

2/2 028
CIRC ACCESSION NO--AA0109745

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCESS, CARRIED OUT IN BASIC
ELEC. FURNACES, INVOLVES REDN. OF THE MELT UNDER A CAO-AL SUB2 O SUB3
SLAG AND O BLOWING. TO PRODUCE A METAL HAVING A SI CONTENT IS SMALLER
THAN 0.1PERCENT, THE CAO-AL SUB2 O SUB3 SLAG IS APPLIED BY DISSOLVING
SOLID LIME IN AL SUB2 O SUB3 THAT HAS BEEN DIRECTLY OBTAINED (IN THE
FURNACE) BY OXIDN. OF POWD. AL.

ZZZZZZZZZZZZ

UNCLASSIFIED

AA0040651

KOSYREV L. K.

UR 0482

6

Soviet Inventions Illustrated, Section I Chemical, Derwent, ¹⁻²⁰

240726 ELECTROSLAG REMELTING in a syphon bottom pouring operation: the consumable electrode is inserted so that its base is clear of the bottom by one third of the slag bath depth. Voltage is applied and the molten slag syphoned into the mould, or else imported via a tundish and orifice in the bottom of the mould. The slag rises and makes the circuit. The idea is to raise the slag sharply and thus avoid any skull or crusting on the mould bottom or walls. Once the slag reaches project height, syphoning stops and remelting proceeds normally.

5.3.66 as 1060334/22-2. PATON, B. E. et al. E. O. PATON ELECTROWELDING INST. (26.8.69) Bul 13/1.4.69. Class 18b. Int. Cl. C 21 c.

18

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19750234

AA0040651

AUTHORS: Paton, B. Ye.; Medovar, B. I.; Latash, Yu. V.; Dudko, D. A.;
Yemel'yanenko, Yu. G.; Klyuyev, M. M.; Pryamishnikov, I. S.;
Laktionov, V. S.; Butskiy, V. N.; and Kosyrev, L. K.

Ordena Trudovogo Krasnogo Znameni Institut Elektronvarki
imeni E. O. Patona

19750235

2/12

1/2 033

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--TECHNOLOGICAL TREATMENT OF A MOLTEN METAL BY POWDERED MATERIAL -U-

AUTHOR--(05)-SIMONOV, V.I., KOSYREV, L.K., ~~EILIPPOV, A.F.~~, PRYANISHIKOV,
I.S., KABANOVA, N.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UNCHEB. ZAVED., CHERN. METAL. 1970, 13(1) 52-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LIQUID METAL, CALCIUM FLUORIDE, CALCIUM OXIDE, PHOSPHORUS
CONTAINING ALLOY, STEEL, POWDER METAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0962

STEP NO--UR/0148/70/013/001/0052/0055

CIRC ACCESSION NO--AT0105831

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0105831

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPHOSPHORIZATION OF STEEL
 CONTG. P 0.03-0.1, C 0.12-1.09, AND MN 0.07-0.15 WT. PERCENT WAS CARRIED
 OUT IN A 40 KG INDUCTION FURNACE WITH BASIC CRUCIBLE BY MEANS OF A
 POWDER OF CAO AND CAF SUB2 (RATIOS 9:1, 4:1, AND 3:1) BLOWN THROUGH THE
 MOLTEN METAL IN A GAS SUSPENSION. NO INCREASE IN N OR O CONTENT WAS
 OBSD.; ON THE CONTRARY, THE GAS CONTENT OF THE METAL DECREASED DURING
 THE BLOWING WITH THE POWDERS. THE BEST DEPHOSPHORIZATION CONDITIONS
 WITH CAO-CAF SUB2 MIXTS. OCCURRED WITH THE MIXT. CAO:CAF SUB2 EQUALS 4:1
 AND THE WORST AT A RATIO 3:1. THE ADDN. OF FEO TO THESE MIXTS. DID NOT
 INCREASE THE DEPHOSPHORIZATION DEGREE; HOWEVER, THE REPLACEMENT OF A
 PART OF THE CAO BY BAO IMPROVED THE DEPHOSPHORIZATION, SO THAT WITH
 CAO-BAO-CAF SUB2 EQUALS 3:1:1 THE FINAL P CONC. WAS 0.008-0.005 WT.
 PERCENT.

UNCLASSIFIED

USSR

UDC 621.777.07.001.5

GUN, G. Ya., POLUKHIN, P. I., RUTMAN, G. G., SKUGAREV, V. I., and KOSYREV,
V. K.

"An Experimental Investigation of the Speeds of Effusion During Pressing in
Two-Channel Dies"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya,"
1970, pp 208-211

Translation: While developing the optimal design of pressing dies, it was necessary to make a series of experiments to analyze the kinematic conditions of the process. In this work, the influence of the ratio of the areas and shape of orifices in a flat two-channel die on the exit speed of sections being pressed is studied. A method is developed for measuring the speeds of metal effusion. The results obtained are evidence of the slight influence of section shapes on the nature of change in the speed as a function of the ratio of their section areas. A significant difference in metal effusion manifests itself where the ratio of areas is greater than two. Four figures and one bibliographic entry.

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1/2 021
UNCLASSIFIED
TITLE--SYNTHESIZING ORGANIC DIFLUORAMINES -U- PROCESSING DATE--09OCT70
AUTHOR--(02)--FOKIN, A.V., KOSYREV, YU.M.
COUNTRY OF INFO--USSR
SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(1) 81-91
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FLUORINATED ORGANIC COMPOUND, FLUORINE, AMINE, CHEMICAL
SYNTHESIS, FLUORINATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1579 STEP NO--(R/0063/70/015/001/0081/0091
CIRC ACCESSION NO--AP0112573
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112573

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW THROUGH 1968 OF
FLUORINATION IN POLAR SOLVENTS AND. DIFLUOROAMINATION WITH N SUB2 F SUB4,
HNF SUB2, AND CLNF SUB2, WITH 161 REFS.

UNCLASSIFIED

USSR

UDC 547.233 + 547.221

FOKIN, A. V., ~~KOSYREV~~-YU. M., and NOVOSELOV, N. P.

"Kinetics of Dehydrofluorination of Vicinal Bis(N,N-difluoroamino)alkanes in Ethyl Alcohol"

Leningrad, Zhurnal Obshchey Khimii, Vol 39, No 6, Jun 69, pp 1337-1340

Abstract: The article describes the results of a kinetic study of the dehydrofluorination of a series of vicinal 1,2-bis(N,N-difluoroamino)alkanes in alcohol. It is shown that the dehydrofluorination rate depends on the structure of the substance and is a function of the electrophilicity of hydrogen atoms on the carbon atoms linked with the difluoroamine groups. The kinetics of the process are of a pseudofirst order and of a base-catalytic character.

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1/2 017 UNCLASSIFIED PROCESSING DATE-- 27/09/70
TITLE--MECHANISM OF THE REACTION OF DIFLUORAMINE WITH CARBONYL COMPOUNDS
-U-
AUTHOR--(04)--FOKIN, A.V., KOSYREV, YU.M., GALAKHOV, I.Y., RAGULIN, I.I
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(1), 111-14
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL REACTION MECHANISM, FLUORINATED ORGANIC COMPOUND,
AMINE, NITROGEN FLUORIDE, CARBONYL RADICAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1863 STEP NO--UR/0020/70/192/001/0111/0114
CIRC ACCESSION NO--AT0132125
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0132125

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC CURVES FOR THE REACTION OF HNF SUB 2 WITH ME SUB 2 CO TO GIVE ME SUB 2 C(NF SUB 2)OH WERE SHOWN. IT WAS CONCLUDED THAT DESPITE A SUPERFICIAL RESEMBLANCE TO CYANOHYDRIN FORMATION, THIS REACTION DIFFERS FROM IT. THE REACTION OF HNF SUB 2 PROCEEDS BY AN ELECTROPHILIC MECHANISM, DUE TO THE ACTIVITY OF THE UNSHARED ELECTRON PAIR AT THE CARBONYL O ATOM. THIS IS CONFIRMED BY THE INERTNESS OF (CF SUB 3) SUB 2CO IN THIS REACTION, AND ITS HIGH ACTIVITY IN CYANOHYDRIN FORMATION. A REACTION SCHEME WAS SHOWN.

UNCLASSIFIED

1/2 024

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--COMPLEXING OF DIFLUOROAMINE WITH CARBONYL COMPOUNDS -U-

AUTHOR--(04)-FOKIN, A.V., KOSYREV, YU.M., GALAKHOV, I.V., RAGULIN, L.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM, 1970, (4), 934-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBONYL COMPOUND, FLUORINATED ORGANIC COMPOUND, AMINE, COMPLEX COMPOUND, LOW TEMPERATURE EFFECT, NMR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1467

STEP NO--UR/0062/TQ/000/004/0934/0936

CIRC ACCESSION NO--AP0135138

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135138

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING WERE PREPD. FROM CARBONYL COMPODS. AND HNF SUB2 IN CH SUB2 CL SUB2 AT MINUS 40DEGREES TO MINUS 70DEGREES, AS ADDUCTS OF THE GENERAL TYPE R SUB2 C(OH)NF SUB2 (R SUB2 SHOWN): ME SUB2; ME, ET; ME, H; ET, H; PR, H; ALSO THE ADDUCT OF ET SUB2 O WITH HNF SUB2. ALL THESE WERE DETECTED IN THE SOLN. BY PROTON NMR SPECTRA, WHICH WERE DESCRIBED. ALTHOUGH THE FORMAL STRUCTURES OF THE ADDUCTS ARE UNCERTAIN, THE LIKELY PRECURSORS TO THE ABOVE LISTED DIFLUOROAMINO ALCS. ARE ADDUCTS OF GENERAL TYPE R SUB2 C(O)HNF SUB2 BONDED BY A FORM OF H BOND BETWEEN THE CARBONYL O AND THE N ATOM. INITIAL MIXING OF THE REACTANTS RESULTS IN A PROGRESSIVE SHIFT OF THE TRIPLET SIGNAL OF THE HNF SUB2 PROTON TOWARD WEAKER FIELDS; FOR MANY MIN. THE INTENSITY AND FORM OF THE SIGNAL HNF SUB2 REMAIN UNCHANGED, BUT ON LONGER EXPOSURE, AND ESP. AT ROOM TEMP., AN IRREVERSIBLE AND COMPLETE DISAPPEARANCE OF THE HNF SUB2 SIGNAL TAKES PLACE, ALONG WITH APPEARANCE OF A NEW SIGNAL FROM THE HYDROXYL PROTON IN THE DIFLUOROAMINO ALC. PRODUCT. WITH EQUIMOLAR PROPORTION OF REACTANTS, THE INITIAL SHIFT OF THE PROTON SIGNAL OF HNF SUB2 AMTS. TO AS MUCH AS 1-1.5 PPM.

