

UDC 621.385.032.213.6

USSR

BALABANKIN, V. YE., KULESHOVA, T.F., NIKONOV, B.P., POPOVA, N.YU.

"Multilayer Materials Based On Nickel With Calcium Or Strontium For Cores Of Low-Temperature Oxide Cathodes"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 9, pp 110-116 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A68)

Translation: A multilayer core is proposed for an oxide cathode, operating at temperatures of  $850-1050^{\circ}\text{K}$ , with the object of stabilizing the speed of entry of an activator into the oxide layer. The multilayer core is made in the form of a band of nickel with addition of calcium or strontium, covered from both sides by a film of pure nickel. An alloy of nickel with calcium or strontium and nickel of mark NVK serves as a starting material for the production of such bands. The joint of the billet is accomplished on the unit for diffusion welding A 360.08 in a vacuum at a temperature of  $850 \pm 25^{\circ}\text{C}$  and a specific pressure of  $0.8-1.0\text{ kg/mm}^2$ . The welded billets are rolled without heating, with intermediate annealings in a vacuum (or in an  $\text{H}_2$  atmosphere) at a temperature of

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BALABANKIN, V. Ye., et al., Elektron. tekhnika. Nauchno-tekhn. sb. Elektron SVCh 1970, Issue 9, pp 110-116 (from RZh--Elektronika i yeye primeneniye, No 1, Jan 1971, Abstract No 1A68)

800  $\pm$  25°C after a total reduction in area of  $\sim$ 50%. The maximum gas evolution of the multilayer bands containing Ni with the addition of Ca and which is heated to 1000°C in a vacuum (pressure  $\leq 10^{-6}$  mm mercury) for 20-30 min was observed at 800-850°C and did not exceed 4 cm<sup>3</sup>/100 g. Under identical conditions of test, bands containing nickel with the addition of strontium gave off the maximum quantity of gases at a temperature of 900-950°C. 5 ill. 4 tab. 9 ref. G. B.

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109

1/2 009 UNCLASSIFIED  
TITLE--STRUCTURE OF XANTHALIN -U-

PROCESSING DATE--13NOV70

AUTHOR--(02)-SOKOLOVA, A.I., NIKONOV, G.K.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PRIR. SSSRIN. 1970, 6(1), 14-19

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLECULAR-STRUCTURE, HETEROCYCLIC OXYGEN COMPOUND, CHEMICAL  
SYNTHESIS, BENZENE DERIVATIVE, KETONE, HYDROGENATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FAME--3004/0176

STEP NO--UR/0393/70/006/001/0914/0019

CIRC ACCESSION NO--AP0130935

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 009

CIRC ACCESSION NO--AP0130935  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE STRUCTURE OF XANTHALIN (I, R  
PRIME1 EQUALS R PRIME2 EQUALS COCME:CHME) (II) WAS CONFIRMED. II GAVE I  
(R PRIME1 EQUALS R PRIME2 EQUALS COCMEBRCHBRME), M. 50-2DEGREES. I WAS  
HYDROGENATED IN MEQH OVER PT O SUB2 TO TETRAHYDROXANTHALIN. ALK.  
METHANOLYSIS OF I YIELDED TRANS ISOMETHYLKHELLACTONE (I, R PRIME1 EQUALS  
H, R PRIME2 EQUALS ME) (TRANS-III), M. 136-38DEGREES (C SUB6 H SUB6);  
(ALPHA)SUBD PRIME20 MINUS 47.7DEGREES (C 0.7, ETOH); R SUBF 0.3 IN 5:4:1  
N,HEXANE,C SUB6 H SUB6 MEQH ON HCONH SUB2 PAPER), ISOLATED FROM CIS  
TRANS III. I HYDROLYZED WITH 5PERCENT AQ. KOH IN DIOXANE GAVE  
ISKHELLACTONE (I, R PRIME1 EQUALS R PRIME2 EQUALS H), M. 213-15DEGREES  
(AQ. MEQH), R SUBF 0.0, AND ANGELIC ACID. I HYDROLYZED WITH 10N ALC. H  
SUB2 SO SUB4 YIELDED 3,OXO,3,4,DIHYDROXANTHYLETIN AND ANHYDROMARMESIN.  
FACILITY: VSES. NAUCH.-ISSLED. INST. LEK. RAST., BITTSA, USSR.

UNCLASSIFIED

USSR

UDC 621.791.052:539.433

NIKONOV, I. P., OSTROV, D. D., and YEREMENKO, A. U.

"Vibration Strength of Welded Joints of Transformer Steel"

Moscow, Svarochnoye Proizvodstvo, No 2, Feb 70, pp 27-28

Abstract: A test procedure and results from the vibration testing of welded joints made of transformer steel are presented. It is shown that the presence of a weld does not lower the vibration strength of the sample. In addition to comparing the vibration strength of the basic metal and welded joints, the effect of the silicon content in the steel is also noted. Samples 150 x 20 x 0.5 mm cut with and across the rolling direction were used.

The test results showed that the vibration strength of the welded joints and basic metals depends on the silicon content and on the welding direction of the sheet (the strength across the fiber is greater than along it). Fracture of the samples with a weld always took place in the basic metal near the weld-affected zone. The vibration strength of welded joints made of transformer steel in the case of three-phase arc welding with nonconsumable electrodes in argon in the section including the weld and weld-affected zone is appreciably higher than the vibration strength of the welded steel. The vibration strength of the basic metal and welded joints of transformer steel increases with an increase in silicon content,

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NIKONOV, I. P., et al., Svarochnoye Proizvodstvo, No 2, Feb 70, pp 27-28  
and vice versa. The tests were run so that the samples underwent 360,000 vibrations per hour.

- END -

5915

CSO: 1842

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USSR

UDC 577.4

NIKONOV, L. M.

"Automated Forms for Regular Expressions and Their Minimization"

Tr. Irkutsk. un-ta. Ser. mat. (Transactions of Irkutsk University, Mathematics Series) No 6, vol 74, 1970, pp 193-204 (from RZh--  
Matematika, No 10, 1972, Abstract No 10V403)

Translation: As one method of specifying a Mur automaton, the so-called automated forms of regular expressions are determined. They are used to consider problems in the identification of the regular expressions and the minimization of the automaton. From the introduction

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USSR

UDC: 577.4

NIKONOV, I. M.

"Automaton Forms for Regular Expressions, and Their Minimization"

Tr. Irkutsk. un-ta. Ser. mat. (Works of Irkutsk University. Mathematics Series), 1970, 74, No 6, pp 193-204 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V403 from the introduction)

Translation: So-called automaton forms of regular expressions are defined as one of the methods of assigning a Moore automaton. These forms are used to examine problems of identifying regular expressions and minimizing an automaton.

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UDC 616.981.51-036.21-022.39-07:551.4

USSR

ADAMOVICH, V. L., and NIKONOV, N. N., Bryansk Division, Geographical Society of the USSR

"Significance of Landscape and Ecological Factors in the Epizootiology of Anthrax. II. Comparative Method of Evaluating the Epizootic Intensity of an Area"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, Aug 70, pp 113-117

Abstract: Landscape and ecological features of anthrax foci in the western and eastern parts of Branskaya Oblast (southwest USSR) were examined, with particular reference to the principal soil types, humus content, soil pH, and frequency of epizootics. The main reservoirs of anthrax are found on the floodplains of small rivers and low peat bogs. The neutral reaction of the latter is favorable to the multiplication and retention of Bac, anthracis in the soil. New, largely man-made anthrax foci on acid soddy-podzolic clay loam, sandy, and sandy loam soils are the result of bringing peat from anthrax reservoirs to livestock farms and applying it to the fields, especially those with sandy soils. Activation of old anthrax foci and the creation of new foci is thus largely the result of human activity. This fact should be taken into account in any evaluation of the epizootic situation in an area, together with the physicochemical characteristics of the soils, biotic factors, and the extent of erosion.

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USSR

ADAMOVICH, V. L., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,  
No 8, Aug 70, pp 113-117

are completely noninfectious. However, when the infected nymphs are fed on  
immune blood, 50% of them still remain infectious and transmit the virus to the  
imago phase. These factors constitute partial limitation of the infinite spread  
of the virus.

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Epidemiology

USSR

UDC 619.616.981.51-036.21:551.4

ADAMOVICH, V. L., and NIKONOV, N. N. Bryansk Branch Geographical Society USSR

"The Significance of Landscape Ecological Factors in the Epizootiology of Anthrax.  
Report I. The Erosion Factor"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 47, No 6, June 70,  
pp 73-79

Abstract: Cartographic methods were used to analyze the distribution of cases of anthrax according to soil regions in Bryanskaya oblast. It was found that the quantitative distribution of foci of the disease is not related to the type or structural composition of the soil; rather, it depends on the intensiveness of breakdown of the terrain by erosion. The more eroded the terrain, the more numerous the foci of disease. Grey forest and soddy-podzolic, loamy soils are equally favorable for the development of anthrax. The highest increase in the incidence of anthrax foci was observed from 1944 through 1962.

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--THE SIGNIFICANCE OF TERRAIN ECOLOGICAL FACTORS IN THE EPIZOOTIOLOGY  
OF ANTHRAX, EROSION FACTOR -U-  
AUTHOR--(02)-ADAMOVICH, V.L., ~~NIKONOV, N.N.~~ *N*  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6,  
PP 73-79  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--ANTHRAX, EPIZOOTIOLOGY, GEOGRAPHIC LOCATION, CARTOGRAPHY, SOIL  
STRUCTURE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/0410 STEP NO--UR/0016/70/000/006/0073/0079  
CIRC ACCESSION NO--AP0126163  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0126163

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. CARTOGRAPHIC METHODS WERE APPLIED TO STUDIES OF THE TERRAIN IN BRYANSK REGION (THE MEETING POINTS OF THE MIDDLE RUSSIAN HEIGHTS AND THE LOWLANDS OF POLESIE). AS REVEALED, THE QUANTITATIVE DISTRIBUTION OF ANTHRAX FOCI (A TOTAL OF 643 EPIZOOTOLOGIC CENTRES WERE REGISTERED SINCE 1884) DEPENDED ON THE INTENSITY OF EROSION OF THE TERRITORY. GREY FOREST AND SODDY PODZOLIC LOAMY SOILS ARE EQUALLY FAVOURABLE FOR ANTHRAX. THE GREATEST ACTIVATION OF ANTHRAX FOCI WAS NOTED FROM 1944 TO 1962: THERE AROSE 355 NEW FOCI DURING THAT PERIOD WHICH CHIEFLY LOCALIZED IN THE REGIONS OF EROSION TERRAIN IRRESPECTIVE OF THE TYPE OF THE SOIL AND ITS MECHANICAL COMPOSITION.

FACILITY: BRYANSKIY OTDEL GEOGRAFICHESKOGO OBSHCHESTVA SSSR.

