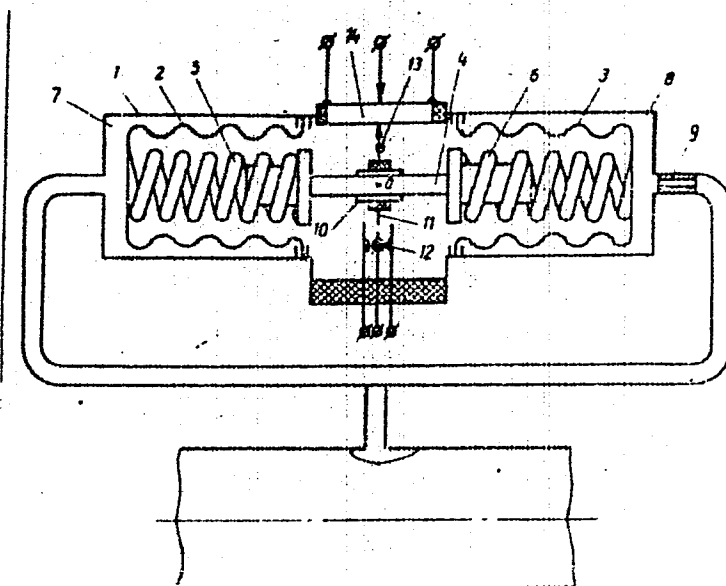


AA0044802



3/3

19771637

88

USSR

UDC: 621.376.54

KILNA, A. A., ZHUKAUSKAS, K. P., MASYULIS, I. I., VEYVERIS, G. P., Institute of Physics and Mathematics, Academy of Sciences of the Lithuanian SSR

"A Device for Discrete Demodulation of Duration-Modulated Pulses"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 3, Jan 71, Author's Certificate No 291334, Division H, filed 27 Mar 68, published 6 Jan 71, p 151

Translation: This Author's Certificate introduces a device for discrete demodulation of duration-modulated pulses. The unit contains a scaling circuit, decoder, pulse shaper, diodes and coincidence circuit. As a distinguishing feature of the patent, in order to improve precision and resistance to interference in the demodulation process, the device is equipped with a cadence pulse time discriminator for the pulses from the output of the scaling circuit. The output of this discriminator is connected to the input of the scaling circuit through an oscillator made in the form of a feedback-covered series circuit comprised of a controllable delay line and a diode. The emission frequency of this oscillator is  $2n$  times the frequency of the cadence signal, where  $n$  is the ratio of the cadence pulse period to the duration quantizing step for the pulses. The cadence signal line is connected to the set terminal of a flip-flop whose one-output terminal is connected to the controlling input of the above-mentioned delay line through the pulse shaper.

1/1

- 44 -

USSR

UDC 622.412.1:543.272.03

POLYAKOV, V. S., GORDEYEV, A. T., and KILIN, A. L.

"A GIK-1 Type Instrument for Detecting Hydrogen, Methane, and Carbon Dioxide in a Mine Atmosphere"

Tr. Vost. NII po bezopasn. rabot v gorn. prom-sti (Works of the Eastern Scientific Research Institute of Work Safety in the Mining Industry), Vol 12, 1972, pp 248-253 (from Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika, No 2, 1973, Abstract No 2.32.1037 by V.S.K.)

Translation: The authors present the block diagram, description, and technical characteristics of the GIK-1 instrument, which is used for simultaneous and discrete detection of methane, hydrogen, and carbon dioxide in the atmosphere of mines and shafts. The instrument's operating principle is based on a measurement of the difference between the light refraction indices of the gas sample being investigated and a like amount of pure air, as quantitatively determined by the displacement of the interference bands with respect to their original (zero) positions. The amount of spectrum displacement is proportional to the value of the refractive index of the gas mixture being investigated, which itself changes proportionally to the percentage content of methane, hydrogen, and carbon dioxide in the mixture. The percentage limits for measuring the concentrations of the gases are: methane -- 0-6; H<sub>2</sub> -- 0-6; 1/2

USSR

POLYAKOV, V. S., et al., Tr. Vost. NII po bezopasn. rabot v gorn. prom-sti, Vol 12, 1972, pp 248-253

CO<sub>2</sub> -- 0-6; methane + CO<sub>2</sub> -- 0-6; methane + H<sub>2</sub> -- 0-12. Detection error is ±0.3 percent. Experimental models of the GIK-1 were subjected to industrial tests over a period of 2 months in Uralkaliy's mines, during which time more than 700 H<sub>2</sub>, CO<sub>2</sub>, and CH<sub>4</sub> detection tests were carried out. The test results were positive, and the GIK-1 is recommended for industrial use. An experimental group of 25 of these instruments must now be produced for the Uralkaliy association. (2 illustrations; 1 table)

2/2

- 108 -

1/2 032 UNCLASSIFIED PROCESSING DATE--300070  
TITLE--ELECTRON EXCITATION ENERGY TRANSFER IN LIQUID SOLUTIONS. III -U-  
AUTHOR--(05)--AGREST, M.M., ANDREYESHCHEV, YE.A., KILIN, S.F., RIKENGLAZ,  
M.M., ROZMAN, I.M.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 625-31  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--EXCITATION ENERGY, AROMATIC ETHER, CYCLOHEXANONE, ETHYLENE  
GLYCOL, ETHANOL, SOLVENT ACTION, NAPHTHOL, ABSORPTION SPECTRUM,  
FLUORESCENCE SPECTRUM, ELECTRON DONOR  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/0972 STEP NO--UR/0048/T0/034/003/0625/0631  
CIRC ACCESSION NO--AP0124631

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124631

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THEORETICALLY DERIVED EXPRESSION FOR THE DISSOCN. OF THE EXCITED STATE OF THE DONOR MOLES. IN THE PRESENCE OF ACCEPTOR MOLES., IN WHICH THE ENERGY TRANSFER OCCURS EITHER THROUGH A LONG DISTANCE MECHANISM (DIPOLE DIPOLE INTERACTION) OR THROUGH MOL. COLLISION (EXCHANGE INTERACTION), WAS STUDIED BY EXAMG. 3 PAIRS OF DONOR ACCEPTOR SYSTEMS IN SOLVENTS OF VARIOUS VISCOSITY. THE SYSTEMS: (A) DIPHENYL ETHER-CYCLOHEXANONE IN ETHYLENE GLYCOL AND (B) IN ETOH; (C) AND (D), RESP., DIPHENYL ETHER-2,5-DIPHENYLOXAZOLE IN THE SAME SOLVENTS; (E) 2,NAPHTHOL-1,3,5,TRIPHENYLPYRAZOLINE IN ACET, (F) ETOH, AND (G) N,BUGH, OR (H), (J), AND (K), RESP., IN THESE SOLVENTS BUT PURGED WITH N. THE ABSORPTION SPECTRA, FLUORESCENCE SPECTRA, QUANTUM YIELDS, DONOR FLUORESCENCE DECAY AND QUENCHING, AND SENSITIZATION OF THE ACCEPTOR FLUORESCENCE WERE MEASURED, YIELDING VALUES FOR ACCEPTOR CONCNS. FOR HALFQUENCHING THE FLUORESCENCE AND DATA ON THE MECHANISM OF ENERGY TRANSFER. GOOD AGREEMENT OF THEORY WITH EXPT. WAS FOUND FOR A AND B, WHERE THE LONG TANGE MECHANISM DOES NOT CONTRIBUTE AND ALSO IN D WHERE THIS MECHANISM PREVAILS. FOR E-K THE COLLISION MECHANISM IS NEGLIGIBLE. GOOD AGREEMENT WITH EXPT. IS FOUND FOR E-J BUT NOT FOR G AND K. THIS COULD NOT BE EXPALINED. THE CONTRIBUTION OF BOTH MECHANISMS TO THE INITIAL QUENCHING CONST. IS DISCUSSED.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--RADIOLUMINESCENCE OF ORGANIC MATTER. VI. FLUORESCENCE AND  
PHOSPHORESCENCE IN FROZEN SOLUTIONS DURING X RAY AND PHOTODEXCITATION -U-  
AUTHOR-(04)-ANDREYESHCHEV, YE.A., KILIN, S.F., ROZMAN, I.M., SPURNY, F.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 662--6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--RADIOLUMINESCENCE, X RAY, BENZENE, NAPHTHALENE,  
PHOSPHORESCENCE, FLUORESCENCE, LIGHT EXCITATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/1626

STEP NO--UR/0048/70/034/003/0662/0666

CIRC ACCESSION NO--AP0125248

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125248

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHOTO AND RADIOLUMINESCENCE OF BENZENE AND NAPHTHALENE (I) IN CYCLOHEXANE, DECALIN, PHME, AND ETOH AT 77DEGREEK WERE MEASURED; THE PHOSPHORESCENCE SPECTRA WERE SEP. RECORDED, AND THE PHOSPHORESCENCE FLUORESCENCE RATIO DURING X RAY AND PHOTOEXCITATION WAS ESTD.

UNCLASSIFIED



Coatings

USSR

UDC: 546.831+546.321.824

YEMYASHEV, A. V., KILIN, V. S., MARTYNOV, S. Z., and SHAROVA, A. V.

"Pyrolytic Nitrides of Titanium and Zirconium and Areas of Their Application"

Moscow, Tsvetnyye Metally, No. 12, Dec 70, pp 30-32

Abstract: Data on the deposition of titanium and zirconium nitrides from the gas phase are discussed. Use was made of commercial zirconium and titanium tetrachloride, hydrogen, and nitrogen. The process of deposition of zirconium pyronitride takes place at 1400--2000°C, with the deposition rates sufficiently high to obtain coatings of appropriate thickness. The most favorable conditions for depositing zirconium pyronitride are attained at a molar ratio of initial components of  $ZrCl_4:N_2:H_2=1:3:2$ . The temperature may be varied within 1700--2000°C. A table in the original article indicates the same processing relationships and specifications for titanium

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USSR

YEMYASHEV, A. V., et al, Tsvetnyye Metally, no. 12, Dec 70, pp 30-32

pyronitride. The maximum deposition rate, however, was observed at 1600-1700°C. The decrease in the deposition rate with an increase in temperature is related to the fact that the titanium pyronitride deposition rate becomes commensurable with the vaporization rate. It was also found that the deposition rate of pyronitrides is directly proportional to the effective cross section of the vapor-gas mixture in the reaction zone. The high electroconductivity of titanium and zirconium nitrides permits their use in special areas of electrical engineering and electronics. The superconductivity of zirconium nitride makes it a potential material for subzero-temperature technology. High melting temperatures and good refractory properties make these materials suitable for use as strengthening components. The method of deposition from the gas phase may be used for applying refractory coatings to parts of intricate configuration.

2/2

USSR

UDC: 681.327.12

BINKAUSKAS, B.-Yu. B., KIINA, A. A., Institute of Physics and Mathematics, Academy of Sciences of the Lithuanian SSR

"A Device for Shaping Synchronizing Pulses in Reading Out Information From a Magnetic Tape"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obratzsy, tovarnyye znaki, No 3, Jan 71, Author's Certificate No 291193, Division G, filed 18 Apr 69, published 6 Jan 71, pp 117-118

Translation: This Author's Certificate introduces a device for shaping synchronizing pulses in reading out information from a magnetic tape. The device is based on Author's Certificate No 225549. As a distinguishing feature of the patent, the output synchronizing pulses are brought closer into phase with the input signals by using an adder module with its input connected to the output of the time discriminator, while the adder module output is connected to the input of the de-emphasizer.