UNCLASSIFIED

Single Crystals

UDC 669.28:559.374

USSR

YASTREBKOV, A. A., OPLESNIN, B. A., LUBENETS, V. P., KOSYREV, Yu. N., and
YAKUTOVICH, M. V.

"The Annealing of Plastically Bent Molybdenum Single Crystals"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 4, Apr 71, pp 843-848

Abstract: Structural changes and kinetics of polygonization by annealing plastically bent single crystals of molybdenum of four orientations were investigated by X-ray and metallographic methods. It was found that the deformation character depends on the crystal orientation. Kinetics of structural changes by isothermal annealing in the temperature interval of 1700°C to 2500°C and the extinguishing character of the growth of polygons are discussed. The investigation results are analyzed by reference to microstructures, topograms, and the established dependence of the change of the orientation angle of neighboring blocks on the aging time by isothermal annealing. Four illustr., five biblio. refs.

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TITLE--EFFECT OF DICHROMATES ON THE PROPERTIES OF LATEX FILMS OF
COPOLYMERS HAVING CARBOXYL AND METHYLOL FUNCTIONAL GROUPS -U-
AUTHOR--DUBINOVSKIY, M.Z., KOSYREVA, M.D., SIROTKIN, V.I.

UNCLASSIFIED

PROCESSING DATE--11SEP70

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (1) 29-31

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METHACRYLIC ACID, COPOLYMERIZATION, CORROSION INHIBITOR, METAL
COATING, PROTECTIVE COATING, POTASSIUM CHROMATE, WATERPROOFING, PHYSICAL
CHEMISTRY PROPERTY, METHYL METHACRYLATE/101MOL3 LATEX FILM, 101MOL5
LATEX FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/0553

STEP NO--UR/0303/70/000/001/0029/0031

CIRC ACCESSION NO--AP0107158

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--115870

2/2 044

CIRC ACCESSION NO--A0107159

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHYSICOMECH. PROPERTIES OF MBM-5 (BU ACRYLATE (I) ME ACRYLATE (II) METHACRYLIC ACID COPOLYMER) AND MOL-3 (I,II,METHYLOLMETHACRYLAMIDE COPOLYMER) LATEX FILMS MODIFIED WITH (NH SUB4) SUB2 CR SUB2 O SUB7, K SUB2 CR SUB2 O SUB7, AND GUANIDINE DICHROMATE (III) WERE STUDIED AT 20DEGREES. THE FILMS WERE PREPD. ON GLASS PLATES AT 20DEGREES, SET ASIDE FOR 7 DAYS, AND THEN SUBJECTED TO HEAT TREATMENT AT 80-190DEGREES FOR 30 MIN. DICHROMATES, ESP. III, HAD A WATERPROOFING EFFECT ON MBM-5 FILMS AND MARKEDLY INCREASED THEIR ELASTIC MODULUS AT DEFORMATIONS OF 50 AND 200PERCENT. THE PRESENCE OF MAX. ON THE H SUB2 O ABSORPTION CURVES AND CONSIDERABLE WASHING OUT OF DICHROMATES FROM MOL-3 FILMS SUGGESTED THAT CHROMATES SCARCELY REACTED WITH CH SUB2 OH GROUPS OF THE HEAT TREATED POLYMER. III WAS THE MOST REACTIVE AGENT, PRESUMABLY DUE TO ITS GOOD COMPATIBILITY WITH THE POLYMER. III MODIFIED MBM-5 AND MOL 3-LATEX FILMS CAN BE USED AS METAL PRIMERS AND CORROSION INHIBITORS.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18 SEPT 70

UNCLASSIFIED

272 . 020

TITLE--INITIATED CRACKING OF NEOPENTANE -U-

AUTHOR--(03)-STEPUKHOVICH, A.O., KOSYREVA, R.V., MALTSEVA, L.YE.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL, 1970, 11(1), 16-25

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL CRACKING, PENTANE, ETHYLENE OXIDE, METHANE, HYDROGEN, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--1985/1430

STEP NO--UR/0195/70/011/001/0016/0025

CIRC ACCESSION NO--AP0101520

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--11SEP70
 TITLE--A DEVICE FOR CHECKING THE TUNING PRECISION OF A FREQUENCY DETECTOR
 -U-
 AUTHOR--YEFANOV, A.S. ~~KOSYY, D.R.~~ K
 COUNTRY OF INFO--USSR
 SOURCE--PATENT NO 263700
 REFERENCE--MOSCOW, OTKRYIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI NO
 DATE PUBLISHED-----70

SUBJECT AREAS--METHODS AND EQUIPMENT

TOPIC TAGS--PATENT, FREQUENCY ANALYZER, ERROR MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAF--1992/1096

STEP NO--UP/0492/70/000/000/0000/0000

CIRC ACCESSION NO--AA0112218

UNCLASSIFIED

PROCESSING DATE--11SEP70

UNCLASSIFIED

2/2 . 005

CIRC ACCESSION NO--AA0112218

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES A DEVICE FOR CHECKING THE TUNING PRECISION OF A FREQUENCY DETECTOR. THE UNIT CONTAINS A SAWTOOTH VOLTAGE GENERATOR, A CONTROLLABLE OSCILLATOR, A MEMORY DEVICE, A NULL INDICATOR AT THE OUTPUT OF THE FREQUENCY DETECTOR, AND A MIXER WITH A REFERENCE OSCILLATOR CONNECTED TO THE OUTPUT OF THE VFO. IN ORDER TO AUTOMATE THE CHECKING PROCESS, THE MEMORY DEVICE IS CONNECTED BETWEEN THE OUTPUT OF THE SAWTOOTH VOLTAGE GENERATOR AND THE INPUT OF THE CONTROLLABLE OSCILLATOR, AND THE OUTPUT OF THE NULL INDICATOR IS CONNECTED TO THE SAWTOOTH VOLTAGE GENERATOR.

UNCLASSIFIED

USSR

UDC 621.317.76:621.396.662

YEFANOV, A. S., KOSYY, O. R.

"A Device for Checking the Tuning Precision of a Frequency Detector"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8,
10 Feb 70, Patent No 263700, Filed 3 Mar 67

Translation: This Author's Certificate introduces a device for checking the tuning precision of a frequency detector. The unit contains a sawtooth voltage generator, a controllable oscillator, a memory device, a null indicator at the output of the frequency detector, and a mixer with a reference oscillator connected to the output of the VFO. In order to automate the checking process, the memory device is connected between the output of the sawtooth voltage generator and the input of the controllable oscillator, and the output of the null indicator is connected to the sawtooth voltage generator.

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Materials

USSR

UDC 621.039

KOT, A. A., Doctor of Technical Sciences, GRUZDEV, N. I., SHCHAPOV, G. A.,
TIPIKIN, S. A., and BOGUSLAVSKIY, V. B., Engineers

"Study of the Radiolytic Processes in the Loop Water of a Reactor"

Teploenergetika, No 1, January 1972, pp 31-34

Abstract: Investigations were conducted at the second unit of the BAES (Beloyarsk Atomic Electric Power Plant) with respect to a study of the radiolysis of water, the extent of the radiolytic decomposition of ammonia which is dosed into the feed water of the reactor, and the formation of nitrates and nitrites in the area of the reactor. Methods were studied for suppression of the radiolysis of the water and removal of the radiolytic oxygen. The experiments were conducted during a change of the reactor power from 130 to 360 megawatts (thermal) which corresponds to the electrical power of the unit of 40-130 megawatts. The vapor content in the evaporative channels of the reactor remained constant independently of the reactor power and was equal to 15.4-16.6 percent. 4 fig. 1 tab. 2 ref.

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USSR

UDC 681.325.65

KAMYNIN, Yu. N., and KOT, V. I.

"A Logical Automaton"

USSR Author's Certificate No 276516, Filed 12/05/69, Published 22/10/70.
(Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, 1971, Abstract No 5B171P).

Translation: There are well-known logic devices with a standardized system of connections between elements, such devices containing a diode matrix with transformer coupling and realizing the logic functions AND, OR, and NOT, and the time functions "delay" and "memory." The device suggested differs in that each of the outputs of the variable input unit, memory unit, and delay unit is connected directly and through a NOT element to tubes of the program carrier, the outputs of which are connected through an OR element to one of the inputs of the AND element. The output of the AND element is connected through the tubes of the program carrier to the inputs of the memory unit, delay unit, and output unit. This allows the functional capabilities to be expanded and the circuit of the device to be simplified.

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1/2 014 UNCLASSIFIED PROCESSING DATE--11 DEC 70 4

TITLE--BOILING DOWN OF PRODUCT 1 HASSECUITE FROM CONCENTRATED STRUPS -U-

AUTHOR--(05)-BELOSTOTSKIY, G.S., SAVCHUK, N.K., MELNIK, V.I., KOT, YU.D.,
 BELOSTOTSKIY, L.G.
 COUNTRY OF INEC--USSR

SOURCE--SAMP. FROM. 1970, 44(4), 48-51 K

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FOOD TECHNOLOGY, SUCROSE, GRANULE FORMATION, PARTICLE SIZE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--3007/0301 STEP NO--UR/C339/70/044/004/0048/0051

CIRC ACCESSION NO--AP0135796
 UNCLASSIFIED

272 014

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0135796

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BOILING DOWN OF MASSECUITE FROM CONCD. SIRUPS IS COMPARED WITH BOILING DOWN FROM AQ. MIXES. ON EVAPG. A SIRUP CNTG. SIMILAR TO 70PERCENT DRY SUBSTANCES IN VACUUM WITHOUT JUICE MIXES OR AQ. MIXES, THE PRODUCTIVITY OF THE VACUUM EVAPCRATOR INCREASES BY 10PERCENT, THE COLOR INDEX OF THE SUGAR IS 0.1 UNIT LESS, AND THE REMAINING CRITERIA CHARACTERIZING MASSECUITE QUALITY ARE NO WORSE THAN WITH MASSECUITE BOILED DOWN WITH THE AID OF AQ. OR JUICE MIXES. THE PARTICLE SIZE DISTRIBUTION OF THE SUGAR CRYSTALS IS ABOUT THE SAME WITH BOTH METHODS. THE METHOD IS RECOMMENDED FOR BOTH CONCD. AND CONVENTIONAL SIRUPS. FACILITY: SVEKLOSAKHAROTREST, VIINNITSY, USSR.