UNCLASSIFIED

1/3 016 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--CONSTRUCTION OF A HYPSONETRIC MAP OF THE VISIBLE LUNAR HEMISPHERE  
WITH ALLOWANCE FOR RELIEF -U-  
AUTHOR--(02)-LIPSKIY, YU.N., NIKONOV, V.A. N  
COUNTRY OF INFO--USSR  
SOURCE--MSOCOW, ASTRONOMICHESTKIY ZHURNAL, VOL 47, NO 2, 1970, PP 407-410  
DATE PUBLISHED-----70  
SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS  
TOPIC TAGS--MAP, LUNAR SURFACE, LUNAR TOPOGRAPHY, LUNAR CRATER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/0966 STEP NO--UR/0033/70/047/002/0407/0410  
CIRC ACCESSION NO--AP0126611  
UNCLASSIFIED

2/3 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0126611

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AS MANY AS TEN HYPSONETRIC MAPS OF THE LUNAR SURFACE HAVE ALREADY BEEN CONSTRUCTED, BUT EH ISOHYPSES ON THESE MAPS ARE VERY POORLY RELATED TO REAL RELIEF FORMS. THE AUTHORS DESCRIBE STEP BY STEP HOW THEY COMPILED A NEW MAP OF THIS TYPE WHICH REFLECTS ACTUAL RELIEF FORMS MORE REALISTICALLY. THE RAW DATA WERE DRAWN FROM THE CATALOG OF 1,052 POINTS COMPILED BY HOPMANN. ALL THESE POINTS ARE ON THE VISIBLE HEMISPHERE AND ACCOUNT FOR 66 PERCENT OF ITS AREA. THE TOPOGRAPHIC MAP OF THE VISIBLE HEMISPHERE COMPILED BY THE ARMY MAP SERVICE IN 1963 WAS ALSO USED. ALL OF HOPMANN'S, 1,052 POINTS WERE IDENTIFIED IN ARTHUR'S CATALOGUE AND PLOTTED ON THE SOVIET LUNAR MAP PUBLISHED IN 1967. SINCE THE AVERAGE DENSITY OF POINTS IS 5-6 PER AREA MEASURING 10DEGREES TIMES 10DEGREES AND SINCE THE AVERAGE ELEVATION ERRORS ARE 1.3 KM, THE ISOHYPSES WILL REFLECT ONLY THE LARGEST AND MOST ELONGATED RELIEF FORMS. A SHORTCOMING IS THAT EVEN THE LARGEST CRATERS WILL NOT BE REPRESENTED AS RELIEF FORMS BY ISOHYPSES. THE COMPILED MAP HAS ISOHYPSES DRAWN AT 0.5 KM INTERVALS (THE MAP IS REPRODUCED IN THE ARTICLE AT A REDUCED SCALE). THE ELEVATIONS OF CRATER WALLS AND BOTTOMS CANNOT BE READ FROM THE MAP. THE MAP COVERS THE REGION IN THE RANGE PLUS 70DEGREES LATITUDE AND LONGITUDE AND GIVES THE HORIZONTAL AND VERTICAL POSITION OF NONCRATER RELIEF FORMS WHOSE DIAMETERS EXCEED PLUS OR MINUS 1 KM. WITH AN ACCURACY TO PLUS OR MINUS 1 KM THE MAP MAKES IT POSSIBLE TO DETERMINE THE RELATIVE ELEVATION OF AREAL FEATURES GREATER THAN 150 KM IN DIAMETER SEPARATED BY ANY DISTANCE IN THE LONGITUDE OR LATITUDE RANGE PLUS OR MINUS 70DEGREES.

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PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0126611

ABSTRACT/EXTRACT--THE MAP SHOWS THAT THE ZERO CONTOUR FOR THE MOST PART RUNS ALONG THE BOUNDARY OF THE CONTINENTS AND SEAS. THE HIGHEST REGIONS ARE SITUATED AROUND GEMINUS CRATER (PLUS 3.0 KM), APPOLONIUS CRATER (PLUS 3.0 KM) AND IN THE CENTRAL PARTS OF THE CONTINENTAL REGION OF THE SOUTHERN HEMISPHERE (PLUS 3.0 KM). THE LOWEST AREAS ARE THE CENTRAL REGIONS OF CIRCULAR SEAS: MARE HUMORUM (MINUS 3.0 KM) AND MARE NECTARIS (MINUS 3.0 KM). LUNAR MOUNTAINS HAVE THE FOLLOWING MAXIMUM ABSOLUTE ELEVATIONS, THAT IS, ELEVATIONS RELATIVE TO A SPHERE WITH A RADIUS OF 1,738.0 KM: ALPS PLUS 1.5 KM. CAUCASUS PLUS 3.0 KM, APPENNINES PLUS 4.0 KM, CARPATHIANS PLUS 1.5 KM, JURA PLUS 1.0 KM AND ALTAY PLUS 3.0 KM. SEAS WITH A CIRCULAR CONFIGURATION HAVE A CLEARLY EXPRESSED CONCENTRIC STRUCTURE OF ELEVATIONS, SLOPING TOWARD THE CENTER. THE CONTINENTAL REGION OF THE SOUTHERN HEMISPHERE IS NONUNIFORM IN ELEVATION; WITHIN IT THERE ARE REGIONS WITH ELEVATIONS FROM MINUS 1.0 TO PLUS 3.0 KM. THE MAXIMUM DIFFERENCE IN ELEVATION ON THE MAP IS 7.0 KM.

UNCLASSIFIED



Heat Treatment

WDC (347):621.788.545

USSR

SHEPELYAROVSKIY, K. Z., KAL'NER, V. D., and NIKONOV, V. F., Automobile Plant  
imeni Likhachev

"Technique of Steel Heat Treatment During Induction Heating"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, Nov 70, pp  
7-12

Translation: Development of a theoretical concept on the effect of the degree of heterogeneity in the initial structure on the uniformity of the temperature field during electrical heating is discussed. The question of thermal parameters and displacement of the interval of phase transformations during a high rate of electric heating is considered, as is the problem of super-hardness at surface induction hardening. The special features in the application of induction hardening, as a method of increasing the structural strength of steel, are considered. Specifically, a discussion is presented of the method of surface hardening during deep induction heating which produces maximum strength properties at minimum alloying of steel and eliminates the formation of cracks during hardening.

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acc. Nr. **AA0108180** - Abstracting Service:  
CHEMICAL ABST. 6-70

Ref. Code  
**UR 0482**

135549t Steel. Ozerskii, A. D.; Solntsev, Yu. P.; Galkin, M. F.; Myagkov, V. N.; Vladimirov, N. E.; Yurasov, S. A.; Nikonov, V. F.; Yakovenko, A. P.; Parfenovskii, A. B.; Kunitsa, S. S. U.S.S.R. 260,899 (Cl. C 22c), 06 Jan 1970, Appl. 02 Dec 1968; From *Otkrytiya, Izobret., Prom. Obratly.* *Tovarnye Znaki* 1970, 47(4), 81. Steel with improved mech. properties consisted of: C 0.40-0.45, Si 0.5-0.7; Mn 0.5-0.8, Cr 1.5-1.8, V 0.3-0.5, Mo 0.9-1.2, impurities of S <0.03, and P <0.03%, and Fe the remainder. MSCL

REEL/FRAME

**19891846**

18 CH

1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--MECHANISM OF THE DEHYDROGENATION OF ISOPENTANE BY IODINE IN THE  
PRESENCE OF OXYGEN -U-  
AUTHOR--(05)--ADELSON, S.V., ADELSONVELSKIY, G.M. VEDENEYEV, V.I.,  
KATSNELSON, I.G., NIKONOV, V.I.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(3), 594-7  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DEHYDROGENATION, ISOPENTANE, IODINE, OXYGEN, CHEMICAL REACTION  
RATE, KINETIC EQUATION, ISOPRENE, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3004/1865

STEP NO--UR/0020/70/192/003/0594/0597

CIRC ACCESSION NO--AT0132127

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 018

CIRC ACCESSION NO--AT0132127.  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. KINETIC DATA WERE TABULATED FOR  
FOR REACTION RATED AND RATE CONSTS. IN THE DEHYDROGENATION OF ISOPENTANE  
BY IODINE IN THE PRESENCE OF O<sub>2</sub> AT 500DEGREES. IN ALL, 19 REACTION  
STEPS WERE REPRESENTED BY APPROPRIATE KINETIC EQUATIONS AND THEIR  
THERMODYNAMIC CHARACTERISTICS WERE TABULATED FROM COMPUTER ANAL., USING  
EXISTING LITERATURE DATA ON ACCUMULATION OF REACTION PRODUCTS.  
CONVERSION DATA ON ISOPRENE AND ISOPENTENE ISOMERS WERE ALSO INCLUDED IN  
THE ANAL. A REACTION MECHANISM WAS PROPOSED. FACILITY: MOSK.  
INST. NEFTEKHIM. GAZOV. PROM. IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr:

AP0049796

Abstracting Service:  
CHEMICAL ABST. 5/70

Ref. Code:

UR0065

99909z Dehydrogenation of isopentenes by iodine. Adel'son, S. V.; Nikonova, M. M.; Nikonov, V. I. (MINKh GP im. Gubkina, Moscow, USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(1), 8-12 (Russ). The oxidative dehydrogenation (Raley, J. H.; Mullineaux, R. D.; Bittner, C. W. J., 1963) of a fraction, contg. butenes 0.57,  $n$ -C<sub>3</sub>H<sub>8</sub> 3.31,  $n$ -isopentenes 9.90, iso-C<sub>3</sub>H<sub>8</sub> 5.15, isopentenes 80.0, and isoprene (I) 1.07 vol.% in a quartz reactor packed with Na<sub>2</sub>O/Al<sub>2</sub>O<sub>3</sub> acceptor, yielded 75.5 and 94.2 wt.% I at mol. ratio 0.05:1.0:12.4:1.0 iodine-O-water-isopentenes, resp., at 520° and contact time 1.3 sec. The velocity of the dehydrogenation of isopentenes with iodine was higher than that of iso-C<sub>3</sub>H<sub>8</sub>. The products of the deep oxidn. and decompn. during the dehydrogenation of iso-C<sub>3</sub>H<sub>8</sub> were mainly obtained on account of the secondary reactions of the raw material and in an insignificant amt, only from isopentenes as intermediate products. The effect of the diln. of the raw material with steam, comparative results of the dehydrogenation of isopentenes, and the dehydrogenation conditions are tabulated. The effect of the amt. of O, diln., contact time, and temp. are graphically presented. GGJR

REEL/FRAME  
19801718

Acc. Nr:

AP0043735

Abstracting Service: 5/70  
INTERNAT. AEROSPACE ABST.

Ref. Code:

UAP 0141

N

A70-23132 # Certain problems of constructing radio interferometers with autonomous reception (Nekotorye voprosy postroeniia radiointerferometrov s avtonomnym priemom). V. A. Alekseev, E. D. Gateliuk, V. D. Krotikov, V. N. Nikonor, V. S. Troitskii, and A. I. Chikin (Gor'kovskii Gosudarstvennyi Universitet, Gorki, USSR). *Radiofizika*, vol. 13, no. 1, 1970, p. 5-15. 24 refs. In Russian.

Discussion of the design principles of astronomical radio interferometers which feature autonomous reception--i.e., the absence of coupling between the reception points. The data are recorded at each reception point in conjunction with reference signals from frequency standards. The sensitivity of correlation devices which process data in digital form or in computer binary code is analyzed, and attention is given to possible improvements in high-resolution radio interferometers.

T.M.

ALS

REEL/FRAME  
19770141

18

NIKONOV, Ye. N.

Recording devices

1. BIBLIOGRAPHIC DATA		2. Report No.		3. Distribution, Accession No.	
Sheet		JPRS 59611		25 JULY 1973	
4. LOMO VR-1/2 TYPE SMALL VIDEO TAPE RECORDER					
5. H. G. Shul'man, V. A. Kozlov, Ye. N. Nikonov, et al.					
6. Joint Publication Research Service 1000 North Glebe Road Arlington, Virginia 22201					
7. Recording device					
8. Issuing Organization Name and Address					
As above					
9. Supplemental Notes					
10. IEREMIA KINO I TELEVIDENIA, No 1, 1972, Moscow					
11. Abstracts					
The report contains a description of the LOMO VR-1/2 type video tape recorder.					
12. C. P. Exotic and Exotic Analysis, Ye. Nikonov					
13. USSR Methods and Equipment Recording Devices Video Tape Recorder					
14. Manuscript Original and Title					
15. C. P. Exotic and Exotic Analysis, Ye. Nikonov					
16. C. P. Exotic and Exotic Analysis, Ye. Nikonov					
17. C. P. Exotic and Exotic Analysis, Ye. Nikonov					
18. C. P. Exotic and Exotic Analysis, Ye. Nikonov					
19. C. P. Exotic and Exotic Analysis, Ye. Nikonov					
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61. C. P. Exotic and Exotic Analysis, Ye. Nikonov					
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63. C. P. Exotic and Exotic Analysis, Ye. Nikonov					
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100. C. P. Exotic and Exotic Analysis, Ye. Nikonov					

CARL

USSR

UDC 628.19:[615.451.3+615.285.7:632.95]:  
612.014.46

LITVINOV, N. N., and ~~NIKONOVA~~, A. G., Institute of General and Communal Hygiene imeni A. N. Sysin, Academy of Medical Sciences USSR

"The Effects of Alkyl Sulfate on Resorption of Pesticides and Pesticide Concentration in the Organs of Experimental Animals"

Moscow, Gigiyena i Sanitariya, No 9, 1971, pp 21-25

Abstract: Rats were given single intragastric doses of  $C^{14}$ -tagged organochlorine pesticides (3.7 mg of Lindane or 8 mg of DDT) and 0.0125 mg of alkyl sulfate detergent (test groups) or the pesticides only (control group). The animals were sacrificed 1, 2, 4, 24, or 48 hours later, and the concentration of the radioactive isotope in the various organs was measured. In test groups, pesticides were absorbed into the blood and deposited in the internal organs much faster than in controls, yielding a correspondingly higher  $C^{14}$  concentration in the tissues during the initial hours. Elimination of the pesticides from the body was also accelerated by the presence of alkyl sulfate, especially the elimination of DDT from kidneys and elimination of DDT and Lindane from the liver, brain, and fatty tissue. Since very small doses of alkyl sulfate greatly accelerate the excretion rate of organochlorine pesticides, toxicological significance of the findings should be examined.