1/1

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--RAISING THE ACCURACY OF AN EXPERIMENTAL DETERMINATION OF CONTACT  
FORCES IN THE CENTRE OF DEFORMATION; AND THEORY OF THE MATHEMATICAL  
AUTHOR--(04)-CHEKMAREV, A.P., CHERNYAVSKY, A.A., MELESHKO, V.I.,  
KILIYEVICH, A.F.  
COUNTRY OF INFO--USSR  
SOURCE--IZVEST. V.U.Z., CHERNAYA MET., 1970(2), 91-96  
DATE PUBLISHED-----70

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

TOPIC TAGS--METALLURGIC RESEARCH FACILITY, ACCURACY STANDARD, METAL  
ROLLING, METAL DEFORMATION, MATHEMATIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/0561

STEP NO--UR/0148/70/000/002/0091/0096

CIRC ACCESSION NO--AP0124256

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124256

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CF, IBID., 1969, (12), 83; ENT. A., 7007-52 0432. THE QUESTION OF THE MATHEMATICAL ANALYSIS OF EXPERIMENTAL DATA RELATING TO CONTACT FORCES ARISING IN THE ROLLING OF METALS, REPRODUCED ELECTRONICALLY IN THE FORM OF A SERIES OF OSCILLOGRAMS, IS CONSIDERED WITH SPECIAL REF. TO THE PROBLEM OF CORRECTING THE END EFFECT OF THESE OSCILLOGRAMS SO AS TO INCREASE THE ACCURACY OF THE EXPERIMENTAL DETERMINATION OF CONTACT FORCES. IN TYPICAL EXISTING EXPERIMENTAL METHODS, THE ACCURACY WITH WHICH THE POSITION OF THE NEUTRAL SECTION MAY BE DETERMINED IS SIMILAR TO 3PERCENT.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--INFRARED SPECTROSCOPIC STUDY OF DEHYDROCHLORINATED POLY(VINYL  
CHLORIDE) FIBERS AND FILMS AND THEIR MODIFICATIONS -U-  
AUTHOR--(05)-GRACHEV, V.I., BEZPRUZYANNYKH, A.V., SHELKUNOV, V.G.,  
KILMENKO, I.B., KIRILENKO, YU.K.  
COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3) 633-8

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--IR SPECTRUM, POLYVINYL CHLORIDE FIBER, TEMPERATURE DEPENDENCE,  
CATALYST ACTIVITY, CHLORINATION, DEHYDROGENATION, BROMINATION, THIOUREA,  
POLYMER FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1992/0305

STEP NO--UR/0080/70/043/003/0633/0638

CIRC ACCESSION NO--AP0111499

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111499

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF MEDIUM, CATALYST, AND TEMP. OF DEHYDROCHLORINATION OF POLY(VINYL CHLORIDE) FIBERS AND FILMS ON THEIR IR SPECTRA WAS STUDIED. DEHYDROCHLORINATION INCREASES WITH TEMP. (110-150DEGRRES) AND TIME AS SHOWN BY INCREASED INTENSITY OF THE BANDS AT 1680-1720 AND 1605 CM PRIME NEGATIVE (UNSATD. C-D AND C-C BONDS). THE BAND INTENSITY AT 3028 CM PRIME NEGATIVE (END VINYL GROUPS) ALSO INCREASES WITH TEMP. THE PRESENCE OF A CATALYST INCREASES THE RATE, DIAZOAMINO BENZENE INCREASING THE RATE MORE THAN ALPHA,NAPHTHYLAMINE. USING DIAZDAMINO BENZENE, ALPHA AND BETA UNSUBSTITUTED ALDEHYDE GROUPS ARE FORMED (ABSORPTION AT 1690 CM PRIME NEGATIVE). DEHYDROCHLORINATION PROCEEDS MORE RAPIDLY IN AIR THAN IN VACUUM. ALSO, THE TREATED PRODUCT WAS BROMINATED WITH 3PERCENT AQ. BR AT 80DEGREES FOR 2 HR TO GIVE BRCHCH:CHCHBR GROUPS. SUBSEQUENT TREATMENT WITH THIOUREA AT 100-2DEGREES SHOWS THE PRESENCE OF THIOAMIDE AND THIDURONIUM GROUPS, WHICH ARE REMOVED BY TREATMENT WITH 2N NAOH, IN THE SPECTRUM.

UNCLASSIFIED

USSR

UDC: 681.335.7

ZHUKAUSKAS, K. P., ~~KILNA, A. A.~~, Institute of Physics and Mathematics,  
Academy of Sciences of the Lithuanian SSR

"A Device for Computing the Average Value of a Random Process"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,  
No 8, Mar 72, Author's Certificate No 330466, Division G, filed 11 Sep 70,  
published 24 Feb 72, p 158

Translation: This Author's Certificate introduces a device for computing the average value of a random process. The device contains an integrator. As a distinguishing feature of the patent, the device is simplified and accuracy is improved by including a subtractor, a bilateral clipper, and a second integrator in the device. The input of the first integrator is connected to the output of the subtractor, and the output of this integrator is connected through the clipper to the input of the second integrator. The output of the second integrator is connected to one of the inputs of the subtractor.

1/1



Converters

USSR

UDC 621.317.373

BINKAUSKAS, B. Yu. B., KIINA, A. A., and VEYVERIS, G. P., Institute of Physics and Mathematics, Academy of Sciences of the Lithuanian SSR

"A Converter Which Transforms Phase Shift to Digital Code"

Moscow, Otkryitya, izobreteniyе, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 35, Soviet Patent No 287194, class 21, filed 16 Jun 69, published 19 Nov 70, p 83

Translation: This Author's Certificate introduces a converter which transforms phase shift to digital code. The device contains reference and phase-keyed signal pulse shapers, flip-flops, diodes, a counter, a switch and an automatic frequency control circuit made up of a time discriminator, a controllable delay line, a diode and a scaling circuit. The output of the diode in the automatic frequency control circuit is connected to the input of the controllable delay line through an OR circuit. As a distinguishing feature of the patent, accuracy is improved by adding a second automatic frequency control circuit whose input is connected to the output of the phase-keyed signal pulse shaper, while the output of the extra AFC circuit is connected to the input of the switch.

1/1

1/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--ELECTRON MICROSCOPIC METHOD FOR INVESTIGATION OF DISPERSE SYSTEMS  
WITH LIQUID PHASES -U-

AUTHOR--(05)-KILPAKOV, L.V., NIKITINA, S.A., TAUBMAN, A.B., SPIRIDONOVA,  
V.A., CHALYKH, A.YE.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 229-231

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ELECTRON MICROSCOPY, PROTECTIVE COATING, PHYSICS LABORATORY  
INSTRUMENT, EMULSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1992/1720

STEP NO--UR/0069/70/032/002/0229/0231

CIRC ACCESSION NO--AP0112714

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112714

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DEVICE HAS BEEN DESIGNED AND A TECHNIQUE DEVELOPED FOR ELECTRON MICROSCOPIC STUDY OF LIQUID SYSTEMS: EMULSIONS AND LATICES. BY MEANS OF THIS METHOD ELECTRON PHOTOMICROGRAPHS HAVE BEEN OBTAINED OF STRUCTURIZED PROTECTIVE FILMS FROM MICROEMULSIONS STABILIZING THE MACROEMULSIONS OF PURE LIQUIDS. IT HAS BEEN SHOWN THAT ELECTRON PHOTOMICROGRAPHS OF LATICES CAN BE OBTAINED IN THE CASE OF INCOMPLETE MONOMER CONVERSION.

UNCLASSIFIED

USSR

UDG 621.382.5

ZVYAGINA, E. N., OSTROVSKIY, G. I., TIKHONOV, V. I., KILIPENKO, V. V.,  
CHERNYAVSKIY, V. V.

"Study of Contact Resistances in Thermoelectric Materials"

V sb. Nizkotemperaturn. termoelektrich. materialy (Low-Temperature Thermo-  
electric Materials -- Collection of Works), Kisinev, 1970, pp 44-47 (from  
RZh--Elektronika i yeye primeneniye, No 5, 1971, Abstract No 5B187)

Translation: A method is proposed for measurement of the contact resistances of  
thermopiles, based on an increase of the number of switching layers in the  
specimen. In contrast to the sonde-type, the proposed method has great  
sensitivity, gives good reproducibility of results ( $\sim 4\%$ , whereas the sonde  
type is as much as 20% [sic]) and makes it possible to measure contact re-  
sistance in a wide range of temperature. 2 ill. 4 ref. Author's Abstract.

1/1

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USSR

UDO 621.382.5

ZVYAGINA, S.N., KILIPENKO, V.V., LEBEDEV, V.V.

"Ceramic Thermojunctions Applicable To Thermoelectric Devices"

Kholodiy'n. tekhn. i tekhnol. Resp. mezhved. nauchno-tekhn. sb. (Refrigerator Engineering And Technology. Republic Interdepartmental Scientific-Technical Collection) 1970, No 9, pp 17-23 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 128223)

Translation: Effective thermojunctions with minimum temperature losses have been developed. A method is proposed for chemical nickel plating of a ceramic, assuring a strength for bonding it with commutation plates of not less than 150 kg/cm<sup>2</sup>. A model technological process is developed for preparation of thermojunctions on ceramic films, on the base of which thermojunctions from ceramics of various sorts are produced. Specimens successfully withstood tests for mechanical stability, moisture resistance, thermal shock, electrical breakdown, etc. Author's Summary.

1/1

USSR

UDC 542.91:547.586.2:547.466:547.1'118

KARPAVICHYUS, K. I., POSHKENE, R. A., PUZERAUSKAS, A. P., KIL'SHEVA, O. V.,  
KNUNYANTS, I. L., Institute of Biochemistry of the Lithuanian SSR Academy  
of Sciences and the Institute of Hetero-Organic Compounds of the USSR  
Academy of Sciences

"p- and m-aminophenylalkane Acids and Their Derivatives Containing diethylene-  
diimidophosphoryl and diethylenediimidothiophosphoryl Groups"

Moscow, Izvestiya Akademii Nauk SSR - Seriya Khimicheskaya, No 11, 1972,  
pp 2549-2554

Abstract: The methyl esters of p- and m-aminophenylalkane acids and the  
methyl esters of N-(p- and m-aminophenacyl)-DL-valine (R. Poshkene, et al.,  
Tr. AN Lit-SSR, Series B, 1971) were phosphorylated by phosphorus oxychloride  
or phosphorus thiooxychloride in inert solvents in the presence of bases.  
Without separating the dichlorophosphoryl derivatives into individual forms  
they were condensed with ethyleneimine by the method of N. Bestian (Liebigs  
Ann. Chem. , No 566, 210, 1950). The HCl separating out was found by triethyl-  
amine or an excess of ethylenimine. Thus, the methyl esters and sodium salts  
of para and meta-aminophenylalkanes acids containing diethylenediimidophosphoryl  
and diethylenediimidothiophosphoryl groups were synthesized, and the methyl  
1/2

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USSR

KARPAVICHYUS, K. I., et al., Izvestiya Akademii Nauk SSR -- Seriya Khimicheskaya, No 11, 1972, pp 2549-2554

esters and sodium salts of DL-valine, acylated by the para and meta-amino-phenylalkanes acids containing diethylenediimidophosphoryl groups were obtained. The experimental procedures and results are described, and the physical and chemical properties of the compounds are tabulated.