UNCLASSIFIED

Acc. Nr:

AP0050568

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code:

48 0339

K

102065d Effect of the crystal content in massecuite on the crystallization rate of sugar in relation to the size of the crystals. Popereka, I. K.; Kot, Yu. D. (USSR). *Sukh. Prom.* 1970, 44(1), 25-7 (Russ). The sugar soln. was seeded with 20-50% in steps of 5% with dry sugar crystals heated to 60° with grain sizes of 0.25, 0.5, 1.0, and 1.5 mm. The temp. was decreased 60-40° in 2 hr. The specific growth rate (mg/m²/min) was greatest with the greatest seeding and decreased with increasing amt. of seeding. The total mass of crystal. sugar was greatest with the finest grain seeding, and decreased sharply with amt. of seeding >30%.

Olaf Thomsen

REEL/FRAME
19810558

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USSR

UDC 539.194.01

KOTAYEV, D. I., ALEKSANDROV, A. P.

"Using Statistical Methods and Computers in Analyzing the Band Structure of Diatomic and Linear Multiatomic Molecular Spectra. I. Computation of Constants"

Leningrad, Optika i Spektroskopiya, Vol 33, No 5, Nov 72, pp 862-866

Abstract: A program is drawn up for computing molecular constants from the aggregate of wave numbers of branches of one or more bands in the electron and vibrational spectra of diatomic and linear multiatomic molecules. This program enables the use of statistical criteria for numbering lines, selecting the degree of the approximating polynomial, etc. In addition, a modification of the method of orthogonal Chebyshev polynomials is proposed for processing Raman sums and differences of the form $R(J-1) \pm P(J)$, and some of the peculiarities of this method are considered. The authors thank A. A. Mal'tsev, V. T. Aleksanyan, and M. R. Aliyev for constructive criticism.

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USSR

UDC: 519.3:62-50

KARASIN, I. A. and KOTCHENKO, P. P.

"Non-Oscillating and Quasi-Oscillating Optimal Second-Order Systems"

Izv. Leningr. elektrotekhn. in-ta (Leningrad Electrical Engineering Institute news) 1970, No. 90, pp 27-35 (from Matematika, No. 3, March 71, Abstract No. 3B371)

Translation: A second-order system with a piecewise continuous right-hand member which is optimal in rapidity of action is investigated. Author's resume

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Miscellaneous

USSR

UDC: 519.3:62-50

KARASIN, I. A. and KOTCHENKO, P. P.

"Synthesizing a ~~Quasi-Oscillating~~ Second-Order Optimal System"

Izv. Leningr. elektrotekh. in-ta (Leningrad Electrical Engineering Institute News) 1970, No. 20, pp 35-38 (from RZh-Matematika, No. 3, March 71, Abstract No. 3B372)

Translation: The authors consider an example of the synthesis of a quasi-oscillating system with an asynchronous slave motor for frequency control. Authors' resume

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USSR

UDC 612.822.3

KOTELENKO, L. M., and VASIL'YEV, A. G., Leningrad State University

"Electrical Responses of the Bat Auditory Cortex to Ultrasound Stimuli at Different Fll Frequencies"

Kiev, Neyrofiziologiya, No 5, 1971, pp 526-532

Abstract: The acoustic signals of vespertilionid (*Myotis oxygnathus*) and horseshoe (*Rhinolophus ferrum equinum*) bats differ significantly from one another. The former emit frequency modulated pulses while the latter emit monochromatic pulses. Study of the electrical reactions and action potentials of individual neurons in the auditory cortex of these two bat species showed the vespertilionids to be maximally sensitive to ultrasound at frequencies of 10 to 50 kHz, the horseshoe bats at frequencies of 10 to 40 and 82 to 84 kHz. The shape of the response regions of single neurons are similar in the two species with the exception of neurons in the horseshoe bats which have three such regions with characteristic frequencies at 27 to 28, 40 to 42, and 80 to 84 kHz. Many neurons in these bats unlike the vespertilionids, have narrow response regions with characteristic frequencies in the 70 to 90 kHz range. Low thresholds were recorded at 78 to 86 kHz after exclusion of the stimulus. Responses to such exclusion generally arose in the frequency band where on-responses were recorded.

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AAQ101187

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

2/70

242833 MICROORGANISM CULTIVATING APPARATUS
 comprises tank 1, diffusor 2, agitator 3,
 and additional porous diffusor 4. Electrodes 5 &
 6 are separated by screen 7, with electrode 5
 causing hydrogen formation by hydrolysis with
 evacuation by tube 8. The oxygen separated by
 electrode 6 is lifted in bubbles together with
 adhering microorganisms. The feed composition
 is chosen so that cation and anion balance as
 well the pH of the medium are not altered by the
 electrolytic dissociation.

24.10.67. as 1192399/28-13, KOTELEV, V.P.; SHANIN,
 L.A. Microbiology Sect. Acad. Sci. Moldavian SSR.
 (22.9.69) Bul. 16/3.5.69. Class 6a, Int. Cl. C 12b.

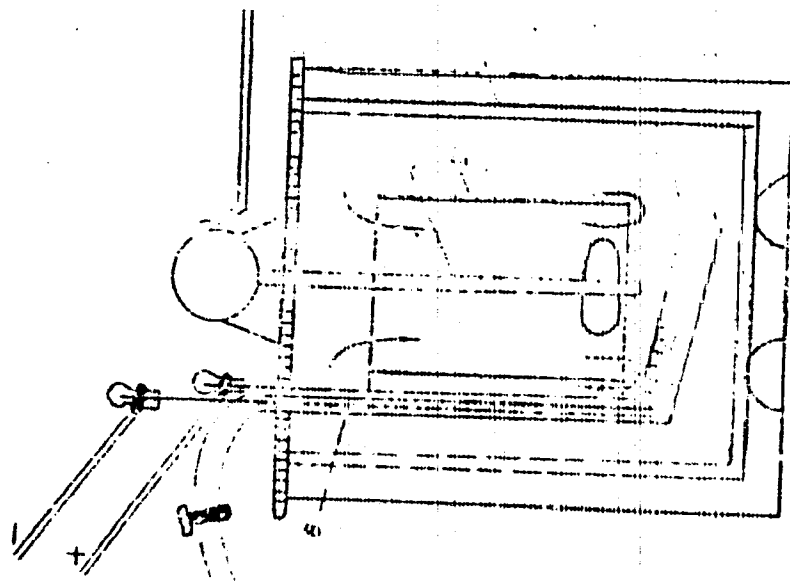
Otdel Mikrobiologii AN Moldavskoy SSR

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USSR

UDC 621.357.13

IVANOVSKIY, L. Ye., KOTELEVSKAYA, V. A., RASKIN, B. Yu.

"Production of Continuous Coatings of Vanadium by Electrolysis of Halide Melts"

Tr. In-ta Elektrokhemii. Ural'sk. Nauch. Tsentr AN SSSR [Works of Institute of Electrochemistry, Ural's Scientific Center, Acad. Sci. USSR], No 17, 1971, pp 124-126 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 L355 by A. V. Dribinskiy).

Translation: The precipitation of V during electrolysis of chloride and bromide-chloride melts is studied. It is shown that continuous cathode sediments several millimeters thick can be produced with $D_c = 10-20 \text{ ma/cm}^2$ at $400-450^\circ$. Increasing the temperature in D_c causes formation of a dendritic sediment.

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USSR

UDC: 621.791.06:621.9-419

KOTEL'NIKOV, A. A., USHAKOVA, S. Ye., and IL'CHENKO, V. I., Kursk Polytechnical Institute

"Structure and Properties of the Transition Zone in Diffusion Welding of Steel 15 With AMts Alloy and AD1 Aluminum Through a Nickel Interlayer"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 70, pp 27-29

Abstract: The welding of aluminum and its alloys with steels presents difficulties due to marked differences in the physicochemical properties of these materials. Interaction of aluminum with iron produces intermetallides $FeAl_3$, Fe_2Al_2 , Fe_3Al_5 , $FeAl_2$, $FeAl$ and others determining the brittleness of the weld. An attempt is described here to produce a quality weld of aluminum alloys with steel by diffusion welding in vacuum using a nickel interlayer. The latter was made by galvanic nickel plating of a steel strip with a copper backing so that the fusion zone became an iron-copper-nickel-aluminum system. Emphasis was placed on the problem as

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USSR

KOTEL'NIKOV, A. A., et al, Avtomaticheskaya Svarka, No 11, Nov 70, pp 27-29

to which intermetallide is determining the optimum mechanical properties of the weld. The diffusion zone was studied by microstructural, local x-ray spectral, and x-ray structural analyses; the microhardness was measured and the mechanical properties were tested. It has been shown that the determining factor in evaluating the strength of the weld is the presence of the Al_3Ni_2 phase; the maximum width of this phase is 1 micron.

USSR

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USHAKOVA, S. M., and KOTEL'NIKOV, A. M., Kiev Polytechnical Institute

"Diffusion Welding of Steel 15 with Al-30 Alloy and ADL Aluminum in a Vacuum Nickel Layer in a Vacuum"

Kiev, Avtomaticheskaya Svarka, No 10, Oct 70 pp 53-54

Abstract: This article on the welding of aluminum and steel in a vacuum, the need in the electronic and tool industries for joining parts of different metals. The authors developed optimal modes for welding steel in cylindrical form, 16 mm in diameter and 30 mm long, as well as aluminum specimens of steel free of grease and secured in a bath of mineral oil for 2-3 minutes at 30° C. The welding was done on a diffusion welding apparatus of specific structure. Specimens were heated by a transformer and power energized by a type M-67 high-frequency oscillator. Four specimens were welded for each operation mode studied, three for stretch-testing and one for micro-study. The effects of pressure were investigated at four different pressure values at a temperature of 550° C. Curves are given showing the stability limit of the welds as function of welding time, pressure, and welding temperature, for the various metals used. Photographs are shown of the specimens after stretching tests and of the microstructure of the welds.

USSR

UDC 621.357:621.79.027(088.3)

KOTEL'NIKOV, A. I., DAMASKIN, Yu. I., MEL'NIKOV, G. I.

"Method of Electrochemical Dimensional Working"

USSR Author's Certificate No 295642, Filed 8/05/69, Published 7/04/71,
(Translated from Referativnyy Zhurnal, Khimiya, No 2, 1972, Abstract No
2 L256 P by A. D. Davydov).

Translation: The method of electrochemical dimensional working suggested differs in that in order to eliminate the influence of the voltage drop over the length of the part (P) on processing accuracy, the process is conducted by a cathode tool corresponding in its dimensions to the P being worked and made of a material with the same specific resistance, and the current is fed to the P and cathode so that an increase in voltage drop along the length of the cathode corresponds to an even decrease in voltage drop along the length of the P. For example, when the poles of the power supply are connected to the opposite ends of the cathode tool and the P, forming a plane-parallel clearance, the voltage between the P and the cathode is identical over its entire length.