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USSR

UDC 628.312.3:628.445]:543.3

KORSH, L. Ye., Candidate of Medical Sciences, YURASOVA, O. I., Candidate of Medical Sciences, NIKONOVA, A. G., and MOTOVA, M. A., Institute of General and Communal Hygiene imeni A. N. Sysin, Academy of Medical Sciences USSR, Moscow

"Utilization of  $C^{14}$  for Rapid Determination of the Number of E. Coli in Water"  
Moscow, Gigiyena i Sanitariya, No 9, 1971, pp 78-81

Abstract: In the new method, the concentration of E. coli in water samples is determined by means of a radioactive count of the  $CO_2$  produced by bacteria suspended in a medium containing  $C^{14}$ -tagged glucose. The method was tested by adding a known number of bacteria (from 10 to 10,000) to metal containers with radioactive Endo and Rozolov media, incubating the samples at  $42^{\circ}C$  for 6 hours, removing the  $Ba(OH)_2$  saturated filter with which the containers were covered and which absorbed  $CO_2$ , and determining the radioactivity of the filters. To correct for background activity, filters placed over sterile media were also measured. The plotted results yielded a linear correlation between bacterial concentration and radioactive counts. The small difference between the two media was due to the fact that  $CO_2$  is less soluble in Endo medium than in Rozolov medium. Then bacterial concentrations in unknown water samples

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USSR

KORSH, L. Ye., et al., Gigiyena i Sanitariya, No 9, 1971, pp 78-81

were determined by the new method and by the standard culture method. The results differed by a factor of 1.5. Microbiological counts are known to vary as much as 200%. The new method is sensitive to within 10 bacteria in the Endo medium and 30-40 bacteria in the Rozolov medium, and the total procedure takes less than 7 hours. The radioactive method is recommended as reliable and convenient.

2/2

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USSR

UDC 613.647:621.37/39.029.64

SADCHIKOVA, M. N., and NIKONOVA, K. V., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR

"A Comparative Assessment of the Health of Workers Exposed to Microwaves of Different Intensity"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 9, Sep 71, pp 10-13

Abstract: Clinical examinations were performed on two comparable groups of radar plant employees periodically exposed to microwaves. In the first group the irradiation intensity was several milliwatts per square centimeters, while in the second group, due to protective arrangements, the irradiation intensity was 100 times smaller. Increased fatigability and irritability, memory impairment, bradycardia, and moderate thrombocytopenia were observed in both groups. The feeling of heaviness in the head, sleepiness in the daytime, cardiac pain, ECG changes, and moderate leukopenia were more pronounced in the first group, while vascular leukopenia were more pronounced in the first group, while vascular hyperractivity (dermographia, hyperhydration, and blood pressure fluctuations) were more prominent in the second group. On the whole, vascular dysfunction was equal in both groups (about 30% versus 16% in con-  
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USSR

SADCHIKOVA, M. N., and NIKONOVA, K. V., Gigiyena Truda i Professional'nyye Zabolevaniya, No 9, Sep 71, pp 10-13

trols), while the asthenic syndrome was more pronounced in the first group (45% versus 15.6% in the second group and 5% in controls). It is concluded that microwave irradiation is harmful to human health; however, the mode of action (cumulative effects versus single, large irradiation doses) remains to be elucidated.

2/2

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1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--MECHANISM OF THE SMILES REARRANGEMENT OF O-METHYL,DIARYL SULFONES;  
REVERSIBLE CYCLIZATION OF 2-METHYLOIARYLSULFONE CARBANIONS STUDIED BY A  
AUTHOR--(02)-DROZD, V.N., NIKONOVA, L.A. N  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1068-73  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--UV SPECTRUM, CHEMICAL REACTION MECHANISM, CYCLIZATION,  
ORGANOLITHIUM COMPOUND, SULFONE, BENZENE DERIVATIVE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3006/1273 STEP NO--UR/0366/70/006/005/1068/1073  
CIRC ACCESSION NO--AP0134947  
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134947

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EQUIL. POSITIONS WERE DETD. BETWEEN RR PRIME1 R PRIME2 C SUB6 H SUB2, SO SUB2 C SUB6 H SUB4 CH SUB2 LI,2(R, R PRIME1, R PRIME2 ARE H OR ME) AND THE CORRESPONDING CARBANIONS OF DIHYDROTHIOXANTHENE 10,10,DIOXIDE BY UV SPECTROSCOPY. THE EQUIL. POSITION DEPENDS ON THE ABILITY OF THE RR PRIME1 R PRIME2 C SUB6 H SUB2 NUCLEUS TO ACCEPT A NEUCLEOPHILIC SUBSTITUENT AND ON THE NUCLEOPHILIC STRENGTH OF THE LITHIOBENZYL GROUP. FACILITY: MOSK. SEL'SKOKHOZ, AKAD. IM. TIMIRYAZEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--MECHANISM OF THE SMILES REARRANGEMENT OF O,METHYL,DIARYL SULFONES;  
DUALITY OF THE REARRANGEMENT MECHANISM. REVERSIBLE CYCLIZATION OF  
AUTHOR--(03)--GROZD, V.N., NIKONOVA, L.A., TSELYEVA, M.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(4), 825-33  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--SULFONE, INTRAMOLECULAR MECHANICS, CYCLIZATION, SULFINIC ACID,  
ANION, BENZENE DERIVATIVE, ORGANIC SULFUR COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/2096 STEP NO--UR/0366/70/006/004/0825/0833  
CIRC ACCESSION NO--AP0125680  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125680

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CYCLIZATION OF PHSO SUB2 C SUB6 H SUB4 ME, O TO DIHYDROTHIOXANTHENE 10,10,DIOXIDE ANION IS A REVERSIBLE REACTION. IN THE CASE OF MORE SUBSTITUTED SULFONES SUCH AS PHSO SUB2 C SUB6 HME SUB4,2,3,5,6, THE CYCLIZATION TO 4A,9A,DIHYDRO,5,6,8,TRIMETHYLTHIOXANTHENE 10,10,DIOXIDE IS NOT REVERSIBLE. THE SMILES REARRANGEMENT OF THESE SULFONES TO SULFINIC ACID ANIONS PROCEEDS THROUGH THIOXANTHENE ANIONS WHICH MAY EITHER OPEN DIRECTLY OR FORM A SPIRO ANION FROM WHICH THE FINAL PRODUCT (SUCH AS PHCH SUB2 C SUB6 HSO SUB2 PRIME NEGATIVE O IS FORMED. FACILITY: MOSK. SEL'SKOKHOZ. AKAD. IM. TIMIRYAZEVA, MOSCOW, USSR.

UNCLASSIFIED



USSR

UDC 542.91:547.1'118

ARBUZOV, B. A., NURETDINOVA, O. N., NIKONOVA, L. Z., GOL'DFARB, E. I.,  
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov of the  
Academy of Sciences of the USSR

"Reaction of Phosphorous Acid Chlorides With Oxetanes"

Moscow, Izv. AN SSSR: Ser. Khimicheskaya, No 3, Mar 73, pp 627-632

Abstract: A study is made of the reaction of  $\text{PCl}_3$  and alkylphosphorous acid dichlorides with 2-methyloxetane and 3,3-dimethyloxetane in other than 1:1 reagent ratios. The equations of 18 reactions are given together with the experimental details of eight reactions and physical constants of 23 synthesized phosphorous acid derivatives.

1/1

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USSR

UDC 542.91:547.1'118

ARBUZOV, B. A., NIKONOVA, L. Z., NURETDINOVA, O. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov of the Soviet Academy of Sciences

"Some Properties of Oxaphospholans"

Moscow, Izv. AN SSSR: Ser. Khimicheskaya, No 3, Mar 73, pp 648-650

Abstract: Some reactions of compounds with the oxaphospholan ring were studied. Di-(1-methyl-3-chloropropyl) ester of ethylphosphonous acid at 100-110°C was converted to two phosphorus-containing products which separate fairly readily on distillation.

Pure 2-oxo-2-phenyl-5-methyl-1,2-oxaphospholan (Ib) was synthesized by additional heating of the mixture of (Ib) and (IIb) at 200-220°C for 1.5-2 hours. Compound (Ib) reacts with  $\text{PCl}_5$  in  $\text{CHCl}_3$  with formation of the corresponding acid chloride. Reacting compounds (Ia) and (Ib) with  $\text{P}_2\text{S}_5$  in boiling benzene produces the thiooxaphospholan compounds (IIIa) and (IIIb) which upon further heating with  $\text{P}_2\text{S}_5$  without a solvent at 120-130°C replace the oxygen in the oxaphospholan ring by a sulfur atom. The constants of the synthesized compounds are summarized in a table.

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UDC 542.91:547.1'118

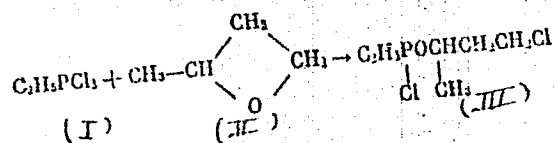
USSR

NURETDINOVA, O. N., ~~NIKONOVA, I. Z.~~, and ARBUZOV, B. A., Institute for Organic and Physical Chemistry imeni A. Ye. Arbutov, Academy of Sciences USSR

"Reaction Between Ethyldichlorophosphine and 2-Methyloxetane"

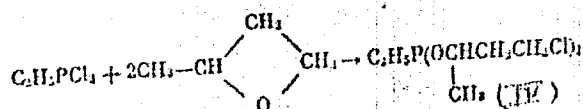
Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 548-550

Abstract: Reaction 1 was observed when equimolar concentrations



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of (I) and (II) were used. A 30-40% yield was recovered. When 2 moles of (II) and 1 mole of (I) were used, compound (IV) was obtained.

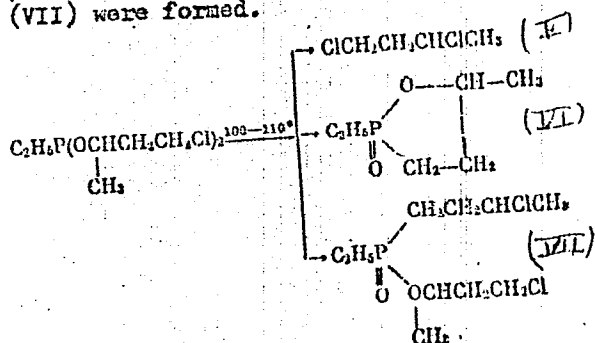


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-USSR

NURETDINOVA, O. H., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 548-550

Upon heating compound (IV) at 100-110°C for 20-30 min and then distilling, compounds (V), (VI), and (VII) were formed.