2/2

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--TETRAKIS,PENTAFLUOROPHENYL,TITANIUM -U--  
AUTHOR--(04)-RAZUVAYEV, G.A., LATYAYEVA, V.N., KILYAKOVA, G.A., MALKOVA,  
G.YA.  
CCUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 620-1  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--FLUORINATED ORGANIC COMPOUND, ORGANOTITANIUM COMPOUND, BENZENE  
DERIVATIVE, THERMAL DECOMPOSITION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/1066 STEP NO--UR/0020/70/191/003/0620/0621  
CIRC ACCESSION NO--AT0124723  
UNCLASSIFIED

K



2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124723

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. C SUB6 F SUB5 LI TREATED IN ET  
SUB2 O AT MINUS 70DEGREES WITH TICL SUB4 AND HELD 2 DAYS GAVE ON EVAPN.  
20-30PERCENT ORANGE (C SUB6 F SUB5) SUB4 TI.2ET SUB2 O, M.  
117-19DEGREES, WHICH WAS VERY HYGROSCOPIC. TREATED WITH HCL IT GAVE C  
SUB6 F SUB5 H AND TICL SUB4. HCL SUB2 GAVE (C SUB6 F SUB5) SUB2 HG AND  
TICL SUB4. HEATED DRY THE SUBSTANCE IS STABLE TO 100DEGREES WHILE AT  
120-30DEGREES IN THE MELT IT DECOMPS. EXPLOSIVELY; IN C SUB6 H SUB6 AT  
200-50DEGREES IT WAS TOTALLY DECOMP. IN 40-50 HR TO C SUB12 H SUB6 F  
SUB4, M. 62DEGREES, C SUB6 F SUB5 H AND (C SUB6 F SUB5) SUB2, AND INORG.  
TI FLUORIDES. POSSIBLY THE 1ST PRODUCT IS C SUB6 F SUB4 HPH.  
FACILITY: NAUCH.-ISSLED. INST. KHIM., GOR'K, GOS. UNEV. IM.  
LOBACHEVSKOGG, GORKI, USSR.

UNCLASSIFIED

USSR

BUZURKHANOV, V., KAMILOV, M. M., KIM, A. N.

"Measures of Importance of Binary Characteristics"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], Tashkent, No 44, 1971, pp 9-14 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V394 by V. Mikheyev).

Translation: The following problem is studied. Given are objects characterized by a set of values of binary characteristics. We must determine which of these characteristics are essential and which are secondary. A method is suggested using the Boolean difference of the partial functions. An algorithm is described for calculation of an estimate of the measure of importance of an individual characteristic.

1/1

USSR

UDC 51.155.001.57:681.3.06

KAMILOV, M. M., ALIYEV, E. M., KIM, A. N.

"Calculation of  $\epsilon$ -Thresholds in the Recognition of Objects by a Voting Algorithm"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], No 43, Tashkent, 1971, pp 72-80, (Translated from Referativnyy Zhurnal, Kibernetika, No.10, 1971, Abstract No 10 V831).

NG ABSTRACT.

USSR

UDC: 629.78.015.076.66

BABAKOV, N. A., KIM, D. P.

"On Conditions of Controllability in a Problem of Approach"

Moscow, Upr. dvizhushchimisya ob"yektami. Tr. IV Vses. soveshch. po avtomat. upr. Tbilisi, 1968--stornik (Control of Moving Objects. Works of the Fourth All-Union Conference on Automatic Control. Tbilisi, 1968--collection of papers), 1972, pp 29-39 (from RZh-Raketostroyeniye, No 10, Oct 72, abstract No 10.41.51)

Translation: The paper analyzes the problem of three-dimensional pursuit of point B by point A under the following conditions. The pursued point B moves in a straight line. The pursuing point A moves at constant speed. The controls of point A are angular velocities which are limited in magnitude. The velocity of the pursuing point A is less than the velocity of the pursued point B. This problem can be formulated as a problem of defining the region of controllability in the space of the initial conditions of pursuit. The initial problem of defining a controllability condition reduces to a variational problem, or more precisely to a two- and three-point variational problem with moving right end of the trajectory. The given varia-

1/2

USSR.

BABAKOV, N. A., KIM, D. P., Upr. dvizhushchimisya ob'yektami. Tr. IV Vses. soveshch. po avtomat. upr. Tbilisi, 1968--sbornik, 1972, pp 26-39

tional problem is solved by means of L. S. Pontryagin's principle of the maximum. As a result, the optimum control structure is found and a scheme for solving the original problem is given. One illustration, bibliography of three titles. Résumé.

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1/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--EFFECT OF CASTING SHRINKAGE ON THE MECHANISM OF SCAB FORMATION -U-  
AUTHOR--(03)-KIM, G.P., NIKIFOROV, A.P., CHERNOGOROV, P.V.  
COUNTRY OF INFO--USSR *K*  
SOURCE--LITEINOE PROIZVOD. 1970, 2, 33-5  
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--METAL SHRINKAGE, CAST STEEL, METAL CASTING, FOUNDRY MOLD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1995/1374

STEP NO--UR/0128/70/002/000/0033/0035

CIRC ACCESSION NO--AP0116823

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0116823

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTS. HAVE BEEN CARRIED OUT WITH STEEL CASTINGS (0.3PERCENTC) OF DIFFERENT SHAPES AND CROSS SECTION AREAS, TO DET. THE EFFECT OF SHRINKAGE ON THE SURFACE PROCESSES OCCURRING DURING THE COOLING PERIOD (1200-800DEGREES) IN A SAND MOLD. AMONG OTHER FACTORS, SCAB FORMATION IS INFLUENCED BY THE TIME OF CONTACT BETWEEN THE HOT METAL AND THE MOLD SURFACE; HERE THE DIRECTION AND AMT. OF SHRINKAGE ARE IMPORTANT. THE CHARACTER OF THE SCAB FORMS AND DIFFICULTIES INVOLVED IN THEIR REMOVAL ARE DISCUSSED ON THE BASIS OF THE POSITION OF THE CASTING SURFACE UNDER CONSIDERATION, WITH RESPECT TO THE MOLD, THE CHARACTERISTICS OF THE MOLDING SAND, THE INTENSITY OF OXIDN., AND OF SILICATE FORMING PROCESSES AT THE SURFACE.

UNCLASSIFIED

Acc. Nr. **AP0045157**

Abstracting Service:  
CHEMICAL ABST. **5-78**

Ref. Code  
**UR0456**

**K**

**91295a** Radiation vulcanization of polyisobutylene in the presence of *p*-divinylbenzene. ~~Kim, I. P.; Barkalov, I. M.; Egorov, E. V. (Filiat Inst. Khim. Fiz., Chernogolovka, USSR). Khim. Vys. Energ. 1979, 4(1), 81-2 (Russ).~~ The irradi. of polyisobutylene (I)-*p*-divinylbenzene (II) blends with  $\gamma$ -rays caused grafting of I on II which results in the formation of a 3-dimensional lattice. There was an increase in the av. mol. wt. of the blend, as detd. by viscometry and decreased swelling in cyclohexane; changes in the ir spectrum showed that all II reacted. The process is equiv. to vulcanization of I. The max. content of gel fraction was attained with 75:25 I-II blend at 2-4 megarads irradiation dose. Larger doses began to degrade the rubber. CPJR -

**40**

**1/1**

REEL/FRAME

**7**

**19780057**



KIM, K. I.

(4)

SPRS 60634  
27 November 1993

HYDRODYNAMIC ACCELERATION OF CONDUCTING MEDIA IN PISTON GAS-LIQUID FILMS

Abstract of a Paper by K. I. Kim, G. S. Kapranov, A. F. Kolesnichenko, V. V. Malinov Given at the Hydrodynamic Conference, pp 121-127

1. The study of the processes of energy exchange in piston gas-liquid flow is a new and highly complicated problem. The estimates of the efficiency of transferring energy to a liquid-metal generated on expansion of a gas in the piston films demonstrated that the efficiency of the process (the ratio of the increment of the kinetic energy of the metal to the variation in enthalpy of the gas) can reach the limiting values on the order of 0.75 to 0.80.

The primary cause of the reduction in efficiency turns out to be disturbance of the boundaries of the liquid-metal piston. Accordingly, the methods of stabilizing the piston boundaries are acquiring urgency.

The results of experimental studies of the acceleration of a single liquid-metal piston in channels of constant and variable cross section are discussed in this paper. A study was made of the effect of the characteristic magnetic field on the intensity of the deformation of the piston.

The accelerated motion of the piston in the channel under the effect of a pressure drop on its ends is accompanied by intense deformation of the "free" liquid. Experimental data were obtained on the rate of introduction of the piston without stabilization. These data are investigated as the initial data for analysis of the methods of stabilizing liquid pistons in piston flows.

The energy characteristics of the acceleration process in channels of constant and variable cross section were obtained with and without stabilization of the piston boundaries. The essence of the applied stabilization technique is that a current is passed through the meridional cross section of the cylindrical piston as a result of which volumetric electromagnetic forces appear which concentrate the metal along the direction of the current (Figure 1). In the tested channels, the field was intensified near the ends of the piston using ferromagnetic inserts between the current conducting walls. The efficiency of the piston acceleration when realizing such a stabilization procedure in a channel

KIM, H. I.

LAMINAR-FLOW LIQUID-METAL MAGNETOHYDRODYNAMIC SYSTEMS AND SYNCHRONOUS GENERATION OF ELECTRIC POWER

Article by Ye. V. Berezny, V. Ye. Pavlenko, G. M. Shcherbakov, Institute of Technical Thermophysics of the Ukrainian SSR Academy of Sciences, L. G. Berezny, K. I. Hryshchuk, I. M. Penzlinov, Electrodynamic Institute of the Ukrainian SSR Academy of Sciences, Kiev, USSR; Warsaw, IAEA Symposium on Electricity from Magnetohydrodynamics, 1968, pp 1635-1646]

SPRS 60634  
27 November 1973

The primary difficulties when implementing liquid-metal magnetohydrodynamic generators by the known designs consist in accelerating the liquid-metal to high velocities before the channel, which is connected with high losses to friction in the two-phase nozzle and channel. If the expansion of the vapor (gas) is transferred to the channel, then the electrical conductivity of the flow (the vapor-liquid mixture) is significantly reduced. The magnetohydrodynamic generator in which the liquid-metal flow is separated into segments (liquid pistons) moving as a result of expansion of the medium (vapor or gas) between them appears to be much more prospective. Our preliminary experiments have demonstrated the possibility of obtaining a piston-like (Laminar) flow. The utilization of this principle permits: 1) organization of the acceleration process without shocks and mutual slipsh of the phases; 2) maximum reduction of the thermal contact surface between the phases and an increase in the thermodynamic efficiency of the cycle, realizing it in a broader temperature range; 3) realization of a constant flow velocity in the channel; 4) the production of electric power by a synchronous magnetohydrodynamic generator. The application of the synchronous principle combined with the described method of accelerating the liquid-metal permits the consideration that high-power generators can be built. The thermodynamic cycles of liquid-metal magnetohydrodynamic generators can be divided into two groups with respect to condensation temperature: high-temperature generators designed for use

1/2 025 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--PARAMETERS OF AN ASYNCHRONOUS MHD GENERATOR EMPLOYING LIQUID METALS  
-U-  
AUTHOR--KIM, K.I.  
COUNTRY OF INFO--USSR  
SOURCE--AMGNITNAIA GIDRODINAMIKA, VOL 6, JAN.-MAR. 1970, P. 98-109  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.  
TOPIC TAGS--MHD GENERATOR, LIQUID METAL, PARAMETER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1996/1919 STEP NO--UR/0332/70/006/000/0098/0109  
CIRC ACCESSION NO--AP0118881

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0118881

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE PARAMETERS OF AN ASYNCHRONOUS MHD GENERATOR UNDER THE ASSUMPTION OF A CONSTANT VERTICAL DISTRIBUTION OF THE WORKING FLUID VELOCITY IN THE CHANNEL. THE CORRECTIONS WHICH MUST BE INTRODUCED TO THE PARAMETER FORMULAS IF THE VERTICAL VELOCITY PROFILE IS TAKEN INTO ACCOUNT ARE DETERMINED. IT IS SHOWN THAT, AS DISTINCT FROM AN ORDINARY ASYNCHRONOUS MACHINE, THE EQUIVALENT CIRCUIT OF AN ASYNCHRONOUS GENERATOR IS NOT COMPLETELY EQUIVALENT. THIS DISCREPANCY IS ELIMINATED BY INTRODUCING APPROPRIATE CORRECTIONS TO THE POWER BALANCE EQUATION.