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1/2 010 UNCLASSIFIED PROCESSING DATE--020CT70
TITLE--COMPOSITION OF SYNTHETIC FATTY ALCOHOLS STUDIED BY GAS LIQUID
CHROMATOGRAPHY -U-
AUTHOR--(02)-KOTELNILOV, A.P., NICHKOVA, P.R.
COUNTRY OF INFO--USSR *K*
SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(2) 32-4
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--GAS CHROMATOGRAPHY, ALCOHOL, FATTY ACID

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1517 STEP NO--0R/0065/70/115/0027/0032/0034
CIRC ACCESSION NO--AP0112511
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112511

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. USING A MIXT. OF 10PERCENT SILICONE RUBBER E-30) WITH 4PERCENT POLYETHYLENE GLYCOL 20,000 ON CELITE 545 (100-120 MESH) AND A COLUMN TEMP. OF 160DEGREES, SYN. PEAKS WERE RECORDED FOR QUANT. SEPN. OF THE C SUB7-SUB17 PRIMARY ALCS. CHROMATOGRAMS RECORDED BY USING 10PERCENT POLYETHYLENE GLYCOL ADIPATE ON CELITE 545 (100-120 MESH) AT COLUMN TEMPS. OF 180DEGREES AND 140DEGREES, RESP., SHOWED THAT NARROW FRACTION SECONDARY FATTY ALCS. HAVE A MORE COMPLEX COMPN. THAN ALCS. FROM SECONDARY UNSAPONIFIABLES. FROM A CHROMATUGRAM RECORDED BY USING 10PERCENT APIEZON L ON CELITE 545 (80-100 MESH) AT 190DEGREES, THE CONTENT OF SECONDARY ALCS. WAS CALCD. AS 73PERCENT WHILE POLYETHYLENE GLYCOL ADIPATE WAS SUED TO DET. THE PRIMARY ALC. CONTENT OF THE SECONDARY UNSAPONIFIABLES AS 74PERCENT (COMPARED TO 70-5PERCENT AS OBTAINED BY SPECTROSCOPIC ANAL.).

UNCLASSIFIED

Technology

USSR

UDC: 621.783

KOTEL'NIKOV, D. I., Candidate of Technical Sciences

"The ICN-1 Ionic Heating Installation"

Kiev, Tekhnologiya i Organizatsiya Proizvodstva, No 4, Jul/Aug 72, pp 109-110

Abstract: The paper describes an ionic heater developed in the Chernigovsk Affiliate of Kiev Polytechnical Institute. The device is based on the intense ion bombardment of a cathode due to energy transformations in the cathode region when gases are electrically heated. The vaporizability of the heated material, the chemical and thermal interactions between the material and the working gas, heating intensity (specific power), heating area and shape, and the temperature and rate of heating can be controlled by varying the gas pressure in the working chamber, the type of gas used, the voltage between electrodes, and the shape of the electrodes. The device can be used for cleaning metal surfaces, zone melting, soldering, diffusion welding and chemical heat treatment. The installation is made up of standard components and has a power of 10 kVA, a chamber volume of 30 liters, an area of 3.2 m², and a maximum temperature of 2600°C. Ionic heating finds practical application in the radio equipment and electronics industries for welding of parts. ICN-1 is an improved design which has been introduced at a number of enterprises.

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USSR

UDC 621.585.002.72:621.791.12

KOTELNIKOV, D. I.

"On The Use Of Ion Heating In The Production Of Electron Devices"

V sb. Progressivn. tekhnol. i novoye oborud. dlya proiz-va elektron. priborov
(Progressing Technology And New Equipment For Production Of Electron Devices --
Collection Of Works), Saratov, 1970, pp 57-58 (from RZh--Elektronika i yeye primeneniye
No 12, December 1970, Abstract 12A119)

Translation: By investigations and test production checks, the possibility was established of obtaining high-quality welded junctions of unlike materials (both on metals and nonmetals) with the help of heating by ion bombardment. Glow-discharge in various gases serves as a source of ions. In the technology of electrovacuum production, heating by ion bombardment is used for diffusion welding, cleaning the surface of materials, thermochemical processing of materials, and others. 1 tab. G.B.

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KOTEL'NIKOV, G. A.

TECHNICAL TRANSLATION

ZSTC-BT-23-403-72

ENGLISH TITLE: The Invariance of the Speed of Light in the Special Theory of Relativity

FOREIGN TITLE: Ob Invariantnosti Sversta Sveta v Sposial'noy Teori Otnositel'nosti

AUTHOR: G. A. Kotelnikov

SOURCE: Vestnik Moskovskogo Universiteta. No 4, 1970, pp 371-374

Translated for ZSTC by Leo Hamner Associates

SECRET

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142 026 UNCLASSIFIED PROCESSING DATE--23JUL70
TITLE--ACTIVITY AND PHASE COMPOSITION OF A CHROMIUM CALCIUM NICKEL
PHOSPHATE CATALYST -U-
AUTHOR--(05)-IVASHINA, V.S., BUYANDV, R.A., OSTANKOVICH, A.A., OLENKOVA,
I.P., KOTELNIKOV, G.R.
COUNTRY OF INFO--USSR
SOURCE--KINET. KATAL. 1970, 11(1), 160-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CATALYST ACTIVITY, CATALYTIC DEHYDROGENATION, BUTENE,
BUTADIENE, NICKEL, X RAY DIFFRACTION STUDY, THERMAL ANALYSIS, CHROMIUM,
PHOSPHATE, CALCIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0528 STEP NO--UR/0195/70/011/001/0160/0165
CIRC ACCESSION NO--AP0119447
UNCLASSIFIED

272 026

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119447

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE CATALYST WAS STUDIED BY USING X RAY DIFFRACTION, D.T.A., AND DIFFERENTIAL THERMOGRAPHY. THE CATALYST REPRESENTS A 1 PHASE SYSTEM OF NI PRIME2 POSITIVE AND CR PRIME2 POSITIVE SOLID SOLNS. IN A LATTICE OF CA PHOSPHATE. THIS SOLN. FORMS ON HEATING DURING CATALYST PREPN. THE CATALYTIC ACTIVITY OF THE CATALYST IN THE DEHYDROGENATION OF BUTENES TO BUTADIENE DEPENDS ON THE NI CATION CONCN. IN THE LATTICE OF THE CATALYST. CA PHOSPHATE SERVES AS THE CATALY CARRIER AND THE CA-CR COMPN. IS CATALYTICALLY INACTIVE.

UNCLASSIFIED

1/2 005 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--IMPROVEMENT OF THE R336 AUTOMATIC DIGITAL BRIDGE -U-
AUTHOR--KOTELNIKOV, N.I. K
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, IZMERITEL'NAYA TEKHNIKA, NO 2, 1970, P 74
DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--RESISTANCE BRIDGE, ELECTRIC EQUIPMENT MAINTENANCE/(U)R336
RESISTANCE BRIDGE, (U)R380 OHMMETER

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/1759 STEP NO--UR/0115/70/000/002/0074/0074
CIRC ACCESSION NO--AP0114258

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PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114258

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS PROPOSED FOR IMPROVING THE R336 AUTOMATIC DIGITAL BRIDGE, A UNIT WHICH IS EXTENSIVELY EMPLOYED IN CALIBRATION AND REPAIR PRACTICE. ACCORDING TO AN EDITOR'S NOTE, THIS METHOD CAN REDUCE THE LONGEVITY OF THE R336 BRIDGE, THE PRODUCTION OF WHICH HAS IN ANY CASE BEEN DISCONTINUED AND WHICH IS BEING REPLACED BY THE R380 DIGITAL CHMMETERS IN WHICH THE ESSENCE OF THE PROPOSED IMPROVEMENTS IS EMBODIED.

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USSR

UDC 621.793.3:669.248

KOTEL'NIKOV, N. V., DMITRIYEVSKIY, A. S.

"Standardization of Baths for Obtaining Metal Films using Hypophosphite"

Tr. Tambov. in-ta khim. mashinostp. (Works of Tambov Institute of Chemical Machine Building), 1971, vyp. 7, pp 110-113 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L305)

Translation: A study was made of the problems of standardizing the parameters of hypophosphite solutions for chemical nickel plating. It is proposed that the initial growth rate of the thickness of the coating and the density of the complete active mass be used as the standard characteristics.

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USSR

UDC:621.039.542.53

KAKUSHADZE, L. YE. and KOTEL'NIKOV, R. B.

"Study of the Bending Strength of Dispersion Materials of Uranium Dioxide and Molybdenum in the 293-1870 K Temperature Interval"

Moscow, Atomnaya Energiya, Vol 36, No 1, Jan 74, pp 19-23

Abstract: The efficiency of the cores of dispersion fuel elements depends to a great extent on their mechanical strength. The strength of ceramic materials is usually defined by bending or compressive strength testing. Ceramets of molybdenum-coated uranium dioxide particles 200-315 μ in diameter and a mixture of such particles with molybdenum powder (5-20 vol.% molybdenum) were tested. The specimens for testing were cut by a diamond disc from hot-pressed cylindrical blanks. The specimens were rectangles measuring 3x3x15 mm. The density of the specimens was $96 \pm 1.2\%$ of their theoretical density. The specimens were loaded by a three-point plan at 2.5 kg/mm²-min. The distance between supports was 10.3 mm. The specimens were heated by radiation with a strip heater carrying alternating current. The temperature of the specimens was measured by an optical pyrometer. High-purity helium surrounded the specimens during the tests. Inspection of the ruptured specimens showed no significant bending even after testing at 1870 K. Regardless of the type of ceramet, composition and temperature of the test, the break occurred through the uranium dioxide particles with no

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KAKUSHADZE, L. YE. and KOTEL'NIKOV, R. B., Moscow, Atomnaya Energiya,
Vol 36, No 1, Jan 74, pp 19-23

preferential rupture through the molybdenum layers or extraction of
uranium dioxide particles from the molybdenum matrix.

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USSR

UDC 532.529.5/.6

BORSHCHEVSKIY, YU. T., KOTEĬNIKOV, V. F., LEBEDEV, O. N.