Compound (VI) may have been an impurity. Reacting (VI) with  $\text{PCl}_5$  produced a 50% yield of (VIII). Using  $\text{C}_6\text{H}_5\text{PCl}_2$  instead of  $\text{C}_2\text{H}_5\text{PCl}_2$ , a series of reactions

2/3

USSR

NURETDINOVA, O. N., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 548-550

was carried out yielding the  $C_6H_5P$  analogs of compounds (III), (V), (VI), and (VII).

3/3

USSR

UDC 542.91:547.1'118

NURETDINOVA, O. N., NIKONOVA, L. Z., and ARBUZOV, B. A., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, USSR Academy of Sciences

"Reaction of Diethylchlorophosphine with 2-Methyloxetane"

Moscow, Izvestiya Akad. Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 72, pp 197-198

Abstract: It is concluded from an experimental study of the reaction of diethylchlorophosphine with 2-methyloxetane that isomerization of the  $\alpha$ -methyl- $\gamma$ -chloropropyl ester of diethylphosphonous acid takes place via the formation of a cyclic intermediate product.

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USSR

UDC 542.91:661.718.1

NURETDINOVA, O. N., NIKONOVA, L. Z., and POMAZANOV, V. V., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of  $\alpha$ - and  $\beta$ -Oxides with Phosphorus Acid Dichlorides"

Moscow, Izvestiya Akademii Nauk, SSSR, Seriya Khimicheskaya, No 10, Oct 71, pp 2225-2230

Abstract: Reactions of 3,3-dimethyloxethane (I) and 2-methyloxethane (II) and phenylphosphonic acid dichloride (III) and diethylamidophosphoric acid dichloride (IV) was carried out. (III) reacts vigorously with oxethanes forming with (I) the O-2,2-dimethyl-3-chloropropylphenylphosphonic acid. The reaction of (II) with the above acid chlorides leads to the formation of isomeric products:  $C_6H_5P(Cl)OCH(CH_3)CH_2CH_2Cl$  and  $C_6H_5P(Cl)OCH_2CH_2CHClCH_3$ , the first compound forming predominantly. In contrast to (III), (IV) reacts with oxethanes only with heating or in the presence of a catalyst -- anhydrous  $ZnCl_2$ ; (IV) reacted with (I) gives diethylamido-2,2-dimethyl-3-chloropropylphosphoric acid dichloride and the reaction of (II) with (IV) produces a mixture of isomers:  $(C_2H_5)_2NP(Cl)OCH(CH_3)CH_2CH_2Cl$  and  $(C_2H_5)_2NP(Cl)OCH_2CH_2CHClCH_3$ .

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USSR

NURETDINOVA, O. N., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 71, pp 2225-2230

In contrast to oxethanes, 3-chloroethane does not react with (III) without heating; at 150° it yields  $C_6H_5P(S)Cl_2$ . The direction of the opening of epoxy ring was studied on propylene oxide, leading to formation of isomeric mixtures. With  $PCl_3$  propylene oxide, leading to formation of isomeric mixtures. With  $PCl_3$  propylene oxide gives primarily  $Cl_2POCH(CH_3)CH_2Cl$ , with (III) the same direction predominates, the product being  $C_6H_5P(Cl)OCH(CH_3)CH_2Cl$ , while with (IV) a 50:50 mixture of isomers is formed:  $(C_6H_5)_2NP(Cl)OCH(CH_3)CH_2Cl$  and  $(C_2H_5)_2NP(Cl)OCH_2CHClCH_3$ .

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USSR

UDC 542.91 + 661.718.1

ARBUZOV, B. A., NIKONOVA, L. Z., NURETDINOVA, O. N., POMAZANOV, V. V., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of Oxetanes With Phosphorus Trichloride and Dichloroanhydrides of Alkylphosphorous Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 70, pp 1426-1428

Abstract: The reaction of 3,3-dimethyloxetane with phosphorus trichloride or dichloroanhydride of alkylphosphorous acid yields the following type of compounds:  $RP(Cl)OCH_2C(CH_3)_2CH_2Cl$ , the R, b.p. (°C)/ mm Hg,  $d_4^{20}$ , and  $n_D^{20}$  being:  $Cl$ , 86.5/10, 1.2867, 1.4926;  $CH_3O$ , 41-41.5/0.12, 1.1949, 1.4710;  $C_2H_5O$ , 102-104/10, 1.1536, 1.4620;  $C_3H_7O$ , 113/12, 1.1253, 1.4620. Under similar reaction conditions 2-methyloxetane yields  $RP(Cl)OCH(CH_3)CH_2CH_2Cl$ , the R, b.p. (°C)/mm Hg,  $d_4^{20}$ , and  $n_D^{20}$  being reported:  $Cl$ , 79.5-80/10, 1.3347, 1.4951;  $CH_3O$ , 89-91/10, 1.2316, 1.4712;  $C_2H_5O$ , 96-98/10, 1.1688, 1.4620;  $C_3H_7O$ , 110.5/11, 1.1421, 1.4600.

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Acc. Nr:

AP0049796

Abstracting Service:  
CHEMICAL ABST. 5/70

Ref. Code:

UR0065

999092. Dehydrogenation of isopentenes by iodine. Adel'son, S. V.; Nikonova, M. M.; Nikonov, V. I. (MENKh GP im. Gubkina, Moscow, USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(1), 8-12 (Russ). The oxidative dehydrogenation (Raley, J. H.; Mullineaux, R. D.; Bittner, C. W. J., 1963) of a fraction, contg. butenes 0.57,  $n$ -C<sub>5</sub>H<sub>12</sub> 3.31,  $n$ -isopentenes 9.90, iso-C<sub>5</sub>H<sub>12</sub> 5.15, isopentenes 80.0, and isoprene (I) 1.07 vol.% in a quartz reactor packed with Na<sub>2</sub>O/Al<sub>2</sub>O<sub>3</sub> acceptor, yielded 75.5 and 94.2 wt.% I at mol. ratio 0.05:1.0:12.4:1.0 iodine-O-water-isopentenes, resp., at 520° and contact time 1.3 sec. The velocity of the dehydrogenation of isopentenes with iodine was higher than that of iso-C<sub>5</sub>H<sub>12</sub>. The products of the deep oxidn. and decompn. during the dehydrogenation of iso-C<sub>5</sub>H<sub>12</sub> were mainly obtained on account of the secondary reactions of the raw material and in an insignificant amt. only from isopentenes as intermediate products. The effect of the diln. of the raw material with steam, comparative results of the dehydrogenation of isopentenes, and the dehydrogenation conditions are tabulated. The effect of the amt. of O, diln., contact time, and temp. are graphically presented. GGJR

REEL/FRAME  
19801718

Polymers and Polymerization

USSR

UDC 678.06-419.8:677.521

GOLUBENKOVA, L. I., DEMEKHINA, YE. M., CHIBISOVA, YE. I., and NIKONOVA, S. N.

"Cements for Plexiglas Based on Epoxy-Novolak Resins"

Moscow, Plasticheskiye Massy, No 4, 1973, pp 12-14

Abstract: The strength characteristics of the bonding resins 6EN and 18EN were determined. These compounds contain 18-22% epoxy groups and have a drop depression temperature of 60-70°C. Addition of anilinephenol formaldehyde resin (211) to both 6EN and 18EN significantly improved the properties. The strength characteristics for both resins are similar and rather high at room temperature and up to about 200°C. However, the resin 6EN+211 is better suited to technical applications because impregnation of the plexiglass by the resin results in only a small change in the properties of the plexiglass.

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USSR

UDC 619:614.9-084.47

SHILOV, A. A., OSTASHEV, S. N., NIKONOVA, T. G., Candidates of Veterinary Sciences, NIKONOVA, T. N., and ZERNYKH, Z. A., Veterinarians Kirov Agricultural Institute

"A New Technique for Injecting Biologicals"

Moscow, Veterinariya, No 10, 1971, pp 67-69

Abstract: Injection of many animals with biologicals is a costly and time-consuming process because the site has to be carefully treated (the fur shaved and the skin rubbed with a disinfectant or alcohol) to avoid infection. A new injection technique is proposed (for which the authors received a Soviet patent) involving the treatment of boiled needles with maslotimol. A given preparation can be injected subcutaneously or intramuscularly without first shaving the fur. Infection is prevented by mechanical isolation of the needle from the microbes present on the skin and not by chemical action against them. Maslotimol is a sterile vapor mineral oil with 0.2% thymol added as an antiseptic. When used in the amount recommended, maslotimol does not have any bactericidal effect on, for example, vaccine. However, it cannot be used in taking blood from animals.

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Public Health, Hygiene and Sanitation

USSR

UDC 616.9-036.21+576.8+614.47:061.3(574) "1970"

KARAKULOV, I. K., REBENTSOVA, K. N., ZHURATOV, KH. ZH., MAKIROV, K. A., and  
NIKONOVA, T. N.

"Results of the First Combined Congress of Epidemiologists, Microbiologists,  
Specialists in Infectious Diseases, and Hygienists of Kazakhstan"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971,  
pp 134-137

Abstract: The above congress, held in Alma-Ata in June 1970, was attended  
by about 1000 persons who read over 400 papers on intestinal infections,  
brucellosis, tularemia, tuberculosis, leptospirosis, helminth diseases, and  
blood-sucking flies. Most were concerned with particularly widespread  
diseases in the Kazakh SSR. Several dealt with the epidemiology and control  
of acute intestinal infections (M. N. Yakovleva et al.), reduction of the  
incidence of typhoid fever in Alma-Ata Oblast (B. V. Rayushkin et al.),  
epidemiological geography of intestinal infections (E. P. Ka'yanova and I. A.  
Yalyshay), incidence of typhoid fever (B. V. Rayushkin et al.), seasonality  
of typhoid fever (I. I. G. Kozhukhov), dysentery in Kazakhstan during the last  
10 years (TE. K. Rumina and Ye. A. Guzeyev), epidemiology and prevention of  
leprosy in the Aral Sea region (Ch. A. Abdirov), diphtheria in Kazakhstan  
(K. A. Kostina), epidemiology of salmonellosis (P. P. Popova et al.).  
Papers on brucellosis and tularemia included clinical and epidemiological

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KARAKULOV, I. K., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971, pp 134-137

observations in brucellosis foci after suspension of specific vaccination campaigns (Ye. A. Shnyreva and N. F. Zenkova), brucellosis and economic considerations (S. I. Ryhalko), epidemiology of brucellosis (K. D. Zhalilov et al.) epizootiology and epidemiology of tularemia from the ecological and faunistic standpoint (V. I. Pakin et al.), combined natural foci of different diseases - toxoplasmosis, brucellosis, Q fever (S. A. Amizayev), leptospirosis Kazakhstan (I. P. Chernykh). One paper was read on the control of blood-sucking flies in Kazakhstan (N. S. Zhuk). There were many reports on the clinical aspects of infectious hepatitis, brucellosis, measles, dysentery, and some other diseases.

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USSR

UDC 619:614.9-084.47

SHILOV, A. A., OSTASHEV, S. N., NIKONOVA, T. G., Candidates of Veterinary Sciences, NIKONOVA, T. N., and ZERNYKH, Z. A., Veterinarians Kirov Agricultural Institute

"A New Technique for Injecting Biologicals"

Moscow, Veterinariya, No 10, 1971, pp 67-69

Abstract: Injection of many animals with biologicals is a costly and time-consuming process because the site has to be carefully treated (the fur shaved and the skin rubbed with a disinfectant or alcohol) to avoid infection. A new injection technique is proposed (for which the authors received a Soviet patent) involving the treatment of boiled needles with maslotimol. A given preparation can be injected subcutaneously or intramuscularly without first shaving the fur. Infection is prevented by mechanical isolation of the needle from the microbes present on the skin and not by chemical action against them. Maslotimol is a sterile vapor mineral oil with 0.2% thymol added as an antiseptic. When used in the amount recommended, maslotimol does not have any bactericidal effect on, for example, vaccine. However, it cannot be used in taking blood from animals.

