OF THE INDIVIDUAL SPECTRAL BANDS. THE EXPTL. RESULTS INDICATE THAT S SUB2 O SUB3 PRIME2 NEGATIVE, AND S SUB2 O SUB8 PRIME2 NEGATIVE MOL. IONS FORM ABSORPTION AND LUMINESCENT CENTERS IN THE SOLNS. INVOLVING ALSO BOTH ALKALI METAL AND HALIDE IONS. THEREFORE, THE OBSD. SPECTRAL BANDS CORRESPOND TO DEFINITE INTRAMOL. ELECTRONIC TRANSITIONS WITH THE MOL. IONS. FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630002-5

UDC 621.438

USSR

LOKAY, V. I., and KUMIROV, B. A.

"Experimental Study of a Turbine Stage With Cooling Air Discharge Into its Flow-Through Section"

Kazan', Izvestiya VUZ, Aviatsionnaya Tekhnika, No 4, 1970, pp 93-100

Abstract: Results are given of an experimental study of the effect of cooling air discharged into the flow-through turbine section on its parameters. Experiments were conducted at the Turbine Laboratory of the Kazan' Aviation Institute (KAI) on a one-stage air turbine with cylindrical nozzle and impeller blades. Schematic diagrams of the experimental setup and of various blades are presented and described. The cooling air was introduced in the radial gap between the turbine case and blade tips, through slots in the rear edges of the nozzle and impeller blades, in front of the nozzle and into the axial gap between the nozzle and impeller grids. The results are presented in graphs and discussed. It is shown that in the case of a simultaneous discharge of air, cooling one or the other turbine element, into the flow-through section, a mutual compensation of the negative (into the blade edges) and positive (into axial gap) effects takes place in the range

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LOKAY, V. I., and KUMIKOV, B. A., Izvestiya VUZ, Aviatsionnaya Tekhnika, No 4, 1970, pp 93-100

of real air expenditure (0.5 to 1% on disk cooling and 1.5 to 2% on nozzle cooling).

At simultaneous air discharge from nozzle and impeller blades, the prevailing effect is positive, because of an increase in air discharge through the nozzle blade edges. It is stated that the more detailed results of these experiments and their generalization on the basis of the similarity theory are the subject of a special article. 3 formulas, 6 figures, 8 references.

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KUMIROV, B. A.

"On Determination of Flow Parameters Behind a Turbine Blade Assembly With Expulsion of the Cooling Air Across the Trailing Edges of the Vanes"

Tr. Kazan. aviats. in-ta (Works of the Kazan' Aviation Institute), 1971, vyp. 128, pp 21-31 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B289)

Translation: The system of equations (of energy, momentum and continuity) used by the author in a previous paper (Lokay, V. I., Kumirov, B. A., IVUZ, Aviats. tekhn., 1969, No 1) is reduced to a simpler form suitable for calculations without the use of a computer. The parameter

$$\bar{p}_{\text{кр}} = \frac{p_{\text{кр}}}{p_0^*} = \frac{p_{\text{кр}} - p_{\text{г}}}{\rho_{\text{г}}\left(c_{\text{г}}^2/2\right)}$$

(p_0^* is the pressure at the grating intake, $\rho_{\text{г}}$, $p_{\text{г}}$, $c_{\text{г}}$ are the parameters of the working gas at the cut-off line, $p_{\text{кр}}$ is the pressure behind the edge of a vane) which appears in the final solution is taken as equal to 0.08-0.1 in accordance with G. Yu. Stepanov's recommendations. The results of the calculations are presented in the form of relationships showing the

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KUMIROV, B. A., Tr. Kazan. aviats. in-ta, 1971, vyp. 128, pp 21-31

velocity of the gas, velocity of the mixture, and angles of exit of the mixture as functions of the amount of admixed coolant.

These results are compared with rough calculations disregarding the change in static pressure and gas temperature during admixing of air. The discrepancies for both methods are no greater than 0.5%. It is shown that the quantity $\bar{p}_{\text{нр}}$ is noticeably affected by the shape of the exhaust apertures and the dimensions of the bridging. Results are presented from experimental studies of a grating with admission of cooling air through discontinuous slots. The experiments were done at $M_{c_1} = 0.51$ and $R_{c_1} = 1.1 \cdot 10^6$. The experimental values for the velocities differ from the calculated values by no more than 1%, while the angles of flow differ by ~30'. A. G. Plotkina.

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USSR

KUMLEVA, L. A., NIKOLAYEVA, N. M., KOROLEV, A. L., MAKEYEVA, Ye. D., LEVCHENKO, D. N., ABAKUMOVA, G. S., LIPOVSKAYA, N. I.

"Lubricating Grease"

USSR Author's Certificate No 253981, Filed 27 Jul 66, Published 26 Feb 70 (From RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V295 P)

Translation: The authors propose a lubricating grease based on a dispersion medium thickened with silica gel, to which liquid polyoxyalkyleneglycol is added as the dispersion medium. In order to loosen and remove oxide films from metals, polyatomic phenol is added to the lubricant in quantities of 0.1-10%, silica gel is used in quantities of 5-15%, and liquid polyoxyalkyleneglycol -- 95-85%.

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