"Study of the Effect of the Ratio of the Length of a Nozzle Channel to Its Diameter on the Fineness of Atomizing"

V sb. Sudovyye silovyye ustanovki i mekhanizmy Vyn. 66 (Marine Power Plants and Machinery. Vyp. 46 --Collection of Works), Novosibirsk, 1970, pp 59-66 (from RZh-Mekhanika, No 10, Oct 70, Abstract No 10 B520)

Translation: This article contains a brief survey of papers devoted to the study of the effect of the ratio of the length of the nozzle channel of a jet atomizer to its diameter on the drop dimensions of the atomized liquid. The procedure and results of experiments in which the fineness of atomizing was measured on varying the ratio of the nozzle length to its diameter $l/d = 2.0-9.12$ are discussed. The drop dimensions were measured by catching them on a smoked plate and measuring the drop impressions under a microscope. Diesel fuel with a density from 0.823 to 0.857 g/cm³ and a kinematic viscosity from 3.85 to 4.98 centistokes was used in the experiments. The experimental results are processed with the help of dimensionless variables. It is demonstrated that in the range of $1/2$

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BORSHEVSKIY, YU. T, et al., Sudovyye silovyye ustanovki i mekhanizmy
Vyp. 46, 1970, pp 59-66.

variation of the ratio $Z/d = 4.4-9$ the magnitude of this ratio has little effect on the fineness of atomizing. With a decrease in the ratio $Z/d < 4.5$ the middle diameter of the drop decreases. The bibliography has 14 entries.

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USSR

UDC: 621.316.722.1

TAMAROVSKIY, A. P., KOTEL'NIKOV, V. I., Krasnodar "Order of the Red Banner of Labor"
Electrical Measuring Instrument Plant

"A Reference Voltage Source"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obrabotsy, Tovarnyye Znaki, No 26,
1970, Soviet Patent 278782, filed 21 Feb 69, p 45

Abstract: This Author's Certificate introduces: 1. A reference voltage source which contains preliminary and parametric voltage stabilizers and an operational amplifier. As a distinguishing feature of the patent, the output impedance is reduced and the circuit of the reference voltage source is simplified by adding a feedback resistor with one end connected simultaneously to the parametric stabilizer and the load, while the other end is connected to the common bus of the reference voltage source. 2. A modification of this voltage source distinguished by the fact that one end of the feedback resistor is connected simultaneously to the noninverting differential input of the operational amplifier, the load and the parametric stabilizer, while the other end is connected to the common bus of the reference voltage source.

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USSR

UDC 531.781.2

BARANOV, I. A., KOEEL'NIKOV, V. YE., GORSHKOV, V. A., and KAP'PUR, G. YE.,
Moscow Aviation Technological Institute

"A Method for Determination of Ball-Bearing Clearance"

USSR Author's Certificate No 366367, Filed 6 Jul 70, Published 16 Jan 73
(from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7,
Mar(a) 73, claim No 1460181/25-28)

Translation: A method for the determination of ballbearing clearance in the setting in the shaft and in the housing, including a determination of axial rigidity of the bearing by the frequency of resonant vibration, distinguished by the fact that in order to increase the accuracy, ball-bearing axial rigidity after the setting of an internal ring and after the setting of an external ring, the value to the clearance is determined by the difference in the values of the rigidity.

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USSR

KOTEL'NIKOVA, G. P.

"Various Complexities of Contact Circuits Realizing a Direct Function and Its Negation"

Teor. i prikl. issled. obshchenauch. kafedr. [Theoretical and Applied Studies in General Scientific Departments -- Collection of Works]. Sverdlovsk, 1973, pp 63-64 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V406)

Translation: The author reports without proof that an example of a function of 6 variables has been constructed for which $L(f) - L(\bar{f}) = 3$. Here $L(f)$ is the complexity of the contact circuit realizing function f . Furthermore, a method has been discovered, according to which one can construct function f or $n > 6$ variables, for which the difference $L(f) - L(\bar{f})$ increases with increasing n , while the ratio $L(f)/L(\bar{f})$ remains constant.

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USSR

UDC: 621.319.4

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NEYMAN, M. I., SOKOLOVA, M. A., SVERDLOVA, A. N., ~~NIKOLADOVA, N. V.~~, RYNDINA, L. P., STARENCHENKO, V. G., KOTEL'NIKOVA, E. P.

"Thin-Film Ceramic Capacitors With High Specific Capacitance"

Elektron. tekhnika. Nauch.-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 4(21), pp 3-9 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V322)

Translation: The authors discuss a new method of making thin-film ceramic capacitors with high specific capacitance. Their basic electrical characteristics are given.

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UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--EFFECT OF CONDENSATION CONDITIONS ON THE DIELECTRIC PROPERTIES AND
STRUCTURE OF SiO THIN FILMS -U-

AUTHOR--(03)-PALATNIK, L.S., TARTAKOVSKAYA, I.KH., KOTELNIKOVA, S.O.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 219-23

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--SILICON OXIDE, SILICON FILM, VAPOR CONDENSATION, THIN FILM
CAPACITOR, ELECTRIC CAPACITANCE, DIELECTRIC LOSS, DIELECTRIC CONSTANT,
REACTION KINETICS, ELECTRON DIFFRACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/2007

STEP NO--UR/0363/70/006/002/0219/0223

CIRC ACCESSION NO--AP0105080

UNCLASSIFIED

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CIRC ACCESSION NO--A0105080

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF THE CONDENSATION RATE AND THE THICKNESS OF THE DIELEC. LAYER ON CAPACITANCE, DIELEC. CONST., DIELEC. LOSSES, AND BREAKDOWN VOLTAGE OF SiO BASED THIN FILM CAPACITORS WAS STUDIED. AT LOW CONDENSATION RATES, PARTIAL OXIDN. OF SiO TAKES PLACE. INCREASING THE CONDENSATION RATE INCREASES THE HETEROGENEITY OF THE THIN FILMS RELATIVE TO THEIR COMPN. BY USING MICRODIFFRACTION ANAL., THE PRESENCE OF 2 HIGHLY DISPERSED PHASES, CRYST. OR AMORPHOUS Si AND AMORPHOUS SiO₂, WAS OBSD. IN SiO THIN FILMS. THE THIN FILM CAPACITORS WERE PREPD. BY THE ALTERNATING OPERATIONS TECHNIQUE; I.E., EACH LAYER WAS APPLIED IN A SEP. VACUUM APP. THE CONSTRUCTION OF THE VAPORIZER WAS ANALOGOUS. ALSO PERFORMED WERE STRUCTURAL INVESTIGATIONS OF THE THIN FILMS AS DEPENDENT ON THE CONDENSATION RATE. A MARKED DECREASE IN THE DIAM. OF THE HALO AND A CORRESPONDING INCREASE IN THE INTERPLANAR SPACING WERE OBSD. FOR FILMS WITH LOW CONDENSATION RATES. THIS INCREASE IN THE INTERPLANAR SPACING FOR THIN FILMS PREPD. AT LOW CONDENSATION RATES IS PROBABLY ASSOCD. WITH THEIR MORE INTENSIVE OXIDN. AS COMPARED TO THE THIN FILMS OBTAINED AT HIGHER CONDENSATION RATES. A CORRESPONDENCE WAS OBSD. BETWEEN THE RESULTS OF THE ELECTRON DIFFRACTION AND THE MICROPHOTOMETRIC INVESTIGATIONS OF THE THIN FILMS AS A FUNCTION OF THE CONDENSATION RATE. INCREASING THE CONDENSATION RATE ALSO RESULTS IN THE FILM BECOMING VERY NONUNIFORM. A LARGE NO. OF PARTICLES, BANDS, AND ARBORESCENT FORMATIONS APPEARED. THE LATTER ARE PROBABLY SOME SORT OF A CONDENSATION STAGE OF AMORPHOUS SiO, WITH ITS DECOMPN. GOING ON AT THE SAME TIME.

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CIRC ACCESSION NO--AP0105080
ABSTRACT/EXTRACT--FACILITY:
KHARKOV, USSR.

UNCLASSIFIED

PROCESSING DATE--23OCT70

KHAR'KOV. POLITEKH. INST. IM. LENINA,

UNCLASSIFIED

USSR

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UDC: 546.28'21:539.233

PALATNIK, L. S., TARTAKOVSKAYA, I. KH., and KOTEL'NIKOVA, S. O., Khar'kov Polytechnic Institute imeni V. I. Lenin

"Dielectric Properties of Thin Silicon Oxide Films as a Function of Condensation Conditions"

Moscow, Neorganicheskiye Materialy, Vol 6, No 2, Feb 70, pp 219-223

Abstract: The low reproducibility of the dielectric properties of condensed SiO films is a factor which has prompted the study of the effects of preparation conditions on structure and dielectric properties. The study covers the effects of condensation rate and dielectric layer thickness on the capacitance, dielectric constant, dielectric losses and breakdown voltage of SiO-base film capacitors as well as the correlation of these properties with the structural characteristics of SiO films. Changes in capacitance with natural and artificial aging were also studied. Low oxidation rates cause SiO partial oxidation. As condensation rates are increased, the films become inhomogeneous in structure. Microdiffraction analysis confirmed the presence, in SiO films, of two highly-disperse phases--crystalline or amorphous silicon and amorphous SiO₂. Tables in

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USSR

PALATNIK, L. S., et al., Neorganicheskiye Materialy, Vol 6, No 2, Feb 70,
pp 219-223

the original article show the specific capacitance of film capacitors as a function of the SiO layer thickness, the dielectric constant as a function of SiO condensation rate, and the optical density of SiO films as a function of thickness at specific condensation rates.

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USSR

UDC 613.65:612.766.1]0.84:613.71

KOTEL'NIKOVA, Ye. G., and Peterson, Ye. N., Leningrad, Institute of Physical Education imeni P. F. Lesgaft Higher Combined Arms Command School imeni S. M. Kirov

"Biomechanics of Labor Motions and Prophylactic Exercises"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 12, 1971, pp 7-10

Abstract: Development of styloiditis of the radius in female assemblers of small electronic devices (vacuum tubes) was studied. Biomechanical analysis of motions of assemblers (up to 5,000 motions per shift) indicated that this disease can be prevented by performing specific physical exercises which would strengthen specific muscles and make them capable of withstanding the physical load for 8 hours of work. Among such exercises the author suggests fencing and tennis, which strengthen ligaments and muscles of the radiocarpal joints and prevent deformation of the radius. It is recommended that such exercises be adapted in all professional schools training young workers for this type of work.

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ROTELYANSKIY, I.M.

SPRS 59208
6-73

11-8. DYNAMICS OF THE PROCESS OF CRYSTALLIZING FILMS OF A 1:1^{VI} COMPOUND BY THE GAS TRANSFER METHOD

Article by *I. M. Rotelyanskiy, Institute of Radioengineering and Electronics of the USSR Academy of Sciences, Moscow; Novosibirsk III Division of the Siberian Federal Scientific Center, Novosibirsk, USSR.*

It was demonstrated that on deposition of epitaxial layers of semiconducting alloy compounds in a hydrogen current, the magnitude of the variation of the Fermi-level potential $\Delta\phi$ can not serve as a measure of supercrystallization above the surface of the substrate.

A procedure is proposed for calculating the supercrystallization and the composition of the gas phase for any relations of the gaseous components.

KOTELYANSKIY, I.M.