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USSR

UDC 537.311.33:546.24'48

ARONS, A.A., MATLAK, V.V., NIKONYUK, YE.S., UST'YANOV, V.I.

"Electrical Properties Of  $\gamma$ -Irradiated P-Type Cadmium Telluride"

V sb. Radiats. fiz. nemet. kristallov (Radiation Physics Of Nonmetallic Crystals-Collection Of Works), Vol 3, Part 2, Kiev, "Nauk.dumka," 1971, pp 54-66 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B62)

Translation: The effect of  $\gamma$ -irradiation on the electrical properties of p-type CdTe irradiated at room temperature by  $\gamma$ -quanta of  $Co^{60}$  was studied. The investigation was conducted on single crystals of CdTe with concentrations of carriers (up to irradiation) at room temperature from  $5 \cdot 10^{12}$  to  $10^{14} \text{ cm}^{-3}$  and the mobility of holes from 32 to  $9 \text{ cm}^2 \text{ v}^{-1} \text{ sec}^{-1}$ , respectively;  $\gamma$  irradiation of p-type CdTe leads to the appearance of radiation defects of acceptors, increasing the concentration of holes and changing the mechanism of scattering. 10 ill. 7 ref. I.V.

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USSR

UDC 547.26'118

NIKITIN, V. M., KHIL'KO, M. YA., and TROGIMOV, B. A., Irkut Institute of Organic Chemistry and the Siberian Branch of the Academy of Sciences, USSR

"Vinyl Esters Containing Trivalent Phosphorus. VI. Ester Interchange of Trialkyl Phosphites and Diethyl Phosphites by the Vinyl Monoethers of Diols"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 4, 1972, pp 825-829

Abstract: Trialkyl phosphites, in the presence of metallic sodium, react according to the title react to give the mixed dialkyl ( $\omega$ -vinylalkyl) phosphites and an alcohol. This reaction was used to prepare ten new compounds of this general type from the vinyl monoethers of 1,3- and 1,4-butanediols. The ester interchange of the trialkyl phosphites in 1,3-dioxanaphthene is accompanied by isomerization.

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USSR

UDC 681.3.06.51

KONOZENKO, V. I. , MASHBITS, G. Ya., NIKTIN, A. I.

"The DD-3 Supervisory Program for the Dnepr-2 Computer"

1-YA Nauchno-tekhn. Konferentsiya Spets. Konstrukt. Byuro Mat. Mashin i Sistem [First Scientific and Technical Conference of the Special Design Bureau for Mathematical Machines and Systems -- Collection of Works], Kiev, 1970, pp 66-77 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4V666).

Translation: DD-3 is a development of the DD-1 and DD-2 supervisory programs and is designed for use in automatic production control systems and physical experiment automation systems using the Dnepr-2 computer. Furthermore, DD-3 is the basic supervisory program for the communications machines of multimachine complexes operating both in the computing and control modes. DD-3 allows three types of external organization of the computer process: 1) a process closed for a technical or technological object and occurring in real time; 2) a process closed for a consumer (operative reception of information for production, dialogue with programmer during debugging of programs); 3) separate (with respect to consumer) process with packet program running.

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USSR

UDC 621.373.8

GUREVICH, I. V., NIKUL, V. P.

"Utilization of a Field Transistor as a Parametric Element"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi  
Vyp. 2 (Materials of the Scientific and Technical Conference. Leningrad  
Electrotechnical Communications Institute. Vyp. 2), Leningrad, 1970, pp 28-30  
(from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8 D261)

Translation: This article contains a discussion of the possibility of using a channel transistor as a parametric resistor. Experimental characteristics confirming this possibility are presented. One of the possible schemes realizing a parametric functional multiplier is presented.

1/1

Acc. Nr: **AP0052453**

Ref. Code: **UR0475**

PRIMARY SOURCE: **Vrachebnoye Delo**, 1970, Nr **2**, pp **54-57**

**BLOOD SERUM AND URINARY AMINE NITROGEN AND THE FUNCTIONAL STATE  
OF THE LIVER IN NEPHROPATHIES**

**T. D. Nikula and L. A. Pyrig (Kiev)**

Findings of the amino acid metabolism were compared with different hepatic functions in 104 patients with nephropathies.

Results indicate that patients with the nephrotic syndrome showed hyperaminoaciduria, an increase of the clearance of amine nitrogen, a tendency to hyperaminoacidemia. Patients with chronic renal insufficiency showed hyperaminoacidemia, hypoaminoaciduria, a reduction of the clearance of amine acid.

Hepatic disorders exerted a negative effect on amino acid metabolism in patients with nephropathy, but there was no parallelism between disorders of separate functions of the liver and changes of aminoacid indices.

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REEL/FRAME  
**19821087**  
22 2

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--GEOCHEMICAL FEATURES OF THE PETROLEUM OF THE SHATILKOVSKII REGION  
-U-  
AUTHOR--(04)-SEMYACHKO, R.YA., AGABEKOVA, L.A., NOVITSKAYA, T.A.,  
NIKULENKO, YE.F.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(3), 261-3  
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS, PROPULSION AND  
FUELS, CHEMISTRY  
TOPIC TAGS--GEOCHEMISTRY, GEOGRAPHIC LOCATION, AROMATIC HYDROCARBON,  
METHANE, PETROLEUM PROSPECTING, GASOLINE, CHEMICAL COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1998/2056

STEP NO--UR/0250/70/014/003/0261/0263

CIRC ACCESSION NO--AT0122285

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0122285

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SMALL OIL FLOW (0.5 M PRIME3 -DAY) WAS OBTAINED FROM THE 2993-3300 M INTERVAL FROM A HOLE DRILLED IN THE TITLE AREA. THE OIL WAS OF LOW RESIN AND LOW S PARAFFIN TYPE WITH VERY SMALL CONTENT OF ASPHALTENES AND N. ITS LOW COKING ABILITY INDICATED THE PREDOMINANCE OF PARAFFIN HYDROCARBONS. THE PETROLEUM CONTAINED ALSO LITTLE OF ACID PRODUCTS AND A SMALL AMT. OF MECH. IMPURITIES. THE GASOLINE FRACTION WAS CHARACTERIZED BY HIGH SATN. CONTENT OF PARAFFIN HYDROCARBONS WAS ON THE AV. 70PERCENT. AN INCREASE IN CONTENT OF AROMATIC HYDROCARBONS, REACHING MAX. (15.5PERCENT) IN THE 175-200DEGREES FRACTION, WAS OBSD. DURING INCREASE IN TEMP. OF BOILING. INCREASE IN CONTENT OF S WAS OBSD. SIMULTANEOUSLY WITH INCREASE IN AMT. OF AROMATIC HYDROCARBONS. THIS SUBSTANTIATED THE FACT THAT GASOLINES OF METAMORPHOSED OILS, RICH IN CH SUB4 HYDROCARBONS, CONTAIN LARGE AMT. OF AROMATIC COMPS. THE 60-95 AND 150-750DEGREES FRACTIONS HAD THE MAX. CONTENTS OF NAPHTHENE HYDROCARBONS. FACILITY: INST. GEOL. NAUK, MINSK, USSR.

UNCLASSIFIED

USSR

UDC 669.187.26

(1)

ZABALUYEV, YU. I., MOSHKOVICH, YE. I., BURYAKOVSKIY, G. A., BRODSKIY, G. M.,  
and NIKULIN, A. A., Dnepropetsstal' Plant and All-Union Scientific Research  
Institute of Electric Welding Equipment

"Improving the Quality of Electroslag Remelted Steel by the Action of a Magnetic  
Field"

Moscow, Stal', No 8, Aug 73, pp 710-711

Abstract: The effectiveness of electros slag remelting of large ingots is lowered  
due to the development of segregation phenomena (formation of "barbs" in the  
macrostructure, etc.). Reducing the remelting rate eliminates this defect but  
causes deterioration of surface quality and, therefore, is permissible only in  
narrow limits. Electromagnetic action with the aid of a solenoid makes it  
possible to eliminate segregation defects and to produce metal of satis-  
factory quality even with a slight increase in the remelting rate. Comparative  
data on the quality of steels ShKh15SGSh and ShKh15Sh are presented in which  
remelting was done in the same modes in a crystallizer measuring 415 x 415 mm  
with and without the solenoid. M. N. KUZNETSOV, N. A. STETSENKO, L. P.,  
BULYSHENSKAYA, and S. S. KAZAKOV participated in this work. Two biblio-  
graphic references.

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USSR

UDC 669.187.6

NIKULIN, A. A., ARTEM'YEV, V. D., VOLKHONSKIY, L. A., KLYUYEV, M. M., TOPILIN, V. V., VOLKOV, S. YE., and SHARAPOV, A. A.

"Study of Methods of Acting on Processes of Crystallization of Ingots During Electric Slag Remelting"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals -- Collection of Works), No 75, Metallurgiya Press, 1970, pp 161-167

Translation: Results are presented from a study of the control of crystallization of an ingot by acting on the drop transfer and hydrodynamic processes in the slag and metal bath by two methods, performed on a laboratory electric slag installation. The methods are remelting of electrodes moving eccentrically relative to the axis of the crystallizer, and remelting of electrodes in a longitudinal constant magnetic field, created by a solenoid wound around the cover of the crystallizer and supplied by a controlled direct current source. 3 figures; 2 tables; 5 biblio. refs.

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USSR

UDC: 629.78.015.076.8

NIKULIN, A. M.,

"Problems of Realizing Optimum Trajectories for Entry of Vehicles Into the Dense Layers of the Earth's Atmosphere"

Moscow, Upr. dvizhushchimisya ob'yektami. Tr. IV Vses. soveshch. po avtomat. upr. Tbilisi, 1968--sbornik (Control of Moving Objects. Works of the Fourth All-Union Conference on Automatic Control. Tbilisi, 1968--collection of papers), 1972, pp 111-123 (from RZh-Raketostroyeniye, No 10, Oct 72, abstract No 10.41.74)

Translation: The author studies the particulars of realizing segments of optimum glide paths by means of minimizing sequences which correspond to a finite number of shifts in the controlling coordinate. In the proposed designs of minimizing sequences, the entire optimum segment under consideration is broken up into several parts, and the minimum number of shifts which ensure motion in a predetermined neighborhood of the optimum is determined. The minimum number of shifts is determined by the degeneracy of the problem, and by the method of assigning the minimizing sequences. An estimate is made of the increment in the functional as compared with the optimum value corresponding to the glide path. The optimum relation between the time of the minimizing sequence cycle and the time of the transient process in shift-

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USSR

NIKULIN, A. M., Upr. dvizhushchimisya ob"yektami. Tr. IV Vses. soveshch. po avtomat. upr. Tbilisi, 1968--sbornik, 1972, pp 111-123

ing control (where optimality is understood in the sense of overall losses on realization) is determined, and a quasi-optimum trajectory is plotted which minimizes the losses in the functional. Three illustrations, bibliography of four titles. Résumé.

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USSR

UDC: 531.55:521.1

BAUZE, V.-R. E., VITYUTSKIKH, V. T., ZAVADSKIY, V. M., NIKULIN, A. M.,  
PRONIN, Yu. S.

"On the Problem of Optimum Control of Angular Motions of a Rotating System  
of the Dumbbell Type"

Tr. 4-kh chteniy, posvyashch. razrabotke nauchn. naslediya i razvitiyu  
idey K. E. Tsiolkovskogo, 1969, Sekts. "Mekh. kosmich. poleta" (Works of  
the Fourth Lecture Series Dedicated to Elaboration of the Scientific  
Heritage and Development of the Ideas of K. E. Tsiolkovskiy, 1969, Section  
on the Mechanics of Space Flight), Moscow, 1970, pp 99-113 (from RZh-  
-Mekhanika, No 4, Apr 71, Abstract No 4A112)

Translation: The authors consider the motion of a rotating dumbbell-shaped  
space station subjected to small controlling moments whose time dependence  
is predetermined. As a result of integrating the system of equations of  
motion, which is possible after a considerable number of approximating  
simplifications, the problem of variation in the plane of rotation is  
solved. S. Ya. Stepanov.