UNCLASSIFIED

6 LOSIA

KIM, L.P.

CALCULATION OF VIBRATIONS OF DISTRIBUTED ELASTIC SYSTEMS BY FINITE ELEMENTS METHOD

650/e32. V. P. Kaniadov and L. P. Kim (Moscow)

1. In recent years, the method of finite elements has been developed for analysis of the vibrations of distributed systems and structures. In this method, the system is divided into a set of its parts, each of which is replaced by a certain model, called a finite element (FE). In contrast to the sector replaced, the FE has a finite number of degrees of freedom. The deformation and position of the FE in space are determined by the vector of generalized coordinates q(t), the components of which are the coordinates of the nodal points, which are common for neighboring elements. The conditions of their attachment are formulated at these points. As a result, the distributed system becomes a discrete model of FE.

2. In construction of FE, the displacement function w(r,t) of a sector of the initial system is limited by a class of certain basic functions phi\_j(r), as is done in the direct methods

w(r, t) = sum\_{j=1}^n phi\_j(r) q\_j(t)

Using the dynamic principle of virtual displacements, the relationship is established between q(t) and the vector Q(t), the components of which are the generalized forces of interaction of the elements.

int\_V [rho(r) q-dot-dot(r) - Q(t) - F(t)] dr = 0

F(t) is the vector of external forces, equal to F(t) = int\_V f(r,t) v(r) dr^3, where f(r,t) is the density of the external load.

int\_V [int\_V rho(r) v(r) v(r) dr^3] is the matrix of inertia of the FE. int\_V [int\_V rho(r) v(r) v(r) dr^3] is the rigidity matrix. Its form is determined by the concrete expression for the energy of elastic deformation.

The set of these equations, written for each element, together with the conditions of their coupling and boundary conditions describe the dynamics of the model of FE.

3. As applicable to problems of twisting, bending and combined twisting-bending oscillations [1] and [2] matrices are produced for a number of

mechanics

KIM, O. Ts.

Science USSR

SYNTHESIS AND INVESTIGATION OF PHOSPHORIC ACID ESTERS CONTAINING A TRICHLOROMETHYL GROUP. THE PREPARATION CALUROSIFOL

UDC 547.26.118

JPRS 56168  
5 June 1972

[Article by Ye. S. Shepetaeva, M. S. Porodach, K. I. Sanin, A. D. Gol'tser, Ye. S. Azam, Yu. Ya. Krasovskiy, L. I. Ibrakhimovskiy, Ya. G. Timonchenko, I. L. Pechalovskiy, Institute of Petrochemical Synthesis, Leningrad A. V. Topchil'sev, USSR Academy of Sciences, Moscow, Doklady AN SSSR, Russian, vol 201, no 4, 1972, signed to press 5 July 1971, pp 826-831]

It is known that the physiologically active phospho-organic compounds — cholinesterase inhibitors are pentavalent phosphorus compounds generally represented by the formula:



Here A and B are the framing alkoxy, alkyl, aryl and other groups; X is the weak acid residue. Subsequently, the X bond with phosphorus has an anhydride character and the substance itself has the properties of a phosphorylating agent. Utilized in the capacity of Group X were precipitates of hydrofluoric acid and dicyanoacetic acid, phenols and mercaptans of variable structure and others.

Trichloroalkoxy groups were used in the present work for X since it is known that the corresponding alcohols containing a trichloromethyl group are markedly acidic. A number of trichloroalkylphosphoric acid esters were synthesized and investigated. Their characteristics are cited in Table I. The synthesized esters are colorless, slightly mobile liquids with a weak aromatic scent, easily soluble in organic solvents, mineral and vegetable oils, and poorly soluble in water. The synthesis scheme includes the following reactions:

- 1 -

[I - USSR - D]

USSR

UDC 539.216.2:538.2

~~KIM, R. D.~~ POTYLITSYN, V. I., BOGATYREVA, I. A., RODICHEV, D. M., and  
SAFONOV, I. A., Krasnoyarsk Polytechnical Institute

"Energy of Domain Boundaries in Permalloy Films"

Moscow, Fizika Metallov i Metallovedeniye, Vol 30, No 5, 1970, pp 903-907

Abstract: A method is suggested for measuring the energy density of domain boundaries in thin permalloy films with circular anisotropy. The measurements, performed on a film 1,100 Å thick, yield values of domain boundary energy density  $\gamma$  near 4.2 erg/cm<sup>2</sup>, which agrees well with the theoretical estimates for films of this thickness. In the area of thicknesses less than 1,000 Å, the measured energy values exceed the expected values, reaching 18 erg/cm<sup>2</sup>. An attempt is made at experimental study of  $\gamma$  as a function of the constant field intensity applied perpendicular to the plane of the circular boundary.

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1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--ELECTRON PARAMAGNETIC RESONANCE OF NITROGEN DIOXIDE AT HIGH  
PRESSURES -U-  
AUTHOR--(03)-GASANOV, E.M., KIM, S.KH., TSOY, T.G.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK UZB. SSR, SER. FIZ.-MAT. NAUK 1970, 14(1), 79-80  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS, CHEMISTRY  
TOPIC TAGS--EPR SPECTRAL LINE, NITROGEN OXIDE, HIGH PRESSURE EFFECT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/1801 STEP NO--UR/0166/70/014/001/0079/0080  
CIRC ACCESSION NO--AP0118768  
UNCLASSIFIED



2/2 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0118768

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECT OF PRESSURE ON THE WIDTH AND INTENSITY OF THE EPR SIGNAL OF NO SUB2 WAS STUDIED. THE LINEWIDTH INCREASED WITH PRESSURE; 250 DE AT 650 TORR. INTENSITY OF EPR LINE WAS PROPORTIONAL TO THE PARTIAL PRESSURE OF NO SUB2 IN THE GAS.

FACILITY: INST. YAO. FIZ., TASHKENT, USSR.

UNCLASSIFIED

USSR

TONKONOGOV, M. P.; USHAKOV, V. Ya.; KIM, S. V. (Tomsk Polytechnical Institute  
in. S. M. Kirova, Karagandinskiy Polytechnical Institute)

"Determination of the Field Intensity and Current Density in a Liquid at the  
Front of an Aperiodic Voltage Wave in the Pre-Discharge Period"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy: Fizika; December, 1970; pp 62-5

ABSTRACT: An expression is found analytically for the variation with time of  
the intensity of an electrical field and the current density in the pre-discharge  
period in a liquid, taking into account the polarization relaxation. The prob-  
lem is solved for that part of the exponential voltage wave which satisfies  
Ohm's law.

There is one figure showing a photograph of the discharge and oscillograms  
of the voltage and current. The article includes 10 equations. There are 10  
references.

1/1

USSR

UDC 518:517.944/.947

KIM, V. F.

"A Formulation and a Numerical Scheme for Solving the Problem of Predicting Weather for the Globe"

Novosibirsk, Chislen. metody resheniya zadach prognoza pogody i obshch. tsirkulyatsii atmosfery -- Sbornik (Numerical Methods of Solving Problems in Weather Prediction and General Atmospheric Circulation -- Collection of Works), 1970, pp 71-91 (from Referativnyy Zhurnal -- Matematika, No 7, July 71, Abstract No 7B961, by I. Shelikhova)

Translation: The problem of predicting weather within a spherical layer  $0 \leq z \leq H$  is considered, where ordinarily  $H$  is the height of the tropopause. The author presents a hyperbolic type of equation, which in the adiabatic case expresses the law of conservation of total energy for the quasistatic approximation, and an elliptical diagnostic equation for the vertical component  $w$  of wind velocity, and here three versions of boundary conditions are discussed for  $w$  when  $z = H$ . The algorithm for the numerical solution of a system of equations of hydrothermodynamics (of the hyperbolic type) is described for the quasistatic case in a spherical system of coordinates. Difference schemes of the second order of accuracy (a twenty-face hexagonal grid is used) for a uniform grid and difference schemes of the first order  $1/2$

USSR

KIM, V. F., Chislen. metody resheniya zadach prognoza pogody i obshch. tsirkulyatsii atmosfery -- Sbornik (Numerical Methods of Solving Problems in Weather Prediction and General Atmospheric Circulation -- Collection of Works), 1970, pp 71-91 (from Referativnyy Zhurnal -- Matematika, No 7, July 71, Abstract No 7B961, by I. Shelikhova)

of accuracy for a nonuniform grid (with respect to  $z$ ) based on the laws of conservation are presented. Their stability is examined. Evaluations of the time interval are obtained.  $w$  is determined by solving, by the dispersion method, a system of algebraic equations with a three-diagonal Jacobian matrix that has different, real eigenvalues. (11 bibliographic references)

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- 12 -

USSR

K UDC 669.046.58:532.73

GUREVICH, Yu. G., TOMILOV, V. I., FRAGE, N. R., and KIM, V. V., Zlatoust Branch of Chelyabinsk Polytechnical Institute

"Kinetics of Interaction of Titanium and Aluminum Nitrides With Slag Melts"

Novokuznetsk, Izv. VUZ, Chern. Metallurgiya, No 10, 1970, pp 15-17

Abstract: It is demonstrated experimentally that TiN interacts with the oxides of iron and manganese from slag, while AlN reacts with silica as well. The activation energies of the process of solution of TiN and AlN in slag melts are found. When metals are reduced from these oxides by nitrides, gaseous nitrogen is released, which may be dissolved in the liquid metal. The rate the process of interaction of nitrides with slags containing oxides of iron, manganese, and silicon is rather high.

1/1

Entomology

USSR

ZHUK, N. S., NI, A. S., MIRSHNICHENKO, N. I., KIM, V. YU., OVCHINNIKOV, N. A., and YUGAY, YU. M., Kazakh Institute of Epidemiology and Microbiology, Karatal'sk Rayon Sanitary Epidemiological Station, and Taldy-Kurgansk Oblast' Sanitary Epidemiological Station

"Control of Blood-Sucking Insects in the Paddies of the Karatal'sk Rayon Rice-Growing System"

Alma-Ata, Zdravookhraneniye Kazakhstana, Vol 30, No 5, May 71, pp 14-15

Abstract: Favorable conditions for the propagation of mosquitoes exist in the rice paddies of Karatal'sk Rayon. Large amounts of larvae of *Anopheles maculipennis*, *An. hyrcanus*, and *Culex modestus* are present in the paddies. Application of chlorophos in 0.5-0.8% solutions was effective in the control of mosquito larvae. Extermination of the larvae to the extent of 100% was obtained when these solutions were applied in amounts  $\approx$  100 l./ha. The solutions were either sprayed from an aircraft or released into the paddies on the ground level. The first method sometimes resulted in inadequate spraying because of misses due to improper signaling while the second method had the drawback that the solution did not spread in a sufficient concentration to areas distant from the point of release. Organophosphorus compounds can be

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USSR

ZHUK, N. S., et al., Zdravookhraneniye Kazakhstana, Vol 30, No 5, May 71,  
pp 14-15

used on rice crops only before flowering of the plants. Sound agricultural methods including lack of inclines in the system of paddies, dense planting of rice, and drainage of water from the paddies, dense planting of rice, and drainage of water from the paddies also proved effective in the control of mosquitoes.