5 PRS 59208
6-73

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14-2. ELECTRICAL SURFACE MICRORELIEF CAUSED BY THREE-DIMENSIONAL DEFECTS

Article by V. V. Teresov, I. M. Kotelyanskiy, A. Ya. Mironov, V. S. Ginzburg and M. A. Tolstaya, Institute of Semiconductor and Electrolyte of the USSR Academy of Sciences, Moscow; Russian, 111 31931100 no. Proceedings Paper, 1 (1972), Polytekhnikoynzh. Zhurnalov i Pismov, Moscow, 1972, 1972, p. 47.

It has been demonstrated theoretically that the surface microrelief caused by the local electrical inhomogeneities, the form and magnitude of which are determined both by the configuration of the defect and the electrophysical parameters of the material. The appearance of disturbances of the periodicity of the electric field near the surface defect was observed by the following: 1) disturbance of the periodicity of the free crystal lattice; 2) electric dipole formations; 3) redistribution of the free charge carriers. A study was made of the spectra of ion crystals, metals and semiconductors. The experimental studies were made which confirmed the presence of uniaxial electric fields created by three-dimensional surface defects. The effect of the induced field defects on the initial stages of the epitaxial growth of the film and the formation of the insulating layer in the case of heteroepitaxial and antiepitaxial growth are discussed.

KOTEL'YANSKIY, I.M.

SPRS 57205
672

XV-7. STUDY OF MONOCRYSTALLINE LAYERS OF A2S6 SEMICONDUCTING COMPOUNDS BY THE X-RAY METHODS

Article by I. M. Kotelyanskiy, V. N. Stegaly, G. P. Zuzmanov, Institute of Radiophysics and Electronics of the USSR Academy of Sciences, Moscow; Novosibirsk, III Siberian Po Professor Kovaleva, Institute of Physics, Novosibirsk; Krasnolov (Pisun, Kamchatka, 12-17 June 1972, p 124)

The methods of x-ray diffraction measurement and low diffraction pattern were used to study the orientation epitaxial films of the heteroepitaxial layers of semiconducting compounds CdS, CdSe and ZnO on substrates of single crystals of cubic symmetry. The laws of the crystallographic texture are found and they are discussed.

The results are presented from studying the defective structure of epitaxial layers by the following method without separation of them from the substrates.

Acc. Nr:
AP0048388

Abstracting Service:
CHEMICAL ABST. 5170

Ref. Code:
UR 0181

K

94412x Epitaxial piezoelectric transducers. Morozov, A. I.;
 Gingsis, A. D.; Kotlyanski, I. M.; Aikhodzim, S. A.; Pankelcev,
 V. V. (Inst. Radioelektron. Moscow, USSR). Pis.
 Tverd. Tela 1970, 12(1), 109-113 (Russ). Epitaxial piezotrans-
 ducers were prepd., based on CdS films grown by gas transport.
 Frequency characteristics were investigated of these transducers
 of longitudinal and transverse ultrasound waves at 10-800 MHz.
 The dynamic range of such piezoelec. transducers is > 80 decibels.
 The relative transmission band is 100-120%, with conversion
 losses of 20-5 decibels. Good temp. stability was noted for these
 transducers. Data are given on damping of longitudinal ultra-
 sound waves in Ge at 80, 300, and 430°K. Prospects for appli-
 cation of piezoelec. transducers are discussed. A. Libackij /

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Biophysics

USSR

UDC 575.125-577.372.13.099

SHAKHBAZOV, V. G., KOTENKO, L. V., KOPEYKA, Ye. F., and KREBOKOV, A. L., Khar'kov State University

"Changes in the Bioelectric Rest Potentials of Cells of Different Genotypes Under the Influence of High Temperatures"

Kiev, Tsitologiya i Genetika, Vol 4, No 4, Jul/Aug 70, pp 352-355

Abstract: It was previously established by the authors that there is a relationship between genetic differences in hybrid and inbred organisms and the bioelectric properties of their cells. It was also found that heterosis hybrid forms exhibited an increased resistance to the effects of high temperatures. In the present study, the effects of temperatures in the 40-50°C range on the cellular and surface bioelectric rest potentials (BERP) of hybrid and inbred corn seedlings were studied. After exposure of the seedlings to such temperatures for 10-20 min, the negative values of cellular and surface BERP decreased on the average from -80 to -20 mV and from -50 to +10 mV, respectively. The BERP values changed less for hybrids than for inbred plants, a fact which confirms the greater resistance of hybrids to high temperatures.

1/1

USSR

UDC 615.276.012.1

KOTENKO, S. I., Kiev Scientific-Research Institute of Pharmacology
and Toxicology, Ukrainian Ministry of Public Health

"Synthesis of Physiologically Active Water-Soluble Polymers"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 2, Feb 71, Vol 5,
pp 27-30

Abstract: The synthesis and physical properties of certain poly-
meric physiologically active compounds of predominantly anti-
pyretic action were studied. These were obtained by copolymeri-
zation of monomers with the carboxyphenylamide of methacrylic
acid; the monomers were prepared from methacrylyl chloride and an
amine.

Some biological tests were run with mice and rats, using intra-
muscular injections. The sodium salt of the copolymer of 2,3-
dimethylphenylamide and of the o-carboxyphenylamide of methacrylic
acid gave a 58 percent reduction of inflammation four hours after
injection, and a 52 percent reduction 24 hours after injection;
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USSR

KOTENKO, S. I., Khimiko-Farmatsevticheskiy Zhurnal, No 2, Feb 71,
Vol 5, pp 27-30

the sodium salt of the copolymer of N-methacryl-4-aminoantipyrine and of the o-carboxyphenylamide of methacrylic acid, a reduction of 31 percent after 4 hours. These figures compare favorably with those for widely used antipyretics, which vary from 20 to 40 percent.

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USSR

UDC 615.21+615.384

KOTENKO, S. I., and LISUNKIN, Yu. I., Kiev Scientific Research Institute of Pharmacology and Toxicology

"New Biologically Active Copolymers of N-Vinylpyrrolidone"

Kiev, Farmatsevtichny Zhurnal, Vol 26, No 3, May-Jun 71, pp 82-84

Abstract: The methods of derivation and the pharmacological and biological properties of the copolymer of N-vinylpyrrolidone with diethylaminoethyl methacrylate (VP-DEAEMAK) (I), its quaternary salts VP-DEAEMAK hydrochloride (II), VP-DEAEMAK methiodide (III), VP-DEAEMAK ethiodide (IV), VP-DEAEMAK propiodide (V), and copolymer of vinylpyrrolidone with methacrylic acid (VI) were studied.

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USSR

KOTENKO, S. I., and LISUNKIN, Yu. I., Farmatsevtichny Zhurnal, Vol 26, No 3, May-Jun 71, pp 82-84

in a dose of 1-2 milligrams per kilogram body weight (ml/kg) reduced arterial pressure and diminished respiratory amplitude; administered in a dose of 20 mg/kg the preparations reduced pressure by 24 ± 5 percent, with the depressor effect failing to respond to the injection of atropine. Preparations III, IV, and V administered to the animals also produced a hypotensive effect, and in addition induced a curare-like effect on the neuromuscular synapses. The investigations thus established that the studied copolymers and their quaternary salts are hypotensive in their action and to some degree affect neuromuscular transmission.

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Oscillators & Modulators

USSR

UDO 621.385.633:621.376.5

BALYUK, V.S., BONDARENKO, A.A., KOTENKO, YE.G., LESHCHENKO, A.P.

"Thyristorized Modulator Of Control Electrode Of Type M Backward-Wave Tube"

Elektron.tekhnika. Nauch.-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1972, Issue 4, pp 100-101 (from RZh:Elektronika i yeye primeneniya, No 9, Sept 1972, Abstract No 9A131)

Translation: The paper describes a simple thyristorized modulator of the control electrode of a Type M backward-wave tube, fulfilled on the basis of semiconductor devices. The distinctive feature of the modulator is the use of a thyristorized relaxator for production of a series of pulses. The output parameters of the modulator are: amplitude of voltage pulse, 1.5--20 kV; duration of series, 1--40 microsec. with the frequency of the pulse sequence, 100--2.5 GHz. Summary.

1/1

USSR

UDC 621.385.623:621.316.722.1

KOLENKO, YE. G.

"Low-Noise Power Supply for Medium Power Klystron"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 12, pp 141-143 (from RZh-Elektronika i yeye primeneniye, No 3, Mar 71, Abstract No 3A157)

Translation: A low-noise rectifier is developed with a noise level not more than 5 microvolts in the frequency spectrum above 2 kHz with a voltage of 4000 volts, an effective power of 300 watts, and the range of voltage control plus or minus 200 volts. 2 ref. Summary.

1/1

USSR

UDC 621.771.25

KOTESHOV, N. P., Candidate of Technical Sciences, BILMARCHIK, R. L., Engineer, and SHUTKO, V. V., Engineer, Dnepropetrovsk Metallurgical Institute and the Dnepropetrovsk Cast Iron Roller Plant

"Effect of Casting Conditions on the Service Characteristics of Small Rollers Made of Magnesium Cast Iron Alloy"

Moscow, Stal', No 1, Jan 71, p 49

Abstract: For modern, highly productive mills, rollers with a hardness of at least 370 HB and with durability are required. This paper describes the methods used by the Dnepropetrovsk Cast Iron Roller Plant for manufacturing rollers with these requirements. The magnesium cast iron alloy also includes Ni (0.8-1.4%) and Cr (0.4-0.8%). In selecting the furnace charge, it was established that a reduction from 45-55% to 24-30% of the quantity of coke iron would improve the durability of the metal. It was also found that a reduction in the carbon content from 3.8% to 2.8-3.2% noticeably reduced the transcrystalline structure, thus improving the iron in the working layer of the roller when cooled at the rate of 2.8 degrees per second. The effect of chromium was also tested in the carbon content range of 2.8 to 3.8%, and

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USSR

KOTESHOV, N. P., et al., Stal', No 1, Jan 71, p 49

was found to depend on the quantity of carbides in the surface layer of the rollers and on their distribution over the roller cross section.

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USSR

KIKVIDZE, R. R., KOTETESHVILI, G. G., RUKHADZE, A. A., Physics Institute
imeni P. N. Lebedev, Academy of Sciences of the USSR, Moscow

"Interaction Between an Electron Beam and the Plasma of a Solid"

Leningrad, Fizika Tverdogo Tela, Vol 15, No 2, Feb 73, pp 622-623

Abstract: In a previous paper (Fizika Tverdogo Tela, Vol 14, 1972, p 2231) the authors showed that the longitudinal waves excited by a nonrelativistic electron beam in the plasma of a solid are the normal modes with accuracy to terms of the order of $v_0/c \ll 1$. Axially symmetric modes with $l=0$ were treated there for the sake of simplicity. In this paper the authors study excitation of arbitrary electromagnetic waves with $l \neq 0$ in the absence of an external magnetic field. Using Maxwell's equations and the expression for the operator of the tensor of permittivity, they derive differential equations for the fields E and B. It is shown that the mode with largest l has maximum efficiency of conversion, which is determined from the condition of smallness of transverse diffusion. The efficiency of conversion for axially asymmetric modes increases with a reduction in $\omega_0 \approx v_0$.