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USSR

UDC 531.55.521.1

GURMAN, V. I., SALMIN, V. V., POPOV, YU. B., and NIKULIN, A. M.

"Control of Low-Thrust Space Vehicles With Account Taken of Their Motion About the Center of Mass"

Moscow, Tr. Pyatykh Chteniy, Posvyasch. Razrabotke Nauch. Naslediya i Razvitiyu Idey K. E. Tsiolkovskogo. Sekts. "Mekh. Kosmich. Poleta" (Works of the Fifth Lecture Series Devoted to Development of the Scientific Heritage and Development of the Ideas of K. E. Tsiolkovskiy. Series "Mechanics of Space Flight"), 1971, pp 59-67 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2A73 by G. S. Suvorov)

Translation: An investigation is made of the possibility of realizing some programs of control for the problem of the departure of a space craft with low thrust from the gravitational field of the Earth. The vehicle is assumed to be a solid body of variable mass. Control of movement of the center of mass and of rotation around it is effected by means of two electric-rocket cruise propulsion units. The vehicle is acted upon by the gravitational moment  $M_{gr}$  and by the controlling moment  $M_{contr}$  of the engine thrust. The acceleration vector lies in the orbital plane, and the motion is regarded only with respect to the pitch  $\theta$ . Two systems of a space craft with an electric-rocket

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USSR

UDC 62.505:629.78.05

NIKULIN, A. M.

"The Construction of a Quasi-Optimal Trajectory in the Problem of Minimal Entry Time Into the Earth's Atmosphere"

Kazan', Izvestiya Vysshykh Uchebnykh Zavedeniy. Aviatsionnaya Tekhnika, No 3, 1970, pp 30-38

Abstract: The quasi-optimal curves in the problem of the minimal entry time of a winged craft into the earth's atmosphere, dealt with in previously published papers by other authors, are calculated. Expressions are obtained for the increment of the functional when sectors of a slipping regime with respect to the angle of attack are realized by minimizing sequences with a finite number of shifts and with account taken of transients in shifting of the angle of attack between base values. Between the time of the period of the minimizing sequence and the time of the transient in shifting of the angle of attack, a relationship is established which provides for minimal losses in the functional at quasi-optimal trajectories of realization of the sectors of slipping regimes. 1 table, 4 figures, 5 bibliographic entries.

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- 10 -

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--RESPONSE OF PLANTS GROWN FROM LEFT AND RIGHT FRUITS OF SUGAR BEET  
PLANTS TO THE DIRECTION OF THE TERRESTRIAL MAGNETIC FIELD AND TYPE OF  
AUTHOR--(02)-NIKULIN, A.V., LEYSLE, V.F. N  
COUNTRY OF INFO--USSR  
SOURCE--FIZIOLOGIYA RASTENIY, 1970, VOL 17, NR 3, PP 471-477  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--MAGNETIC FIELD EFFECT, NITROGEN, NUTRITION, PLANT CHEMISTRY,  
CHLOROPHYLL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1999/1143 STEP NO--UR/0326/70/017/003/0471/0477  
CIRC ACCESSION NO--AP0123128  
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123128

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PLANTS OF ONE SEEDS SUGAR BEET PLANTS WERE CULTIVATED UNDER FIELD CONDITIONS FROM SEEDS OF L AND D BIOLOGICAL FORMS ORIENTED DURING SOWING TOWARDS EITHER THE S OR N GEOMAGNETIC POLE. RANDOMLY ORIENTED SEEDS SERVED AS CONTROLS (C). TO STUDY THE RESPONSE OF PLANTS GROWN FROM L OR D FRUITS AMMONIUM (A) OR NITRATE (N) NITROGEN SUPPLIED TO A PHOSPHORUS POTASSIUM BACKGROUND WAS EMPLOYED. THE GERMINATION POWER AND SEED VIGOR, FRESH WEIGHT PER 100 PLANTS DURING THINNING, CATALASE ACTIVITY, CHLOROPHYLL CONTENT AND RESPIRATION RATE OF LEAVES WERE DETERMINED DURING THE VEGETATION PERIOD. THE GERMINATING POWER AND SEED VIGOR WERE HIGHER IN LEFT FRUITS WITH A SOUTHERN ORIENTATION. PLANTS GROWN FROM THESE FRUITS DEVELOP AT A HIGHER RATE, POSSESS A HIGHER CATALASE ACTIVITY (BY 19PERCENT), CONTAINED MORE CHLOROPHYLL (52PERCENT), RESPIRE AT A HIGHER RATE (19PERCENT) AND YIELD A LARGER CROP (13PERCENT) OF BETTER QUALITY (16PERCENT). RIGHT HAND FRUITS ON THE OTHER HAND GERMINATED MORE RAPIDLY, YIELDED PLANTS WITH A FASTER GROWING (20PERCENT) AND WITH HIGHER RATE OF PHYSIOLOGICAL PROCESSES (7-32PERCENT) WHEN THE FRUITS WERE ORIENTED TOWARDS THE NORTHERN MAGNETIC POLE. AMMONIUM FORM OF NITROGEN EXERTS A FAVORABLE EFFECT ON PLANTS FROM LEFT HAND FRUITS, WHEREAS THE NITRATE FORM EXERTS A FAVORABLE EFFECT ON PLANTS FROM RIGHT HAND FRUITS. FACILITY: VORENEZH AGRICULTURAL INSTITUTE.

UNCLASSIFIED

Acc. Nr:

AP0044616

Ref. Code:

UR 0497

PRIMARY SOURCE:

Klinicheskaya Meditsina, 1970, Vol 48,  
Nr 2, pp 20-25

# THE BRONCHIAL OBSTRUCTIVE SYNDROME

K. G. Nikulin

## Summary

The article gives a pathogenetic generalization of ventilation and hemodynamic disturbances associated with obstruction of the bronchi. Ventilation disturbances in spastic bronchitis and bronchial asthma were compared. The obstructive syndrome is divided into acute and chronic, slowly and rapidly progressing, and malignant. A relation was established between the rate of the process and character of the injurious factor and diameter of affected bronchi. The author sets forth a concept on the stage-specific nature of the obstructive syndrome, which gives grounds to combine obstructive chronic bronchitis, obstructive emphysema with pulmonary hypertension and right-ventricular insufficiency by the notion of chronic obstructive bronchitis. The prominent role of infection in the development of spastic and allergic bronchitis gives grounds to refer to the expediency of including bronchial asthma into the notion of obstructive bronchitis.

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19771293



1/2 021 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--THERMODYNAMICS OF METHYLHEXANE ISOMERIZATION -U-  
AUTHOR--(04)--RUGANOV, G.N., KOBU, G.YA., ANDREYEVSKIY, D.N., NIKULIN, K.V.  
COUNTRY OF INFO--USSR  
SOURCE--NEFTEKHIMIYA 1970, 10(1), 16-21  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--THERMODYNAMICS, HEXANE, ALKYL RADICAL, ISOMERIZATION, PHASE  
EQUILIBRIUM, ENTROPY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1992/1966  
CIRC ACCESSION NO--AP0112930  
STEP NO--UR/0204/70/010/001/0016/0021  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112930

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUIL. WAS STUDIED IN THE SYSTEM  
2-METHYLHEXANE (II, 3-METHYLHEXANE (III) IN THE LIQ. AND VAPOR PHASES AT  
20-1700 DEGREES BY USING ALCL SUB3 AS A CATALYST. FROM THE EQUIL. DATA  
DELTA ETAD DEGREES SUB368 AND DELTA S DEGREES SUB368 WERE MINUS 24 PLUS OR  
MINUS 50 CAL-MOLE AND MINUS 0.47 PLUS OR MINUS 0.1 EU. DIFFERENCE IN  
ENTROPY OF I AND II CALCD. FOR ONE STEREOMER OF II (L OR D) WAS MINUS  
1.85 EU BASED ON EQUIL. DATA. FACILITY: BELURUSS. GOS. UNIV.  
IM. LENINA, MINSK, USSR.

UNCLASSIFIED

**Mechanical Properties**

USSR

UDC: 621.746.58

LIPCHIN, T. N., NIKULIN, L. V., LOMONOSOV, Yu. M., Perm' Polytechnic Institute

"Hardening of Alloys in Pressure Die Casting"

Moscow, Izvestiya VUZov: Chernaya Metallurgiya, No 11, 1972, pp 161-163

Abstract: The authors investigate the hardening mechanism responsible for the high mechanical properties which are attained without heat treatment when the pressure die casting method is used for making parts. M15 magnesium alloy specimens cast in a sand mold, a chill mold and by pressure die casting were studied for mechanical properties, density, grain size, microstructure, dislocation density -- characteristics which can have an appreciable effect on the strength properties of alloys. The strength properties of specimens made by pressure die casting exceeded those of chill-mold specimens by a factor of 1.4, with a corresponding figure of 2 for die-cast specimens over sand-mold specimens. The mechanism responsible for hardening of alloys during pressure die casting involves high cooling rates and application of pressure during the crystallization process. These conditions of solidification result in a sharp reduction in grain size (by a factor of 10 as compared with chill-mold

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USSR

LIPCHIN, T. N. et al., Izvestiya VUZov: Chernaya Metallurgiya, No 11, 1972, pp 161-163

casting, and by a factor of 20 as compared with sand-mold casting). These conditions also increase the dislocation density by nearly an order of magnitude as compared with sand-mold casting. All three casting methods gave the same density. The nonequilibrium conditions obtaining during pressure die casting result in slight supersaturation of the solid solution, which makes heat-treat hardening ineffective.

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USSR

UDC 621.373.826

KRIVOSHCHIEV, G. V., NIKULIN, N. G., and SOKOLOVSKIY, R. I.

"Transient Processes During Excitation of Optical Harmonics"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics — collection of works), Vyp.2, Novosibirsk, 1972, pp 35-60 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 D145)

Translation: None.

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USSR

UDC: 621.373.018.756

KRIVOSHCHIEKOV, G. V., NIKULIN, N. G., SMIRNOV, V. A., and  
SOKOLOVSKIY, R. I.

"Transient Process in a Laser With Active Modulation"

Novosibirsk, Avtometriya, No 5, 1972, pp 113-119

Abstract: An analysis is made of the transient process in lasers with active modulation of the losses involved in the excitation of ultrashort light pulses. The traveling wave laser, in which the ensemble of two-level atoms with uniformly expanded amplification lines is used as the model for the active medium, is examined. With the dispersion assumed to be negligible, the pulse variation occurs in the active medium and the modulator. The transmission of the light pulse through the medium at carrier frequency resonance is then described by a system of three equations. These are solved and an expression for the radiation intensity is derived. The computations show that linear compression is basically responsible for shortening the pulse duration. Experiments to check the effect of the linear oscillation development time on the pulse duration were conducted, and a diagram of the apparatus plus an  
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USSR

UDC: 621.373.018.756

KRIVOSHCHIEKOV, G. V., et al, Avtometriya, No 5, 1972, pp 113-119

explanation of the procedure is given. Oscillograms of the oscillation pulses and an ultrashort pulse with a width of  $6 \cdot 10^{-10}$  s are reproduced.

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U R

UDC 621.375.82

KRIVOSHCHIEV, G. V., NIKULIN, N. G., SOKOLOVSKIY, R. I.