2/2

USSR

UDC: 621.374

ONISHCHENKO, Ye. M., PERSHENKOV, V. S., KIMARSKIY, V. I.

"Optimizing the Construction of Direct-Access Memory Units on Integrated Circuitry"

Kiev, Radioelektronika, Vol 15, No 7, Jul 72, pp 877-885

Abstract: The paper deals with problems of organizing central computer storage subsystems. It is shown that selecting the configuration of a central subsystem matrix on the basis of minimizing the number of leads without considering conditions of matching to the control diodes may lead to excessive power consumption by a device based on such subsystems as well as an increase in overall dimensions and a reduction in reliability. A method is proposed which enables selecting the optimum configuration of an integrated storage subsystem which accounts for the number of leads as well as the power consumption. The procedure is applicable both to subsystems which contain only memory cells, and to subsystems with built-in controlling circuits.

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USSR

UDC 576.858.8

NOVIKOV, V. K., KIMAYEV, V. Z., and ATABEKOB, I. G., Moscow State University  
imeni M. V. Lomonosova

"Reconstitution of Nucleoprotein of Potato Virus X"

Moscow, Doklady Akademii Nauk SSSR, Vol 204, No 5, 1972, pp 1259-1262

Abstract: Potato virus X was used to study the mechanism of reconstitution, as the protein of this virus consists of two components of different weights which do not spontaneously repolymerize in the absence of RNA. The virus, obtained from infected thorn apples (*Datura stramonium* L.), was dissociated into protein and infective RNA by incubation with  $\text{CaCl}_2$ . After purification, the reconstitution was carried out by incubation of a mixture of the two components in a low ionic strength buffer. The ratio of total nucleoprotein yield observed spectrophotometrically from one cycle of differential centrifugation to the theoretical maximum was used to measure the effectiveness of reconstitution. This ratio was highest at a concentration of 0.01 M for tris-HCl buffer, and 0.001 M for phosphate buffer. In distilled water, or buffers of lower ionic strength, the ratio  $D_{260}/D_{280}$  of the nucleoprotein differed from that of the crude virus. However the ratio returned to normal following reprecipitation in the ultracentrifuge or treatment with pancreatic RNAase.

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USSR

NOVIKOV, V. K., et al., Doklady Akademii Nauk SSSR, Vol 204, No 5, 1972, pp 1259-1262

The nucleoprotein yield sharply declined with increasing salt concentration. Studies were also made of the kinetics of optimum pH (6.5-7.0) of the process at 20°C. In addition, electron microscopy showed particles of varying length, with a diameter equal to that of crude potato virus X. Infectivity of the reconstituted viruses was low. The UV spectra of reconstituted and crude viruses were very close, and their antigenicity identical, even though the protein component is only antigenically related to the crude virus. The reconstituted material was observed to be heterogeneous and to have a lower coefficient of sedimentation of analytical centrifugation. The fact that low ionic strength is optimal for this process suggested that the RNA-protein interaction is basically ionic. Particles with similar appearance under electron microscopy, identical antigenicity, similar UV spectra and similar yields to reconstituted potato virus were obtained by mixing virus protein with RNA of broom grass mosaic, tobacco mosaic, or barley streak mosaic viruses, or Escherichia coli ribosomal RNA. However none of these showed infectivity.

2/2

USSR

UDC: 53.07/.08+53.001.5

YENDOVITSKIY, V. S., KIMEL', L. R., MOKHOV, H. V.

"An Analytical Method of Calculating a Nucleon-Meson Cascade at High Energies of the Order of  $1-10^3$  GeV"

V sb. Vopr. dozimetrii i zashchity ot izluch. (Problems of Dosimetry and Radiation Shielding--collection of works), vyp. 12, Moscow, Atomizdat, 1971, pp 15-23 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A732)

Translation: A numerical method is proposed for calculating nucleon-meson cascades with regard to scattering in inelastic hadron-nucleus interactions. The method gives the function of spectral-angular distributions of particles in a cascade initiated in shielding materials by broad beams of high-energy hadrons in the small-angle approximation.

1/1

USSR

UDC: 53.07/.08+53.001.5

ZAYTSEV, L. N., KIMEL', L. R., SEROV, A. Ya., SIDORIN, V. P.

"Recovery of Neutron Spectra Behind Accelerator Shielding"

V sb. Vopr. dozimetrii i zashchity ot izluch. (Problems of Dosimetry and Radiation Shielding--collection of works), vyp. 12, Moscow, Atomizdat, 1971, pp 47-52 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A673)

Translation: The neutron spectrum was measured behind the shielding of a 10 GeV synchrotron with the aid of a Bonner counter -- a scintillation detector of boric anhydride and zinc sulfide alloy activated by silver and placed in spherical polyethylene moderators of various diameters. A procedure is developed for restoring the neutron spectrum from the results of Bonner counter measurements. The paper presents neutron spectra behind the shielding of the synchrotron at the Joint Institute for Nuclear Research which were reconstructed by the proposed method. All calculations on verifying the procedure and reconstruction of spectra were done on the BESM-6 computer. An analysis of the results shows that the neutron spectrum is approximated by a function of the form  $1/E^n$  in various energy intervals, where

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USSR

ZAYTSEV, L. N. et al., Vopr. dozimetrii i zashchity ot izluch., vyp. 12, Moscow, Atomizdat, 1971, pp 47-52

$$n = \begin{cases} 1.3-1.5 & \text{for } 10^{-1} < E < 10^2 \text{ eV} \\ 0.9-1.1 & \text{for } 10^2 < E < 10^6 \text{ eV} \\ 0.5-0.4 & \text{for } 10^6 < E < 10^7 \text{ eV} \\ 1.8-2.0 & \text{for } 10^7 < E < 6.3 \cdot 10^7 \text{ eV} \end{cases}$$

The reconstructed spectra agree with neutron spectra previously measured with the aid of nuclear emulsions of the BYa-2 type with a thickness of 400 microns. M. L.

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USSR

KIMEL', L. R., Voprosy Dozimetrii i Zashchity ot Izlucheni, Vyp 11, "Atomizdat," 1970, 200 pp

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2/7

USSR

KIMEL', L. R., Docent and Candidate of technical Sciences,  
~~Editor~~

Voprosy Dozimetrii i Zashchity ot Izlucheni (Questions of Dosimetry and Protection Against Radiation), Vyp 11, Moscow, "Atomizdat," 1970, 200 pp

## Translation:

Annotation: The sequential, eleventh publication of the anthology Voprosy Dozimetrii i Zashchity ot Izlucheni contains articles on questions of dosimetry, radiometry, spectrometry, and protection against radiation.

The articles are written on the basis of work done primarily at the Moscow Engineering Physics Institute, winner of the Order of Labor Red Banner, and finished by the middle of 1969. The original and urgent material being published will be of undoubted interest for persons studying questions of dosimetry and protection against radiation.

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USSR

KIMEL', L. R., Voprosy Dozimetrii i Zashchity ot Izlucheniya, Vyp 11, "Atomizdat," 1970, 200 pp

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6/7

USSR

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7/7

1/2 030 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--RADIATION YIELD BEYOND QIYAI SYNCHROCYCLOTRON SHIELDING -U-  
AUTHOR-(04)-ALEYNIKOV, V.YE., KIMEL, L.R., KOMOCHKOV, M.M., SIDORIN, V.P.  
COUNTRY OF INFO--USSR  
SOURCE--AT. ENERG. 1970, 28(5), 438-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY  
TOPIC TAGS--SYNCHROCYCLOTRON, RADIATION SHIELDING, CONCRETE, ANGULAR  
DISTRIBUTION, SPECTRAL DISTRIBUTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0516 STEP NO--UR/0089/70/028/005/0438/0439  
CIRC ACCESSION NO--AP0137605  
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137605

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE YIELD OF N (FAST, SLOW, AND MEDIUM ENERGY) BEYOND THE QIYAI SYNCHROCYCLOTRON (600 MEV) SHIELDING WAS MEASURED TO DET. SPECTRAL ANGULAR DISTRIBUTION OF THE RADIATION. THE SYNCHROCYCLOTRON IS LOCATED WITHIN A CONCRETE SHIELDING MEASURING 52 TIMES 38 TIMES 32 M. THE THICKNESS OF THE CONCRETE WALLS IS 2 M. ALL WALLS, WITH THE EXCEPTION OF ONE, WERE ALSO PROTECTED BY A LAYER OF EARTH (10 M THICK). THE MOST INTENSIVE RADIATION LOSS, COMPRISING 50-60PERCENT OF THE TOTAL LOSS, OCCURS THROUGH THE WINDOW OPENINGS.

UNCLASSIFIED

USSR

DYN'KIN, V. N., KIMEL'FEL'D, B. N.

"Construction of Nonbinary Arithmetic Codes Correcting Individual Errors"

Probl. Perechachi Inform. [Problems of Information Transmission], 1973, Vol 9, No 1, pp 22-25 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V472, by the authors).

Translation: The problem of finding the basic characteristic of an AN code correcting individual errors is solved. The characteristic is the value of  $M_r(A, 3)$ , defined as the least positive integer, the weight of the product of which by A in the system of notation with the base r is less than 3. The method suggested can be used for any r. Formulas are presented for calculation of  $M_r(A, 3)$ , when r = 5, 7, 11 and 8.

1/1

UDC 541.65

KIMEL'FEL'D, Ya. M., SMIRNOVA, YE. M., PERSHIKOVA, N. I., KALIYA, O. L., TEMKIN, O. N., and FLID, R. M., Institute of Spectroscopy, Academy of Sciences USSR, and Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov, Moscow

"Vibrational Spectra and the Structure of Phosphine and Phosphite Complexes of Palladium Chloride and Bromide"

Moscow, Zhurnal Strukturnoy Khimii, Vol 13, No 4, Jul-Aug 72, pp 622-625

Abstract: On the basis of data obtained by IR and Raman spectroscopy of the phosphine complexes  $\text{Pd}(\text{PPh}_3)_2\text{X}_2$  ( $\text{X} = \text{Cl}, \text{Br}$ ) and the phosphite complexes  $\text{Pd}/\text{P}(\text{OPh})_3/2\text{X}_2$  ( $\text{X} = \text{Cl}, \text{Br}$ ), it was established that the phosphine complexes have a trans-structure and the phosphite complexes a cis-structure. The difference in structure explains why the phosphite complexes are effective catalysts in the synthesis of acrylic acid esters from acetylene at atmospheric pressure according to  $\text{C}_2\text{H}_2 + \text{CO} + \text{ROH} \rightarrow \text{CH}_2=\text{CH}-\text{COOR}$ , while the phosphine complexes are inactive in catalyzing this reaction. The authors thank G. N. Zhizhina, N. I. Afanas'yeva, and A. V. Bobrova for assistance in determining the spectra of the complexes.

1/1

USSR

UDC 51

BRYKIN, P. A., and KIMEL'MAN, S. A.