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USSR

KIKVIDZE, R. R.; ~~KOFERESHVILI, V. G.~~; RUKHADZE, A. A. (Lebedev Physics Institute of the USSR Academy of Sciences, Moscow)

"Perturbation of Longitudinal Electromagnetic Waves by an Electron Beam in the Plasma of a Solid"

Leningrad, Fizika Tverdogo Tela, January, 1972, pp 183-6

Abstract: The authors studied the possibility of the generation and amplification of longitudinal electromagnetic waves by means of an electron beam passing through a cylindrical aperture in a solid specimen, with and without an external longitudinal magnetic field. The effect of the dissipative mechanism of scattering of current carriers in the solid on the development of instability was determined. It was shown that perturbation of oscillations is possible not only under conditions in which the increment of increase is larger than the effective frequency of collisions of free carriers but also in the opposite case. In the latter case there is already a spectrum of perturbed oscillations. The threshold points of the electron beam above which the development of an instability takes place were determined. An evaluation of the amplitude of the nonlinear oscillations occurring was made.

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USSR

KIKVIDZE, R. R.; KOTETISHVILI, V. G.; RUKHADZE, A. A. (Labadov Physics Institute of the USSR Academy of Sciences, Moscow)

"Radiation Yield of a Solid-State Plasma during the Development of Beam Instability"

Leningrad, Fizika Tverdogo Tela; August, 1972; pp 2291-5

ABSTRACT: The possibility of the generation and amplification of electromagnetic waves by means of an electron beam passing through a cylindrical slit in a solid is studied. It is shown that potential oscillations in such a system, studied earlier, are natural, with an accuracy up to the terms $v_0/c \ll 1$. One of the modes of quasi-longitudinal oscillations has a maximum increment. The Umov-Poynting vector, connected with this mode, and the efficiency factor of the transformation of energy of the beam into energy of transverse electromagnetic radiation are found. At the same time, nonlinear theory is used to determine the amplitude of the steady-state oscillation. A definite advantage of the perturbation of surface over spatial oscillations is indicated. The article includes 19 equations. There are four references.

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USSR

VITUL'SKAYA, N. V., VOL'f, L. A., GILLER, S. A., YEGOROV, B. A., KOTETSKIY, V. V., PLOTKIN, L. L., and YANOVSKAYA, N. B., Leningrad Institute of Textile and Light Industry imeni S. M. Kirov; Institute of Organic Synthesis, Academy of Sciences Latvian SSR

"New Fibers for Medical Use"

Riga, Fiziologicheski i Opticheski Aktivnyye Polimernyye Veshchestva, "Zinatne," 1971, pp 145-149

Abstract: In order to increase the X-ray contrast effect of surgical suture materials, films and fibers were prepared from aqueous solutions of polyvinyl alcohol (PVA) with addition of barium sulfate in various concentrations (0.5-20%). The best contrast was obtained with 150 μ PVA film containing 10 and 20 BaSO₄. A lower dose (1%) of BaSO₄ did not produce desired results. Sutures were prepared from PVA with admixture of polyformaldehyde, BaSO₄, barium chloride, and collargol. The prepared fibers were thermostabilized at 220°C for 10 min and acetylated in water bath containing 20% β -(5-nitro-furyl-2)-acrolein and 20% H₂SO₄ at 70°C for 2 hrs. The ready to use fibers were mechanically strong, stable in hot water (boiling for 1 hr produced only 10% shrinkage), and possessed high antimicrobial properties, especially toward

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USSR

VITUL'SKAYA, N. V., et al., Fiziologicheski i Opticheski Aktivnyye Polimernyye Veshchestva, "Zinatne," 1971, pp 145-149

Staphylococcus aureus, Escherichia coli, Trichophyton group, and other bacteria. Good results were obtained with polyformaldehyde fibers with 5 and 10% BaSO₄, PVA with iodine-containing organic compounds. The obtained fibers were used for the manufacturing of such surgical materials as sutures, cotton, nets, contraceptive devices, etc., which presently are undergoing medical testing.

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USSR

VOL'F, L. A., GILLER, S. A., KOTETSKIY, V. V., MEOS, A. I., PLOTKIN, L. L.,
and VITUL'SKAYA, N. V., Leningrad Institute of Textile and Light Industry
imeni S. M. Kirov; Institute of Organic Synthesis, Academy of Sciences
Latvian SSR; Leningrad Sever Manufacturing Society

"Antimicrobial Fibers Produced From Compounds of Nitrofurans Series"

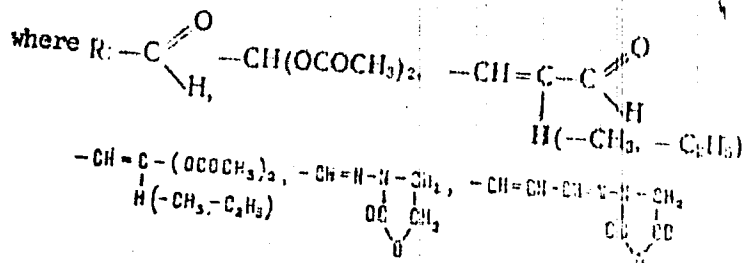
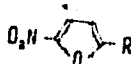
Riga, Fiziologicheski Opticheski Aktivnyye Polimernyye Veshchestva, "Zinatne,"
1971, pp 150-154

Abstract: Acetylation of polyvinyl alcohol (PVA) fibers with aldehydes of
5-nitrofurans series resulted in fibers capable of producing covalent ionic
bonds, or coordination linkage between medicinal substances and polymers. The
nitrofurans compounds used in this work had the following chemical structure:

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USSR

VOL'F, L. A., et al., Fiziologicheski i Opticheski Aktivnyy Polimernyye Veshchestva, "Zinatne," 1971, pp 150-154

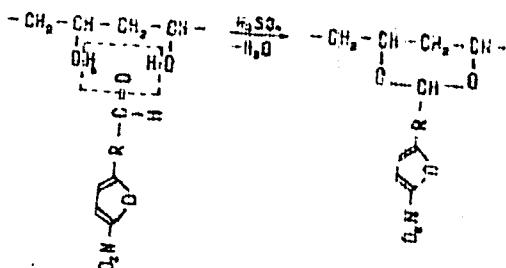


Among all compounds tested, 5-nitrofurfural (NF), β -(5-nitrofuryl-2)-acrolein (NFA), and their acetates such as furazolidone and furagin were of greatest interest. The acetylation of PVA fibers with aldehyde of 5-nitrofuran series is based on the ability of functional groups of polymer to react with carbonyl groups and to form acetylcyclobuthyleneglycol-1,3 links according to

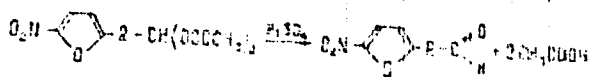
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USSR

VOL'F, L. A., et al., Fiziclogicheski i Opticheski Aktivnyy Polimernyye Veshchestva, "Zinatna," 1971, pp 150-154



In the case of acetates the reaction proceeds as



The substitution extent of hydroxyl groups of PVA was 18-25 mole % under optimal acetylation conditions. The obtained fibers were mechanically strong, stable to sterilization by boiling, contained numerous capillaries, and possessed high antimicrobial activity. More than 28% of the antibacterial substances could be incorporated into fibers. Experiments with a natural

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USSR

VOL'F, L. A., et al., Fiziologicheskii i Opticheskii Aktivnyi Polimernyye Veshchestva, "Zinatne," 1971, pp 150-154

cellulose were not very successful. Only cellulose esters were capable of reacting with aldehyde of 5-nitrofuran compounds and forming useful fibers. Compounds of 5-nitrofuran series were incorporated into polyamide, polyester, polyformaldehyde, and polypropylene fibers during their molding. The obtained fibers possessed high antibacterial properties along with good mechanical properties. All of the fibers can be used for sutures, blood vessel substitutes, contraceptive devices, and for other medical uses.

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USSR

VOL'F, L. A., YEMETS, L. V., KONEV, Yu. Ye., KOTETSKIY, V. V., MEOS, A. I.,
and KHOKHLOVA, B. A., Leningrad Institute of Textile and Light Industry imeni
S. M. Kirov; Leningrad Scientific Research Institute of Antibiotics

"Preparation of Physiologically Active Fibers With Ion-Fixed Preparations"

Riga, Fiziologicheski i Opticheski Aktivnyye Polimernyye Veshchestva,
"Zinatne," 1971, pp 159-165

Abstract: Sorption of colimycin, novocainamide, and brilliant green by modified polyvinyl alcohol (PVA) fibers containing sulfo and carboxyl functional groups was studied, with the aim of preparing physiologically active materials with antimicrobial, anti-inflammatory, and anesthetic properties. The best sorption of brilliant green and novocainamide took place on fibers with -COOH group in the salt (Na) form. The carboxyl group in H-form dissociated very little in acid solutions, but the same group in the salt (Na) form was ionized in a wide pH range. Similar results were obtained with colimycin. The sulfo group dissociated equally well in all media. Therefore, there were no significant differences in sorption of the above preparations on sulfoexchangers either in acid or salt form. Excess of preparations (1-1.5 fold) in solution and larger absorbing surface of fibers were of importance. A difference in
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USSR

VOL'F, L. A., et al., Fiziologicheskii i Opticheskii Aktivnyye Polimernyye Veshchestva, "Zinatne," 1971, pp 159-163

the sorption rate of the above preparations by fibers with carboxyl groups in H- or salt (Na) form is attributed to a greater swelling of the salt exchanger (Na especially) in comparison with H-form. In experiments with animals it was shown that presence of an ionic bond between fibers and medicinal preparations makes the textile material more stable toward bacteria, as opposed to ordinary impregnation of fibers with antibiotics. Catgut and natural silk treated with colimycin preserved their antimicrobial properties 8 days after their presence in soft tissues of rabbits. This is attributed to the formation of electrovalent and hydrogen bonds between antibiotics and peptides.

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- 91 -

1/2 021

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--ON PATHOGENESIS OF FUNCTIONAL DISTURBANCES OF THE PANCREAS IN PATIENTS WITH CHOLELITHIASIS -U-

AUTHOR--KOTIGER, YA.S.