"Nonstationary Processes on Excitation of Optical Harmonics"

V sb. Nelineyn. protsessy v optike. (Nonlinear Processes in Optics--collection of works), vyp. 2, Novosibirsk, 1972, pp 35-60 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D880)

Translation: In the approximation of a given field, the time-space characteristics of the transition process are analyzed for excitation of the second harmonic by ultrashort pulses and series of ultrashort pulses of laser radiation for colinear and noncolinear interaction. It is demonstrated that in the first case for defined relations between the oscillation period as a result of inexact synchrony of the second harmonic amplitude and the repetition rate of the ultrashort pulses, an increase in the second harmonic amplitude with an increase in the path length in the nonlinear crystal (train synchrony) is possible. The shape of the second harmonic pulses as a function of the shape of the ultrashort pulses is discussed. The applicability of the approximate solutions obtained by the second harmonic excitation method was analyzed in the case of  $l_k \gg l_Y$  and in the approximation of the given field in the case  $l_k \ll l_Y$ , where  $l_k$  is the quasistatic length, and  $l_Y$  is the length of the nonlinear interaction. It is demonstrated that the experimental measurement of

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USSR

K. VOSHCHEKOV, G. V., et al., Nelineyn. protsessy v optike., vyp. 2, Novosibirsk, 1972, pp 35-60

the transverse distribution of the second harmonic field in the case of non-colinear interaction can be used to measure the duration of the ultrashort pulses. The bibliography has 21 entries.

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USSR

UDC 621.378.535

KRIVOSHOHEKOV, G.V., ~~NIKULIN, M.G.~~, SKOCLOVSKIY, R.I. [Institute Of Semiconductor Physics, Siberian Branch, AS, USSR]

"Concerning One Synchronism During Excitation Of Harmonics By Supershort Light Pulse"

Izv.VUZ: Radiofizika, Vol XV, No 5, May 72, pp 795-796

Abstract: Interest in nonstationary phenomena during excitation of the second harmonic results from the advent of lasers which generate supershort light pulses. A number of detailed studies of the dynamics of excitation of the second harmonic by a single ultrashort pulse appear in the literature. In the present paper the excitation is studied of the second harmonic by a periodic sequence of supershort light pulses. The authors thank S. A. Akhmanov for helpful critical remarks. 9 ref. Received by editors, 2 April 1971.

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USSR

UDC 621.396.6-181.48

NIKULIN, V. B. and POPOV, P. S.

"Test-Pulse Shaper Circuit for Controlling the Dynamic Parameters of Integrated Circuits"

Sb. nauch. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collected Scientific Works on Problems of Microelectronics. Moscow Institute of Electronics Technology), 1972, vyp. 10, pp 33-39 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 V226)

Translation: An analysis is given of the shaper for the pulses entering into the structure of a semi-automaton used for controlling the dynamic parameters of standard and large-scale integrated circuits. A detailed description of advantages is given together with a digital illustration of the developed variant of the pulse shaper designed for the ELEKON-D semi-automaton. Resume.

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USSR

UDC 621.396.6-181.48

NIKULIN, V. B. and POPOV, P. S.

"Stroboscopic Principle for Constructing Semi-Automatic Units for Controlling the Dynamic Parameters of Integrated Circuits"

Sb. nauch. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collection of Scientific Works on Problems in Microelectronics. Moscow Institute of Electronics Technology), 1972, vyp. 10, pp 20-26 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 V221)

Translation: A structural synthesis is given of a semi-automaton for controlling the dynamic parameters of digital integrated circuits. The units and assemblies of the semi-automaton are described. Technical data are presented which were obtained from studying the working conditions of the unit in industrial production.  
*Resume.*

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USSR

UDC 621.317.75.001.24

NIKULIN, V. B. and POPOV, P. S.

*"Selecting the Parameters and Circuit of an Automatic Master Oscillator for Straddle-  
Stereography"*

*Sb. nauch. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collected  
Scientific Works on Problems in Microelectronics. Moscow Institute of Electronic  
Technology), 1972, vyp. 10, pp 27-32 (from RZh-Radiotekhnika. No 11, Nov 72,  
Abstract No 11 A262)*

Translation: The authors propose the structure (circuit diagram) for a generator of test pulses of given shape and parameters of the formed signal. An analysis is given for the formation of the fronts of test pulses and synchropulses. Methods for measuring the basic parameters of the digital, integral microcircuits are considered. Resume.

UNCLASSIFIED

PROCESSING DATE--20NOV70

1/2 018

TITLE--THE EFFECT OF PREDNISOLONE ON THE METABOLISM OF ISOLATED HOMOLOGOUS  
HEART IN PERFUSION WITH THE AID OF A DONOR -U-

AUTHOR--(C4)-NUSECA, I.M., NIKULIN, V.I., KOROTKINA, R.N., SHORINA, L.V.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,

NR 6, PP 45-47

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PREDNISONE, HEART, LACTATE DEHYDROGENASE, TRANSAMINASE, SULFUR  
ISOTOPE, CHEMICAL LABELLING, METHIONINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3004/C7C6

STEP NO--UR/0219/70/049/006/0045/0047

CIRC ACCESSION NO--AP0131305

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 018

CIRC ACCESSION NO--AP0131305

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

ABSTRACT. THE AUTHORS CONDUCTED STUDIES OF THE EFFECT OF PREDNISOLONE ON THE SYNTHESIS OF TOTAL, CONTRACTILE AND SARCOPLASMATIC PROTEINS (BY THE INCORPORATION OF S-PRIME35 LABELLED METHIONINE) OF DIFFERENT REGIONS OF ISOLATED HOMOLOGOUS HEART IN ITS PERFUSION WITH THE AID OF A LIVE DONOR. THE PREDNISOLONE EFFECT WAS ALSO INVESTIGATED ON THE ACTIVITY OF A NUMBER OF ENZYMES OF THE BLOOD PLASMA AND MYOCARDIUM OF THE PERFUSED HEART. PREDNISOLONE WAS INTRODUCED IN A DOSE OF 10 MG-KG OF BODY WEIGHT EVERY FIVE MINUTES FOR ONE HOUR. INHIBITION OF THE SYNTHESIS OF SARCOPLASMATIC PROTEINS OF ALL REGIONS OF THE ISOLATED HEART WAS NOTED; THE SYNTHESIS OF CONTRACTILE PROTEINS DID NOT CHANGE. IN THE BLOOD PLASMA 90 MINUTES AFTER PERFUSION THE ACTIVITY OF LACTIC DEHYDROGENASE AND GLUTAMIC OXALOACETIC TRANSAMINASE INCREASED IN COMPARISON WITH THAT AT THE BEGINNING OF PERFUSION. THE ENZYMIC ACTIVITY IN THE PERFUSED HEART AND DONOR HEART DID NOT CHANGE.

FACILITY: A. V. VISHNEVSKY INSTITUTE OF SURGERY OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--ROLE OF GLUCOCORTICOID AND MINERALOCORTICOID SECRETION IN  
DISTURBANCES OF PROTEIN METABOLISM AFTER THERMAL TRAUMA -U-  
AUTHOR--(02)-ZAYETS, T.L., NIKULIN, V.I.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(1), 246-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--ENZYME ACTIVITY, LIVER, MUSCLE PHYSIOLOGY, KIDNEY, THERMAL  
BURN, RAT, PROTEIN METABOLISM, METHIONINE, BLOOD SERUM, HEART MUSCLE,  
SULFUR ISOTOPE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3005/1662 STEP NO--UR/0020/70/192/001/0246/0248  
CIRC ACCESSION NO--AT0133567

UNCLASSIFIED



2/2 032

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0133567

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MINERALOCORTICOIDS, BUT NOT GLUCOCORTICOIDS, INCREASED THE ACTIVITY OF PROTEOLYTIC ENZYMES IN THE LIVER, MUSCLES, AND KIDNEYS OF BURNED RATS AND INCREASED PROTEIN SYNTHESIS IN ALL THE ORGANS. THE ADRENALECTOMY INDUCED DECREASE IN PROTEOLYSIS IN RATS AFTER THERMAL TRAUMA WAS COMPLETELY RESTORED BY DEOXYCORTICOSTERONE ACETATE (DOCA). THE LEVEL OF PRIME35 S LABELED METHIONINE INCORPORATION IN THE LIVER, SERUM, AND CARDIAC MUSCLES OF ADRENALECTOMIZED BURNED RATS WAS RESTORED BY CORTISONE TO THE LEVEL FOR INTACT BURNED RATS. DOCA INCREASED THIS LEVEL TO LEVELS GREATER THAN THOSE IN CONTROL OR IN INTACT BURNED RATS. FACILITY: INST.

KHIR. IM. VISHNEVSKOGO, MOSCOW, USSR.

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USSR

KONIKOVA, A. S., Director, Biochemistry Laboratory, Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR, POGOSOVA, A. V., Doctor of Biological Sciences, and NIKOLIN, V. I., Surgeon

"Delayed Death"

Moscow, Znaniye-Sila, No 7, 1972, pp 6-7

Abstract: The purpose of the research described is to determine the mechanism of death. The authors are concentrating on the biosynthesis of protein from amino acids, upon which function the life of the organism depends. Protein exists in two states simultaneously: assimilation and dissimulation. Since circulation stops at death, no amino acids are furnished to cells for biosynthesis; does biosynthesis stop because it lacks material or because it is the mechanism of death? With an isotopic tracer, radioactive amino acids, and an artificial circulation-respirator, it is possible to determine which body organs continue biosynthesis and to what degree compared with a normal living being. It is known from animal experiments that protein biosynthesis stops in the brain and spleen first, in the pancreas last. Animals have been fully reanimated up to 15 minutes after death, but after more than 15 minutes biosynthesis of some tissue cannot be reanimated. When the body temperature of animals was lowered to 15-16°, biosynthesis ceased, and complete anabiosis was possible. In both death and hypothermia, assimilation ceases, but in

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KONIKOVA, A. S., et al., Znaniye-Sila, No 7, 1972, pp 6-7

death dissimilation continues. Rabbits with induced hypothermia for 2 hours, and rabbits which have been dead for ten minutes and then undergone hypothermia for 1 hour, have been completely reanimated. Chemical and electrical methods for stopping dissimilation are being sought. Electrical shock has been used to help stimulate more complete biosynthesis in the reanimation of rabbits. Biosynthesis of protein in tissue removed from organisms up to 4 hours after death has resumed when the tissue was placed in a solution containing amino acids.

USSR

UDC 666.113.431.47.32-31.28

BLINOV, V. A., UDOVENKO, N. G., NIKULIN, V. KH., PRUSAKOVA, L. M.,  
SOKOLINSKIY, A. G., ORLOV, V. N., VYSOTSKAYA, Z. I., and CHERNYSHEV, A. V.

"Glass for Ultrasonic Delay Lines"

USSR Author's Certificate No 366156, Filed 26 Jun 70, Published 16 Jan 73  
(from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Zlaki, No 7,  
Mar (a) 73, Claim No 1453164/29-33)

Translation: A glass for ultrasonic delay lines, including  $\text{SiO}_2$ ,  $\text{ZnO}$ ,  $\text{BaO}$ ,  
 $\text{K}_2\text{O}$ , is distinguished by the fact that, in order to obtain stable acoustic  
properties it contains the above components in the following amounts, weight  
%:  $\text{SiO}_2$  49-65;  $\text{ZnO}$  5-25,  $\text{BaO}$  10.5-30;  $\text{K}_2\text{O}$  6-25, and furthermore  $\text{Sb}_2\text{O}_3$  0.05-3.

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Acc. Nr:

AP0051975

Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i  
Meditsiny, 1970, Vol 69, Nr 3, pp 113-116

SOME MORPHOLOGICAL CRITERIA OF AFFERENT SPINAL CORD  
INNERVATION OF THE INTERNAL ORGANS

G. V. Stovichek, V. M. Nikulin, R. I. Zelenkov

Yaroslav Medical Institute

Visceral branches of sympathetic nodes leading to the internal organs were investigated to determine the presence in them of intervertebral sensory ganglia neuron dendrites. Afferent spinal conductors have always been demonstrable in the nerves of the esophagus, lungs, heart, small intestine, liver and kidneys of men and dogs, but there is a great difference in the number of these fibers in the nerves of various organs. Thus, the absolute number of sensory conductors is the highest in the esophageal nerves and diminishes in the following order: esophagus→lungs→heart→liver→small intestine→kidneys. Viscerosensory functions of certain organs, especially of the small intestine, kidneys and liver are provided with a relatively small number of neuron elements coming from intervertebral nodes. It is obvious that many internal organs possess local neuro-reflectory mechanisms and have no need in a greater scope of afferent spinal cord innervation for the implementation of specific functions.