"Mathematical Programming in the Planning of Geodetic and Topographic Work"

Matematicheskoye programirovaniye v planirovani geodezicheskikh i topografi-  
cheskikh rabot (cf. English above), Moscow, "Nedra," 1972, 230 pp, ill., 87 k.  
(From RZh-Matematika, No 5, May 72, Abstract No 5V469K)

Translation: Chapter 1. Standard Mathematical-Economic Linear-Programming Models. Chapter 2. Basic Trends and Areas of Application of Methods of Mathematical Economics (MSE). Chapter 3. System for Optimal Planning of Enterprise Operation. Chapter 4. Application of MSE in the Drafting of Long-Term GUCK [Main Administration of Geodesy and Cartography] Plan. Chapter 5. Employment of Critical-Path Methods in Topographic and Geodetic Production. Chapter 6. Possibilities of Further Employment of MSE in Topographic and Geodetic Production. Conclusion.

1/1

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USSR

UDC: 51

BRYKIN, P. A., KIMEL'MAN, S. A.

"Mathematical Programming in Planning Geodetic and Topographic Projects"

Matematicheskoye programmirovaniye v planirovanii geodezicheskikh i topo-  
graficheskikh rabot (cf. English above), Moscow, "Nedra", 1972, 200 pp, ill.  
87 k. (from RZh-Kibernetika, No 5, May 72, Abstract No 5V469 K)

Translation: Chapter 1. "Standard Mathematical Economic Models of Linear Programming"; Chapter 2. "Basic Trends in the Area of Using Mathematical Economic Models"; Chapter 3. "Systems for Optimum Planning of the Work of Enterprises"; Chapter 4. "Using Mathematical Economic Methods in Setting up a Long-Range Plan for GUGK [expansion not given]"; Chapter 5. "Use of pert Methods in Topographical-Geodetic Production"; Chapter 6. "Possibilities for Further Use of Mathematical Economic Methods in Topographical-Geodetic Production"; "Conclusion".

1/1

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1/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--TRANQUILIZING PROPERTIES OF CYCLIC DIACETALS OF ALPHA, ALPHA  
PRIMETAU DIBROMOSUCCINIC AND FUMARIC ALDEHYDES AND 2 BUTYNYDIAL -U-  
AUTHOR--KIMENIA, A.  
COUNTRY OF INFO--USSR *K*  
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS 1970, (5), 94-7  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--TRANQUILIZER, DRUG PRODUCTION, ALDEHYDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605015/004 STEP NO--UR/0197/70/000/005/0094/0097

CIRC ACCESSION NO--AP0140593

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140593

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TESTS ON MICE SHOWED THAT A NO. OF CYCLIC DIACETALS (I, N EQUALS 1 OR 2, R EQUALS H, ME, OR CH SUB2 CL) OF 2,3-DIBROMOSUCCINIC ALDEHYDE, FUMARIC ALDEHYDE, AND 2-BUTYNDIAL RELAXED THE SKELETAL MUSCLES, DISRUPTED MUSCULAR COORDINATION, DECREASED BODY TEMP., AND INHIBITED THE CONVULSIVE ACTION OF CORAZOLE. THE TRANQUILIZING ACTION OF THESE COMPOS. WAS GREATER THAN THAT OF THE CORRESPONDING DERIVS. OF SUCCINIC ALDEHYDE. ONE OF THESE COMPOS., 1,2-BIS(4-METHYL,1,3-DIOXOLAN,2,YL)ETHYLENE (II), SHOWED GREATER TRANQUILIZING ACTIVITY AND LOWER TOXICITY THAN 1,2-BIS(1,3-DIOXOLAN,2,YL)ETHYLENE. FACILITY: INST. ORG. SIN., RIGA, USSR.

UNCLASSIFIED

USSR

UDC 615.216.5:547.484.451].012.1

SOKOLOV, G. P., KIMENIS, A. A., VEVERJS, M. M., and GILLER, S. A., Institute of Organic Synthesis, Academy of Sciences Latvian SSR, Riga

"The Synthesis and Curariform Properties of Quaternary Ammonium Derivatives of Cyclic Acetals of Levulinaldehyde and Levulinic Acid"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 3, 1973, pp 8-13

Abstract: Studies were conducted on the curariform properties of quaternary ammonium derivatives synthesized from levulinaldehyde in a manner analogous to that employed for succinaldehyde, except that 2-methyl-2,5-dimethoxytetrahydrofuran was used in the reaction. Quaternary ammonium derivatives of levulinic acid were obtained by reacting 3-(2'-methyl-4'-chloromethyl-1',3'-dioxolanil-2') propionic acid with secondary amines, with the initial formation of the corresponding salt and, on gradual heating from 100 to 150°, the Cl atom on the chloromethyl group was replaced by an amino group. The salt was separated from the concomitantly formed hydrochloride salt of the secondary amine by dissolving it in ethyl acetate, and then reacting it with chloroethylamines. A diiodomethylate derivative of levulinaldehyde showed the greatest curariform activity of the derivatives that were obtained which, in cats, exceeded that of D-tubocurarine 2-fold, but was 11-fold less than that of dioxonium. The duration 1/2

USSR

SOKOLOV, G. P., et al., Khimiko-Farmatsevticheskiy Zhurnal, No 3, 1973,  
pp 8-13

of action of these derivatives was also very short, presumably due to inactivation by pseudocholinesterase. Biological evaluation of the derivatives on cats showed that they possessed either depolarizing, antidepolarizing, or mixed type of curariform activities.

2/2

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USSR

UDC 615.216.5.015

KIMENIS, A. A., KLUJSHA, V. YE., and GIINTEERS, YA. YA., Laboratory of Pharmacology, Institute of Organic Synthesis, Academy of Sciences Latvian SSR, and the Clinic of the Chair of Faculty Surgery, Riga Medical Institute

"Pharmacology of Dioxonium -- a New Muscle Relaxant"

Moscow, Farmakologiya i Toksikologiya, Vol 35, No 2, Mar/Apr 72, pp 172-175

Abstract: Dioxonium has a curarizing activity which exceeds d-tubocurarine by a factor of 22, decamethonium by a factor of 2, and diplicin by a factor of 246. Animal experiments and clinical observations indicate that dioxonium affects neither hemodynamics nor pupil diameter. The drug has a compound mechanism of action. Its H-cholinomimetic activity in the smooth abdominal muscle of the frog is lower than that of ditiline (celocaine) by a factor of 172, it displays a greater affinity for specific H-cholinoreceptors, but it has a lower internal activity than ditiline and decamethonium. In experiments on cats and pigeons, the depolarizing property of dioxonium predominates. However, in human patients, dioxonium functions primarily as an antidepolarizing muscle relaxant. Proserine is its most effective antagonist.

1/1

USSR

UDC 615.779.932+541.697

PETERSON, I. O., KASTRON, Ya. A., VEYNBERG, G. A., and KIMENIS, A. A., Order of Labor Red Banner Institute of Organic Synthesis, Academy of Sciences Latvian SSR

"Acute Toxicity of Some Semisynthetic Nitrofurans and Furan Penicillins"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 7(276), 1970, pp 111-114

Abstract: To determine their toxicity, 23 penicillins were administered intraperitoneally to white mice. With the exception of 2-furyl-penicillin and beta-(2-furyl) ethylene-penicillin, all of the compounds were 2-12 times more toxic than benzylpenicillin. Certain of the nitrofurans and furan compounds have a toxicity level comparable to that of furazolin, solafur, or furagin (furszidine). The other penicillins are less toxic than the nitrofurans derivatives. The presence of a nitro group appears to have only a slight effect on the toxicity of these compounds, however.

1/1

USSR

UDC 615.787

KLUSHA, V. Ye., KIMENIS, A. A., and KURGANI, V. V. Order of Labor Red Banner  
Institute of Organic Synthesis, Academy of Sciences Latvian SSR

"Effect of Thiocholine Esters of Furan- and 5-Nitrofuran-carboxylic Acids on  
Cholinergic Processes"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 7(276), 1970, pp 103-110

Abstract: It was found that furan- and 5-nitrofuran-carboxylic acids affect cholinergic processes. The principal indication of this action is a two-phase nicotine-like effect which includes an excitation effect on the chemoreceptors of the carotid bodies when the compounds are administered intravenously. In experiments with adrenal gland preparations in situ, the compounds increased the epinephrine supply to the blood. The second-phase nicotine-like effect involves ganglioblocking and a curarizing action. A slightly active M-cholinomimetic component was found in both compounds. Introduction of a nitro group produced no significant differences in the pharmacological activity of the compounds.

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USSR

UDC 619.216.5:547.461.8].012.1:619.216.5:747.461.8]  
015.4

SOKOLOV, G. P., KIRENIS, A. M., KRUSKOP, B. K., KLUCHEA, V. YE., and GILBER, S.A.,  
Institute of Organic Synthesis, Acad. Sc. LatvSSR, Riga

"Synthesis and Pharmacological Properties of Sebacic Aldehyde Cyclic Diacetals"

Moscow, Khimiko-Farmatsveticheskiy Zhurnal, Vol 6, No 2, Feb 72, pp 19-24

Abstract: Sebacic aldehyde was synthesized by catalytic reduction of sebacyclic dichloride over palladium in xylene and without isolation was immediately converted to the diacetal by reacting it with ethyl orthoformate, from which the cyclic diacetal was obtained by transacetylation with glycerine *N*-mono-chlorohydrine in toluene. Heating the cyclic diacetals with pyrrolidine or dimethylamine gave quaternary salts which were eventually converted to the diiodides. The cyclic diacetals show myonesin-like properties exceeding the activity of succinaldehyde, but showing lower toxicity. The quaternary salts exhibited high curare-like activity, their action resembling closely that of succinaldehyde derivatives.

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USSR

UDC 669.71.018.9.4

KIMSTACH, G. M., and KORYAKIN, G. I.

"Effective Refining of Aluminum Alloys"

Liteyn. proiz-vo, [Casting Production], No. 9, 1970, 13-14, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No. 1 G160 by the authors).

Translation: Combined methods have been developed for refining of aluminum alloys with hexachloroethane in the furnace and liquid flux with overflow. This refining purifies the melts of solid and gaseous impurities most completely, increasing the physical, mechanical, and corrosion properties of the alloys.

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USSR

UDC 669.71.013.9.4(088.8)

KIMSTACH, G. M., KORYAKIN, G. I., UTKIN, S. Ye., SOTNIKOVA, A. T.,  
YEFIMOVA, A. Ya., and PROTALOV, V. M.

"Method of Refining Aluminum Alloys"

USSR Author's Certificate No. 265451, Filed 8/07/68, Published 23/06/70,  
(Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract  
No. 1 G159 P).

Translation: In order to achieve simultaneous removal of gas inclusions  
and nonmetallic impurities and to increase the effectiveness of refining,  
the alloy is treated with hexachloroethane with a layer of liquid  
refining flux on the surface of the bath.

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USSR

UDC 669.721.018.9(088.8)

RYABUKHOV, S. I., KIMSTACH, G. M., PIRYAZEV, V. P., UTKIN, S. Ye., and MAYBORODA, M. V.

"Device for Production of Magnesium Alloy"

USSR Author's Certificate No 268450, Filed 30/12/66, Published 8/09/70  
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G189 P)

Translation: A device suggested for the production of an Mg alloy includes an induction furnace with a rotating mechanism and a mold. To decrease the expenditure of Mg and improve the properties of the alloy, the device is equipped with a replaceable mold, hermetically placed on the crucible of the induction furnace. A steel plate which is melted during the process of melting the alloy is placed between the induction furnace and the mold in order to decrease the free surface over the melt and eliminate cold surfaces which would condense the Mg from its vapors.