K

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP 39-43

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PANCREAS, DUODENUM, SURGERY, BILE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1986/0529

STEP NO--UR/0549/70/104/003/0039/0043

CIRC ACCESSION NO--AP0102615

UNCLASSIFIED

2/2 021

CIRC ACCESSION NO--AP0102615

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR HAS STUDIED
 PATHOGENESIS OF FUNCTIONAL DISTURBANCES OF THE PANCREAS IN 127 PATIENTS
 OPERATED UPON FOR CHOLELITHIASIS. THE EXCRETORY FUNCTION OF THE
 PANCREAS WAS FOUND TO BE IMPAIRED IN 54.3PERCENT TO 59PERCENT OF
 PATIENTS, AFFECTION OF THE MAJOR PAPILLA DUODENI WAS NOTED IN 41PERCENT
 OF THE OPERATED PATIENTS. THE DURATION OF CHOLECYSTITIS, CHARACTER AND
 COURSE OF THE PATHOLOGIC PROCESS IN BILE PASSAGES AND PRIMARILY THE
 CONDITION OF THE MAJOR PAPILLA DUODENI CONSIDERABLY EFFECT THE EXCRETORY
 FUNCTION OF THE PANCREAS. ACCORDING TO THE AUTHOR'S DATA THE PANCREATIC
 INCRETORY FUNCTION WAS IMPAIRED IN ONE THIRD OF PATIENTS WITH
 CHOLELITHIASIS.

UNCLASSIFIED

USSR

UDC 621.371.029.4

KOTIK, D. A. and TRAKHTENGERTS, V. Yu.

"Some Nonlinear Effects in the Propagation of Very Low Frequency Signals in the Earth's Magnetosphere"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 3 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 3--collection of works) "Nauka," 1972 pp 164-167 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A376)

Translation: The decay interaction and nonlinear hydrodynamic scattering of very low frequency waves, causing the appearance of low-frequency plasma oscillations in the ionosphere in addition to amplitude modulation and frequency broadening of the original wave spectrum, are considered. Bibliography of two. W. S.

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USSR

UDC 551.510.721:539.12.08:621.039.524.4-97

KNYAZEV, V. A., KOTIKOV, P. I., LAPTEV, V. G., and GEBENIKIN, YU. V.

"Control of the External Environment of Atomic Electric Power Plants With a Boiling Water Reactor"

Moscow, Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 18-21

Abstract: A brief outline is given of the program used to control the external environment of an atomic electric power plant with a boiling water reactor. Data are presented on the mean diurnal discharge intensity, the wind rose diagram, and the amount of atmospheric precipitation during operation of atomic electric power plants with fuel elements which are not gas-tight, the mean annual results of measuring the β -activity of samples of the external environment taken at distances of 1 and 65 km from the ventilation pipes of atomic electric power plants compared with data on the discharge intensity of radioactive gases, and the intensity of the radiation exposure dose locally caused by flaring radioactive gases under various meteorological conditions and for various intensities of discharge through the ventilation pipe.

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USSR

KNYAZEV, V. A., et al., Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 18-21

The results of measuring the radioactive fallout and radio-metric analysis of the snow, soil, and vegetation samples permit the conclusion to be drawn that with a gas discharge intensity up to 1,000 curies/day, the contribution of the eliminated radioactive waste to the total activity of various objects of the external environment is not noticeable against the background of global fallout. The experimental values of the exposure dose intensity were used to calculate the absorbed radiation doses caused by an active cloud in the vicinity of the atomic electric power plant in a year. These estimates demonstrated that with a radioactive gas discharge intensity of 1,000 curies/day the absorbed radiation dose at a distance of more than 3 km from the ventilation center does not exceed 0.05 rads/year.

From the investigated data and the operating experience it has been concluded that two programs must be developed for controlling the external environment: for normal operating conditions of the atomic electric power plant, and for the occurrence of emergency discharge of radioactive substances into the external environment. Both control programs are outlined.

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USSR

KNYAZEV, V. A., et al., Atomnaya Energiya, Vol 29, No 1, Jul
70, pp 18-21

It is noted that the total number of samples and measurements
is multiplied by 5 or 10; times in the case of an emergency
situation.

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USSR

UDC 621.382.2.011.222

MAMZELEV, I. A., KOTIKOV, V. I.

"Computation of the Time for Establishing a Voltage at the Domain in a Gunn Device"

Tr. uchebn. in-tov svyazi, M-vo svyazi SSSR (Works of Educational Institutes of Communication. Ministry of Communications USSR), 1970, Issue 52, pp 177-179 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B176)

Translation: A computation is made of the time for establishing a voltage at the domain in a Gunn device. It is noted that the computed magnitude of the time for a device with a length of the active region of 100 micrometers, a carrier concentration of $5 \cdot 10^{14} \text{ cm}^{-3}$, and a bias of 70 v, amounts to 0.1 nsec, which satisfactorily agrees with experimental results. A Ye.

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USSR

UDC: 681.327.12

KOROVIN, V. G., ~~KOTIKOV, Yu. P.~~ REPIN, V. I., SAMORUKOV, V. A., SYSGYEV,
N. V., TEL'NYKH, O. A.

"A Computer Tape-Punching Device"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 13, May 72, Author's Certificate No 335704, Division G, filed 3 Jul 69,
published 11 Apr 72, p 210

Translation: This Author's Certificate introduces a device for punching
computer tape. The device contains a perforating mechanism connected to
the driven shaft of a single-turn drive clutch. The code electromagnets
of the perforating mechanism are electrically connected to the program
head of a readout module. The device also incorporates a tape transport
mechanism with two geared drive drums and the wheel of a ratchet mechanism
fastened on a common shaft. The dog of the ratchet mechanism is connected
to the driven shaft of the single-turn drive clutch. As a distinguishing
feature of the patent, the working precision of the device is improved by
fastening the eccentric of the punching mechanism drive and the crank of a
quadric-crank mechanism on the driven shaft of the single-turn drive clutch

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USSR .

KOROVIN, V. G. et al., USSR Author's Certificate No 335704

and by fastening the dog of the ratchet mechanism on the rocker arm of the quadric-crank mechanism, which is mounted on the common shaft of the tape-transport mechanism.

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USSR

UDC: 534-8

DYUDIN, B. V., KOTILEVSKIY, V. A.

"Investigation of the Acoustic Channel of a Waveguide-Type Level Indicator"

Tr. Taganrog. radiotekhn. in-ta (Works of Taganrog Radio Engineering Institute), 1973, vyp. 34, pp 218-227 (from RZh-Fizika, No 5, May 73, abstract No 52h600 by V. V. Semenov)

Translation: An investigation is made of the acoustic channel of sensors in level indicators in which this channel operates on normal waves. The radiating waveguide is a circular rod carrying on its surface a periodic structure comprised of truncated cones with their smaller bases turned toward a converter located on the upper face of the rod. The periodic structure can be used to change the direction of motion of the elastic wave in the receiving waveguide through 180 degrees relative to the radiating waveguide. The receiving waveguide through 180 degrees relative to the radiating waveguide. The receiving waveguide is a circular rod with a smooth surface. At short distances between waveguides immersed in a liquid an elastic wave is excited in the receiving waveguide by the fluid wedge method. By the selection of the oscillation frequency and waveguide diameter, elastic waves can be effectively radiated into the liquid and excited in the receiving waveguide. When the acoustic channel is tuned to the third mode, acoustic energy is most effectively

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USSR

DYUDIN, B. V., KOTILEVSKIY, V. A., Tr. Taganrog. radiotekhn. in-ta, 1973, vyp. 34, pp 218-227

transmitted when the period of the structure on the radiating waveguide is equal to the wavelength. The diameter of the radiating waveguide was chosen with the condition that the diameter of the truncated cone in the periodic structure be equal to that of the receiving waveguide. An overall view of the radiating waveguide is given. The acoustic channel of the level indicator was studied on an installation which is schematically shown in the paper. For the investigated waveguide system the optimum resonance frequency is 252 kHz for a structure period $n = 1$. At this resonance frequency there is a dead zone of 0.1-0.15 m on the ends of the waveguide due to the existence of a zone of acoustic signal transmission. A wideband spherical pickup was used to measure the pressure amplitude along a waveguide immersed in water. The resolution of the level indicator is 1250 $\mu\text{s/m}$. The delay time of a pulse in the acoustic channel as a function of liquid level was close to linear.

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UDC 577.1.615.7/9

USSR

KOTIN, A. M., and REPIN, V. S.

"The Effects of 2,4-Diamino-5-Chlorophenyl-6-Ethylpyrimidine ("Chloridine" on the Nucleic Acid Metabolism of White Rat Embryos"

Ontogenez (Ontogenesis), 1973, 4, No 2, pp 128-138 (from *RZh-Biologicheskaya Khimiya*, No 16, Aug 73, Abstract No 16F1946)

Translation: It is shown that the intragastric introduction of $\frac{1}{2}$ chloridine in rats (50 mg/kg on the thirteenth day of pregnancy) results in the development of identical morphological anomalies in the development of all of the embryos (the chloridine syndrome). In tests with radioactive predecessors (P^{32} and C^{14} -formate) it was observed that chloridine evokes blocking of deoxyribonuclease and ribonucleic acid synthesis in rat embryos 15 to 20 minutes after introduction. The rate of inclusion of C^{14} -thymidine in the deoxyribonuclease of the abnormal embryos after the introduction of chloridine is unchanged in the course of four hours. A twofold increase is observed in the inclusion of the C^{14} -formate in the gross albumen fraction of abnormally developing rat embryos. The obtained data are in agreement with earlier results obtained by the authors in that the mechanism of the teratogenic effect

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KOTIN, A. M., and REPIN, V. S., Ontogenez, 1973, 4, No 2, pp 128-138

of chloridine on the thirteenth day of development is obviously related to the primary deactivation of dihydrofolatreductase and the blocking of the pholate cycle in embryos.

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UDC 577.1:615.7/9

DANILENKO, V. S., KOTLY, V. N., TARNAVSKAYA, M. I., BARDIK, YU. V.
"Effect of Unithiole on the Chromaffin Tissue of the Adrenals in
Acute Radiation Sickness"

Farmakol. i toksikologiya. Resp. mezhved. sb. (Pharmacology and
Toxicology. Republic Interdepartmental Collection of Works), 1970,
No 5, pp 76-79 (from RZh-Biologicheskaya Khimiya, No 19, 10 Oct 70,
Abstract No 19 F1824)

Translation: Unithiole (I) increases the catecholamine content in
chromaffin cells of the adrenals in intact animals and restores the
epinephrine and norepinephrine content in the adrenals, which
decreases substantially after X-irradiation. I strengthens the
compensatory functions of the sympathoadrenal system. This may
explain the radioprotective and partial therapeutic effects of the
thiol compounds.

Resumé

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