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VASIL'YEV, I. Ya., NIKULIN, V. N.

"Study of the Adsorption of Ions of Certain Elements in Groups I-VIII on Surface (111) of Semiconductor Monocrystals"

Tr. Kazan. Khim.-tekhnol. In-ta [Works of Kazan Institute of Chemical Technology], No 46, 1971, pp 154-163 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 B1499 from the Resume).

Translation: The method of radioactive indicators is used to study the adsorption of Ag, Au, Zn, Cd, Hg, In, Cr, Ge, Sn, As, Sb, Se, Ti, Fe and Co ions on surface (111) of germanium, indium antimonide and indium arsenide monocrystals and on surface ( $\bar{1}\bar{1}\bar{1}$ ) of indium antimonide and indium arsenide monocrystals following etching and washing. It is demonstrated that the adsorption of Ag, Au, Cd, Hg, Se and Te ions can reach several dozens of monolayers, whereas Ge, As and Co do not even form one monolayer. The remaining elements studied form a monolayer when adsorbed. It is also established that the adsorption of ions increases with increasing washing time.

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USSR

UDC 621.774:539.4.014.3

MONOSHKOV, A. N., LUPIN, V. A., KUTEPOVA, V. I., NIKULIN, Yu. N., Urals  
Scientific Research Institute for the Pipe Industry, Chelyabinsk

"Estimation of Limiting Pressure in Wrapped Pipes with Axial Loads"

Moscow, Stroitel'stvo Truboprovodov, No 2, Feb. 1973, pp 10-12.

Abstract: Wrapping of large diameter pipes significantly increases their resistance to large ruptures and in many cases allows a reduction in metal consumption. This article presents a method for estimation of the maximum pressure in wrapped pipes loaded with both internal pressure and axial forces which change in direct proportion to the pressure. Calculations are performed for thin wall pipes, the wrapping of which accepts only circumferential forces. The axes of the primary stresses and deformations are assumed to coincide with the geometric axes of the pipe. Analysis shows that as the axial compressive forces increase, the effectiveness of wrapping increases significantly.

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1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--CHANGE IN THE PERMEABILITY OF NUCLEOPROTEIN MONOLAYERS UNDER THE  
INFLUENCE OF X RAYS -U-  
AUTHOR--(03)-TONGUR, A.M.; PAVLOVSKAYA, T.YE.; NIKULIN, YU.P.  
COUNTRY OF INFO--USSR  
SOURCE--RADIOBIOLOGIYA 1970, 10(1), 9-13  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--NUCLEOPROTEIN, PERMEABILITY MEASUREMENT, X RAY RADIATION  
BIOLOGIC EFFECT, RADIATION DOSAGE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1998/0485 STEP NO--UR/0205/70/010/001/0009/0013  
CIRC ACCESSION NO--AP0121159  
UNCLASSIFIED



2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121159

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

ABSTRACT. THE PERMEABILITY OF X IRRADIATED DEOXYRIBONUCLEOPROTEIN MONOLAYER AND OF THE MONOLAYER PREPD. FROM X IRRADIATED DEOXYRIBONUCLEOPROTEIN HAS BEEN EVALUTED IN A MODEL SYSTEM. SUBSTRATE (1.4 TIMES 10 PRIME NEGATIVE3 M METHYLENE BLUE IN 2M NAOL AND 5.3 TIMES 10 PRIME NEGATIVE2 M ASCORBIC ACID) WAS SEPD. FROM AN AQ. SOLN. CONTG. H SUB2 O SUB2 BY THE DEOXYRIBONUCLEOPROTEIN MONOLAYER. THE PERMEABILITY WAS EVALUATED ACCORDING TO THE COLORING OF THE SUBSTRATE. THE IRRADN. OF THE MONOLAYER BY A DOSE OF 2 OR 3.5 KR INCREASED THE PERMEABILITY BY 40PERCENT OR 70PERCENT, RESP.; THE BARRIER EFFECT OF THE MONOLAYER DISAPPEARED COMPLETELY AFTER IRRADN. WITH 5 KR. CHANGES OF THE PERMEABILITY OF MONOLAYERS PREPD. FROM THE IRRADIATED DEOXYRIBONUCLEOPROTEINS WERE NOTED ONLY AT HIGH DOSES; DOSES OF 5 TIMES 10 PRIMES AND 10 PRIME6 K INCREASED THE PERMEABILITY BY 28PERCENT AND 33PERCENT, RESP.

FACILITY: INST. BIOKHM. IM. BAKHA, MOSCOW, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--ON AUXILIARY EQUIPMENT OF DEPARTMENTS OF RADIUM THERAPY -U-  
AUTHOR--(03)-NIKULIN, YU.P., RATNER, T.G., BIBERGAL, A.V.  
COUNTRY OF INFO--USSR  
SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 5, PP 38-40  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--RADIUM, RADIOTHERAPY, IRRADIATION DOSIMETRY/(U)DIK DOSIMETER,  
(U)DMA DOSIMETER  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1998/0273 STEP NO--UR/0241/70/015/005/0038/0040  
CIRC ACCESSION NO--AP0120962  
UNCLASSIFIED

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PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120962

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER SETS FORTH THE EQUIPMENT  
REQUIRED FOR DOSIMETRIC PREPARATION AND INSTITUTION OF RADIUM THERAPY.  
A DESCRIPTION IS GIVEN OF THE DESIGNED DOSIMETERS, INTEGRAL CONDENSATOR  
DOSIMETER "KIK" AND "DM-A" POWER DOSIMETER, AS WELL AS SET OF WATER AND  
TISSUE EQUIVALENT PHANTOMS. FACILITY: INSTITUT OBSHCHEY  
GENETIKI AN SSSR, MOSCOW.

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AA 0044279

NIKULIN

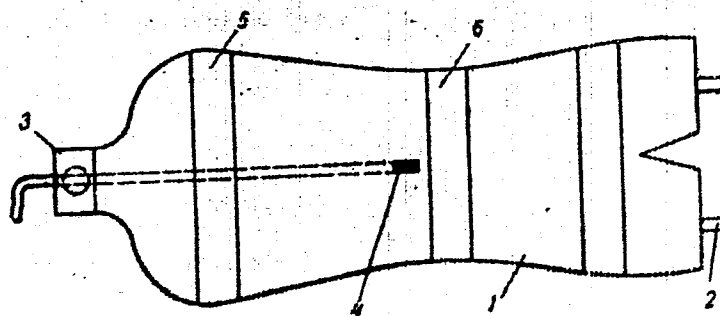
Yn P

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

243743 PHANTOM for determination of gamma exposure dose is a watertight elastic bag in the shape of a man of average height, with a water inlet and outlet. An ionization chamber can be introduced to any desired point through a joint at the top. Breast, waist and hips can be adjusted to various sizes by belts which can be tightened.

8.2.62 as 763390/31-16.A.B.RIBERGAL et al.(28.7.69)  
Bul 17/14.5.69. Class 21g. Int.Cl.H 05g.



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AA0044279

AUTHORS: Bibergal', A. V., Nikulin, Yu. P., Ratner, T. G.

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USSR

UDC: 621.317.335.3

YATSYNINA, N. L., NIKULINA, N. A.

"Problems in the Production and Certification of Standard Specimens of Dielectrics"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 116-117 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A362)

Translation: Basic requirements to be met by standard specimens of dielectrics used in studying the electromagnetic parameters of radio engineering materials are formulated. Of fundamental importance is the requirement for constancy of these parameters, i. e. their independence of frequency, temperature, etc. The material which best satisfies this requirement is quartz. The six other materials which are recommended are somewhat poorer than quartz. Bibliography of three titles. E. L.

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1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--USE OF THE METHOD OF CROSS SECTIONS TO STUDY THE TWO PHASE LIQUID  
STATE IN CONDENSED FOUR COMPONENT SYSTEMS -U-  
AUTHOR--(03)--MERTSLIN, R.V., KAMAEVSKAYA, L.A., NIKURASHINA, N.I.  
COUNTRY OF INFO--USSR  
SOURCE--Zh. Fiz. Khim. 1970, 44(1), 79-82  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--PHASE EQUILIBRIUM, FLUID STATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3005/0007 STEP NO--UR/0076/70/044/001/0079/0082  
CIRC ACCESSION NO--AP0132307  
UNCLASSIFIED

2/2 011  
CIRC ACCESSION NO--AP0132307 UNCLASSIFIED PROCESSING DATE--20NOV70  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GENERAL GRAPHICAL METHOD FOR THE  
DETN. OF THE COMPN. OF EQUIL. PHASES IS DESCRIBED. FACILITY:  
SARATOV. GDS. UNIV. IM. CHERNYSHEVSKOGO, SARATOV, USSR.

UNCLASSIFIED



USSR

UDC 778.37

VANYUKOV, M. P., YEVDOKIMOV, S. V., ~~NILOV, YE. V.~~, and CHERTKOV, A. A.

"A Laser With Periodic Modulation of Quality for High-Speed Filming"

Moscow, Kvantovaya Elektronika, No 3, 1971, pp 108-110

Abstract: This brief article examines a laser which emits individual series of light pulses at a wavelength of 530 nm at a repetition frequency of the pulse train of 15 kHz. The authors examine the design of a quality modulator of a master oscillator operating on neodymium glass. They describe the theoretical circuit of the radiation converter and cite the results of testing the oscillator. Figure 1 shows the master oscillator operating at a wavelength of 1060 nm and describes the operating elements. The quality modulator is an optico-mechanical system consisting of rotating rectangular prisms. The radiation frequency converter operates in visible radiation, since the photographic film used has a comparatively low sensitivity in the infrared band. The supply unit consists of 20 condensers, 100  $\mu$ f each, and 20 inductance coils of 40  $\mu$ h. This supply source ensures laser operation at a repetition frequency of 1/60 Hz. The required power does not exceed 500 w. The authors found that the radiation has the form of ordinary gigantic pulses from the laser. Their duration is 40-50 nsec and the scatter in amplitudes of the

USSR

VANYUKOV, M. P., et al., Kvantovaya Elektronika, No 3, 1971, pp 108-110

pulses does not exceed 20-25% for the first 10-12 pulses. With a pumping energy of 2000 J the total energy of the series of 30 pulses comprised 16 J at a wavelength of 1060 nm. After converting the radiation to the second harmonic, the total energy of the series of light pulses was 2.1 J at a wavelength of 530 nm. The authors mention that the frequency of pulse repetition obtained in the series is not maximal for equipment of this type. With increase in frequency, the efficiency of such an oscillator is improved and tends toward the value of the efficiency in a mode of free oscillation. The article contains 2 figures and a bibliography of 6 entries.

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USSR

UDC 632.4:582.285.2:633.11

NILOVA, V. P. and KSENOVA, E. N., All-Union Institute of Plant Protection,  
Leningrad

"Effect of Vitavax on Catalase Activity and Susceptibility of Wheat to Brown  
Rust"

Leningrad, Mikologiya i Fitopatologiya, No 4, 1972, pp 355-358

Abstract: The fungicide vitavax (5,6-dihydro-2-methyl-1,4-oxathiin-3-carboxanylid) is effective against brown rust of wheat because it lowers catalase activity in the plant. High catalase levels promote and prolong uredospore viability. Spraying a 0.5% solution on 7-day-old shoots of healthy plants reduced catalase activity for 2 weeks. When applied to the Saratovskaya 29 wheat variety (which is normally susceptible to wheat rust) several days before the plants were inoculated with *Puccinia triticina* Eriks. uredospores, the fungicide had a prophylactic action. When applied to the plants 2 days after they were infected, it had a therapeutic effect, judging by the marked decrease in catalase activity and absence of pustules, which were found on the control (untreated) shoots.

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