1/1

1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--PREPARATION OF REFINED SECONDARY ALUMINUM ALLOYS IN A MACHINE  
CONSTRUCTION SHOP -U-  
AUTHOR-(05)-KIMSTACH, G.M., UTKIN, S.YE., ZHELEZNVAKOV, L.R., KORYAKIN,  
G.I., YEFIMOVA, A.YA.  
COUNTRY OF INFO--USSR  
SOURCE--LETEINDE PROIZVOD. 1970, (1), 10-11  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--ALUMINUM ALLOY, SECONDARY METAL, MAGNETIC SEPARATION, METAL  
REFINING, TECHNICAL STANDARD/(U)AL4 ALUMINUM ALLOY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1995/1380 STEP NO--UR/0128/70/000/001/001G/0011  
CIRC ACCESSION NO--AP0116829  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116929

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE ALLOYS WERE PREPD, FROM AL TURNINGS (GRADE AL4) IN 2 STAGES: PRELIMINARY TREATMENT AND REMELTING. THE PRELIMINARY TREATMENT CONSISTED IN SEPN. FROM DIRT ON SCREENS, DRYING IN DRUMS AT 300-500DEGREES, AND MAGNETIC SEPN. FROM IRON IMPURITIES. THEN THE TURNINGS WERE REMELTED IN AN INDUCTION CRUCIBLE FURNACE. AT 740DEGREES, 1.5PERCENT FLUX (KCL 47, NA CL 30, AND NA SUB3 AIF SUB6 23WT.PERCENT) WAS ADDED, AFTER MELTING OF WHICH C SUB2 CL SUB6 WAS ADDED (IN 0.1PERCENT AMTS. FOR A TOTAL AMT. 0.7-0.8PERCENT). BEFORE TAPPING LIQ. FLUX (KCL 47.5, NA CL 47.5, AND NA SUB3 AIF SUB6 5 WT.PERCENT) IN THE AMT. 2.5PERCENT OF THE METAL WAS ADDED INTO THE LADLE. THE RESULTING MIXING DURING POURING RESULTED IN EFFICIENT REFINING FROM IMPURITIES AND GASES, SO THAT THE RESULTING METAL CORRESPONDED TO GUST STDS. FOR THE ORIGINAL AL4 METAL AND CONTAINED GASES 0.10-0.12 CM PRIME3-100G WITH COMPLETELY PORE FREE TEXTURE. AUTOMOBILE CYLINDER BLOCKS CAST WITH THE ADDN. OF 20PERCENT OF THIS SECONDARY METAL WERE OF THE SAME QUALITY AS THOSE CAST FROM 100PERCENT PRIMARY ALLOY AL4.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--USE OF SOLID ELECTRODES DURING THE POTENTIOMETRIC TITRATION OF  
CHLORIDES BY A MERCURIMETRIC METHOD -U-  
AUTHOR-(03)-KIMSTACH, V.A., KOVALENKO, P.N., IVANOVA, Z.I.  
COUNTRY OF INFO--LSSR  
SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 588-90  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORIDE, METAL ELECTRODE, TANTALUM, TIN, LEAD, SILVER,  
TUNGSTEN, MOLYBDENUM, NICKEL, POTENTIOMETRIC TITRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/0469

STEP NO--UR/0075/T0/025/003/0588/0590

CIRC ACCESSION NO--AP0126221

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70  
CIRC ACCESSION NO--AP0126221  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE USE OF AG, W, MO, CU, C. CD,  
NI, FE, PB, TA, AND SN ELECTRODES DURING THE POTENTIOMETRIC TITRN. OF  
CHLORIDES WITH HG(NO SUB3) SUB2 WAS STUDIED. THE W ELECTRODES GIVE THE  
LARGEST POTENTIAL JUMP AT THE EQUIVALENCE POINT. TITRN. IS ALSO  
POSSIBLE WITH AG, TA, AND C ELECTRODES. BIMETALLIC ELECTRODE PAIRS SUCH  
AS W-C, AG-TA, AG-C, C-TA, W-TA CAN ALSO BE USED FOR TITRN. THE MOST  
SUITABLE IS THE W-C PAIR. FACILITY: ROSTOV-ON-DON STATE UNIV.,  
ROSTOV-CN-DCN, USSR.

UNCLASSIFIED



USSR

UDC 621.793.3:669.245'28'781

VAL'SYUNENE, YA. I., PROKOPCHIK, A. YU., KIMTENE, D. P., and VILUTENE, V. A.

"Preparation of Tri-Component Ni Coatings by Chemical Methods"

Kaunas, Tr. AN LitSSR (Works of the Academy of Sciences LitSSR), No 2(69), Series B, 1972, pp 3-16 (from Referativnyy Zhurnal -- Khimiya, No21(II), 1972, Abstract No 21L313 by E. Z. Napukh)

Translation: Conditions for the chemical deposits of coatings and some physical and mechanical properties of Ni-B alloys containing Mo, W, Fe, and Re are discussed. Alloys under consideration can be deposited under industrial conditions from alkaline solutions containing  $Ni^{2+}$ , reducer  $NaBH_4$ , stabilizer  $K_2S_2O_5$ , ethylenediamine (individually or mixed with tartarates), and  $Na_2MoO_4$ ,  $K_2WO_4$ ,  $NaReO_4$ , or  $FeSO_4$  salts, depending on the alloy composition. The concentration of Re in individual alloy reached 20 weight %, Mo 7 weight %, W 9 weight %, Fe 60 weight %. The concentration of B in all cases was from 3 to 7 weight %. All alloys were semilustrous, with low porosity, and their microhardness after thermal treatment was within 1050-1500  $kg/mm^2$ . All of them were nonmagnetic, with the exception of Ni-Fe-B alloy.

1/1

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USSR

UDC: 533.6.011.8

VASIL'EV, L.A., ZHDANOVA, L.N. and KINAYCHEV, A.D.

"Moment Characteristics of 15-Degree Cones in Flow of Rarefied Gas"

Novosibirsk, Sb. Eksperim. Issled. i Vopr. Modelir. Teheniy Razrezhennogo Gaza (Symposium on Experimental Investigations and Modeling Problems of Rarefied Gas Flow), 1971, pp 105-111 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2B266 by A. I. Bunimovich)

Translation: Results are presented of an experimental investigation to determine the aerodynamic moment of cones with  $15^\circ$  half-opening angle and with apex rounded to the radius of 0, 0.3, 0.6, 0.9 and 1.0, with Mach number of 4 to 7 and angle of attack from 0 to  $180^\circ$ . A continuous increase of non-dimensional aerodynamic moment coefficient with the decrease of Reynolds number is observed. The experimental data are compared to the calculation results based on Newton theory, Free Molecular Flow theory and theory based on local interaction hypothesis.

1/1

USSR

UDC 621.396.677.7

KINBER, B. YE., POPICHENKO, V. A.

"Sectoral Horn Radiation"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2035-2042

Abstract: A study was made to establish the correspondence between the two methods used to calculate the radiation of sectoral horns -- the Kirchhoff method and the method of the geometric theory of diffraction -- and also the correspondence between the two versions of the method of the geometric diffraction theory -- the method of successive diffractions [V. A. Borovikov, Diffraktsiya na mnogougol'nikakh i mnogogrannikakh, Nauka Press, 1966] and the self-consistent field method [B. Ye. Kinber, Radiotekhnika i elektronika, Vol 9, No 9, 1594, 1964]. In both versions the solution of the problem is formed as the superposition of a set of diffraction problems of directional (standard) cylindrical waves on halfplanes -- the edges of a horn. The number of standard waves used defines the accuracy of describing the interaction of the edge waves and, in the final analysis, the accuracy of calculating the field. The effect of this factor is also evaluated. The results of some numerical calculations are presented indicating that the self-consistent field method is the best. The Kirchhoff method gives an error on the order of several percentages.

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USSR

UDC: 621.396.677.8.095

KINBER, B. Ye., TISHCHENKO, V. A.

"Polarization of the Emission of Axisymmetric Mirror Antennas"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 4, Apr 72, pp 680-686

Abstract: The authors analyze polarization of the emission of axisymmetric multiple-reflector antennas, i. e. Cassegrainian or modified Cassegrainian systems, systems with a spherical mirror, and also systems in which the reflectors are segments of axisymmetric mirrors (systems with a remote radiator, parabolic horn antennas). A study is made of the field of asymmetry of the emitter, i. e. the influence of rotating the emitter relative to the axis of the system and the difference between its polar diagrams in the E- and H-planes. It is shown that there is no transverse cross polarization component for emitters of "optical" type, e. g. horns. The cross polarization component of the polar diagram is investigated.

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USSR

UDC: 621.372.8:535

KINBER, B. Ye., MAL'TSEV, N. Ye., and TOKATLY, V. I.

"Geometrical Optics of Irregular Waveguides"

Tr. Akust. in-ta (Transactions of the Acoustical Institute) 1970,  
No. 13, pp 77-85 (from RZh-Radiotekhnika, No. 3, March 71, Ab-  
stract No. 3B212)

Translation: Matching beam structures in two-dimensional irregular waveguides, identical to Brillouin waves in waveguides whose walls permit separation of different waves, are constructed. Resume

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CSO: 1860-W

- END -

USSR

UDC: 621.372.82

KINBER, B. Ye., MAL'TSEV, N. Ye., TOKATLY, V. I.

"Asymptotic Theory of Irregular Waveguides and Horns"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 12, Dec 70, pp 2512-2521

Abstract: A new method is proposed for calculating irregular waveguides. The field in the waveguide is sought in asymptotic form as the sum of two fields of radial type where each field is characterized by congruence of rays and radiation pattern. The solution is reduced to a sequence of two problems: determining the geometric structure of self-consistent congruences of the rays, i.e. the congruences which are brought into themselves after reflection from two walls of the waveguide; and determining the asymptotic expansion of the amplitudes of the fields from the boundary conditions. Both these problems are reduced to the solution of functional equations. Examples of calculation are given. The condition of detachment of the field from the walls of a horn is analyzed.

1/1

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USSR

UDC 621.396.677.012.12

KINBER, B.YE., TSEYTLIN, V. B.

"Phase Centers of Parabolic Antennas"

Moscow, Radiotekhnika i Elektronika, Vol XVI, No 2, February 1971, pp  
249-261

Abstract: In this article, the relation between the directional diagrams of a parabolic antenna is described in the current and aperture approximations. The effect of the Fresnel zone of the exciter and the curvature and edges of the mirror are considered when recording the diagram in the current approximation. The phase center of an axisymmetric antenna in the E- and H-planes is calculated for different laws of illumination and depth of the mirror.

It is pointed out that, in contrast to previous papers, when calculating the position of the instantaneous phase center of mirror antennas here, the effects of proximity of the exciter to the mirror, the surface curvature of the mirror and the presence of fringe currents are considered. A graph is presented showing the position of the phase center

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USSR

KINBER, B. YE., et al., Radiotekhnika i Elektronika, Vol XVI, No 2,  
February 1971, pp 249-261

$z_e/f$  as a function of  $D/f$  for various values of the illumination parameter  $p = 0, 0.7, 0.9$  and  $1$ , that is, a uniform reflected wave, diminishing to  $0.3, 0.1$  and the zero level. As follows from the figure, the phase center can be both in front of the mirror apex and behind it. With the exception of the case of  $p = 0$  for the E-plane, the phase center is behind the plane tangent to the edge of the mirror which is usually considered the aperture plane.

2/2

- 8 -



USSR

UDC 621.396.67.001.5

K  
KIREYEV, E. K., KINBER, B. E.

"Special Features of Fringe Radiation of Polygonal Apertures"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 2, 1970,  
pp 246-251

Abstract: The fringe radiation of aperture antennas is considered as the result of fringe wave interaction. Space radiation patterns of various polygonal apertures with nonparallel sides are presented. It is shown that in contrast to rectangular or nearly similar apertures, where the primary portion of the fringe radiation is concentrated along rays normal to the aperture edges, and in contrast to round (oval) apertures where the fringe radiation is uniformly distributed along all direction, the polygonals with nonparallel sides make it possible to reduce the fringe radiation level in a finite region of a solid sphere. Calculations were carried out for a field in an aperture using Kirchhoff's approximation for a quadrangle with  $\alpha = 0; 15; 30$  and  $45^\circ$  and also for an equilateral triangle. The results show that: 1) the fringe radiation of polygonal

1/2

USSR

KIREYEV, E. K., et al, Radiotekhnika i Elektronika, Vol 15, No 2, 1970, pp 246-251

Abstract: apertures is concentrated basically in bands of fringe wave lobes; 2) the level of fringe radiation in these regions is determined by two factors -- fringe wave amplitude and fringe wave interference at different edges; 3) the application of polygonal apertures with nonparallel edges makes it possible to eliminate the interference. However, the relative value of the aperture perimeter increases simultaneously, leading to an increase in fringe waves amplitude; and 4.) during optimum selection, which provides a compromise between the indicated contrasting tendencies, the application of polygonal apertures makes it possible to decrease the level of side radiation as compared with the level of side radiation of rectangular and circular apertures.

2/2

1/2 036 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--SPECIAL FEATURES OF FRINGE RADIATION OF POLYGONAL APERTURES -J-

AUTHOR--(02)-KIREYEV, E.K., KINDER, B.E.

K

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, VOL 15, NO 2, 1970, PP  
246-251

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--ANTENNA RADIATION PATTERN, ANTENNA EFFECTIVE APERTURE,  
ELECTROMAGNETIC RADIATION, ANTENNA SIDE LOBE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1991/1332

STEP NO--UR/0109/70/015/002/0246/0251

CIRC ACCESSION NO--AP0110908

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--020CT70

2/2 036

CIRC ACCESSION NO--AP0110908

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

ABSTRACT. THE FRINGE RADIATION OF APERTURE ANTENNAS IS CONSIDERED AS THE RESULT OF GRINGE WAVE INTERACTION. SPACE RADIATION PATTERNS OF VARIOUS POLYGONAL APERTURES WITH NONPARALLEL SIDES ARE PRESENTED. IT IS HSDOWN THAT IN CONTRAST TO RECTANGUALR OR NEARLY SIMILAR APERTURES, WHERE THE PRIMARY PORTION OF THE FRINGE RADIATION IS CONCENTRATED ALONG RAYS NORMAL TO THE APERTURE EDGES, AND IN CONTRAST TO ROUND (OVAL) APERTURES WHERE THE FRINGE RADIATION IS UNIFORMLY DISTRUBITED ALONG ALL DIRECTION, THE POLYGONALS WITH NONPARALLEL SIDES MAKE IT POSSIBLE TO REDUCE THE FRINGE RADIATION LEVEL IN A FINITE REGION OF A SOLID SPHERE. CALCULATIONS WERE CARRIED OUT FOR A FIELD IN AN APERTURE USING KIRCHHOFF'S APPROXIMATION FOR A QUADRANGEL WITH ALPHA EQUAL 0:15:30 AND 45DEGREES AND ALSO FOR AN DQUILATERAL TRIANGLE. THE RESULTS SHOW THAT: 1) THE FRINGE RADIATION OF POLYGONAL ABSTRACT: APERTURES IS CONCENTRATED BASICALLY IN BANDS OF FRINGE WAVE LOBS; 2) THE LEVEL OF FRINGE RADIATION IN THESE REGIONS IS DETERMINED BY TWO FACTORS, FRINGE WAVE AMPLITUDE AND FRINGE WAVE INTERFERENCE AT DIFFERENT EDGES; 3) THE APPLICATION OF POLYGONAL APERTURES WITH NONPARALLEL EDGES MAKES IT POSSIBLE TO ELIMINATE THE INTERFERENCE. HOWEVER, THE RELATIVE VALUE OF THE APERTURE PERIMETER INCREASES SIMULTANEOUSLY, LEADING TO AN INCREASE IN FRINGE WAVES AMPLI E; AND 4) DURING OPTIMUM SELECTION, WHICH PROVIDES A COMPROMISE BETWEEN THE INICATED CONTRASTING TENDENCIES, THE APPLICATION OF POLYGONAL APERTURES MAKES IT POSSIBLE TO DECREASE THE LEVEL OF SIDE RADIATION AS COMPARED WITH THE LEVEL OF SIDE RADIATION OF RECTANGULAR AND CIRCULAR APERTURES.

UNCLASSIFIED

172 026 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--MODIFIED ASYMPTOTIC EXPANSIONS FOR THE NEAR FIELDS OF ANTENNAS -U-

AUTHOR--(02)-KINBER, B.YE., BRONTVEYN, M.D.

COUNTRY OF INFO--USSR

SOURCE--IZV. VUZ. RADIOTEKHNIKA I ELEKTRONIKA, VOL. 15, MAY 1970, P.  
905-913

DATE PUBLISHED----MAY70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS

TOPIC TAGS--ASYMPTOTIC EXPANSION, ANTENNA ACTIVE ELEMENT, ANTENNA  
EFFECTIVE APERTURE, ANTENNA MAIN LOBE, ANTENNA SIDE LOBE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/0356

STEP NO--UR/0109/70/015/000/0905/0913

CIRC ACCESSION NO--AP0124113

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124113

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSTRUCTION OF MODIFIED ASYMPTOTIC EXPANSIONS OF THE FIELD OF A COPHASED TWO DIMENSIONAL ANTENNA, APPLICABLE BOTH IN THE NEAR AND FAR ZONES INCLUDING IMMEDIATE PROXIMITY TO THE APERTURE. FIELD CALCULATIONS ARE MADE IN THE SIDELobe REGION, IN THE MAIN LOBE REGION, AND IN THE PROJECTED BEAM REGION (WHERE RAYS ARE PARALLEL) FOR A UNIFORM DISTRIBUTION IN THE APERTURE, FOR A DISTRIBUTION DROPPING TO ZERO ACCORDING TO A COSINE LAW, AND FOR TWO POINT SOURCES. THE PROPOSED METHOD CAN BE GENERALIZED TO CASES OF ANTENNAS WITH FIELD DISTRIBUTIONS WHICH ARE NOT IN PHASE AND TO THREE DIMENSIONAL CASES (LINEAR ANTENNAS AND ANTENNAS WITH A CIRCULAR APERTURE).

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--EVALUATING THE PLASTIC PROPERTIES OF NAIRIT -U-  
AUTHOR--(03)-KARAS, L.YA., KINDER, A.V., SAVELYEVA, L.I.  
COUNTRY OF INFO--USSR  
SOURCE--KAUCH. REZINA 1970, 29(2), 15-17  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--CHLOROPRENE, PLASTICITY, RUBBER WORKING MACHINERY, SYNTHETIC  
RUBBER/(U)NAIRIT SYNTHETIC RUBBER  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/0459 STEP NO--UR/0138/70/029/002/0015/0017  
CIRC ACCESSION NO--AP0119395  
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--23OCT79

CIRC ACCESSION NO--AP0119395

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD WAS DEVELOPED FOR DETG. THE MILLING CONDITIONS OF NAIRIT (I) FROM LAB. TESTS BY USING I OF INITIAL PLASTICITY (P SUB0) AND FINAL PLASTICITY (P SUB2) AFTER MILLING I BETWEEN ROLLERS 2 MM APART. THE DIFFERENCE P SUB2-P SUB0 OFFERED A MEANS TO DET. THE EMPIRICAL MILLING CONSTS. FOR 26 AND 60 IN. MILLS. THE EXPTL. DATA AGREED WITH THE CALCD. RESULTS. FACILITY: SVERDLOVSK. FILIAL NAUCH.-ISSLED. INST. REZIN PRGM., SVERDLOVSK, USSR.

UNCLASSIFIED



1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--USING NIOBIUM CARBIDE AS HEATERS FOR ELECTRIC RESISTANCE FURNACES  
-1-  
AUTHOR--(05)-SAMSONOV, G.V., KINDYSHEVA, V.S., KISLYY, P.S., MALTSEVA,  
E.P., MARKER, E.N.  
COUNTRY OF INFO--USSR  
SOURCE--KIEV, TEKHNOLGIYA I ORGANIZATSIYA PROIZVODSTVA, NO 1, 1970, PP  
85-86  
DATE PUBLISHED-----70  
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS  
TOPIC TAGS--NIOBIUM CARBIDE, BIBLIOGRAPHY, ELECTRIC RESISTANCE, ELECTRIC  
FURNACE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1999/1340 STEP NO--UR/041870/006/001/0085/0086  
CIRC ACCESSION NO--AP0123298  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123298

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDITIONS ARE DESCRIBED FOR PRODUCING HEATERS MADE FROM NIOBIUM CARBIDE DESIGNATED FOR OPERATION IN HIGH TEMPERATURE ELECTRIC RESISTANCE FURNACES, IN A PROTECTIVE ATMOSPHERE OR IN A VACUUM. PARTICULARS OF THE HEATERS PRODUCED ARE DESCRIBED. THE HEATERS ARE OF HIGHER DENSITY. IT IS SHOWN THAT NIOBIUM CARBIDE HEATERS CAN OPERATE CONTINUOUSLY WITHOUT SIGNIFICANT CHANGES IN THEIR CHEMICAL COMPOSITION OR STRUCTURE AT 2500-2600DEGREESC AND IN A 1 TIMES 10 PRIME NEGATIVE3 MINUS 1 TIMES 10 PRIME NEGATIVE4 MM HG FOR 300 HOURS.

UNCLASSIFIED

USSR

UDC 619.616.988.43-022.39:636.29

KINDYAKOV, V. I., NAGUMANOV, F. M., BALGANBAYEV, Ye. Kh., ZINOV'YEV, B. S.,  
PANKRATOV, L. D., and CHUFARIN, A. M., Kazakh Scientific Research Veterinary  
Institute

"The Epizootiological Role of Wild Even-Toed Ungulates in Foot-and-Mouth  
Disease"

Moscow, Veterinariya, No 9, Sep 70, pp 52-53

Abstract: Experiments conducted with roe deer, saiga antelopes, and Caspian deer (marals) showed that these animals are highly susceptible to infection with foot-and-mouth disease. An outbreak of foot-and-mouth disease caused by the A<sub>22</sub> virus variant occurred in 1967 among cattle that were isolated from contact with other cattle. The virus was introduced by a hunter who had brought the carcass of an infected saiga antelope into the locality. Mass infections of saiga antelope with foot-and-mouth disease occur. The animals showed typical symptoms of the disease and the A<sub>22</sub> virus was isolated from them. Under the conditions prevalent in Kazakhstan, saiga antelope form one of the principal sources of transmission of foot-and-mouth disease to farm animals; the antelope become infected with this disease from cattle and transmit it to

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USSR

KINDYAKOV, V. I., et al., Veterinariya, No 9, Sep 70, pp 52-5.

other cattle. Measures taken by the veterinary service to prevent transmission of foot-and-mouth disease by saiga antelopes involve constant observation of the antelope herds to check for the presence of infection, tracing of the routes of migration of these herds, and prevention of infection of the antelope themselves. Similar measures should be taken with respect to other wild even-toed ungulates in Kazakhstan.

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