

Ecology

USSR

UDC 577.486:581.5

ALEKSANDROVA, V. D., Institute of Botany imeni V. L. Komarov,
Academy of Sciences USSR, Leningrad

"The Objects of Biogeocoenology"

Leningrad, Botanicheskiy Zhurnal, Vol 56, No 9, Sep 71, pp 1225-
1238

Abstract: Biogeocoenology should be differentiated from other sciences which study the earth's exterior shell (the geosphere) such as physical geography (landscape science, general geography), biogeochemistry, landscape physics, biocoenology, phytocoenology, and such.

Biogeocoenology examines the functioning of the biogeocoenotic shell of the earth, the phytogeosphere and the vitasphere, and the latter's subdivisions, biogeochores and ecosystems. A biogeocoenosis is, according to Sukhanov, an elementary chorologic unit of the biogeocoenotic shell which is spatially limited to the area of one phytocoenosis. However biogeocoenoses may be

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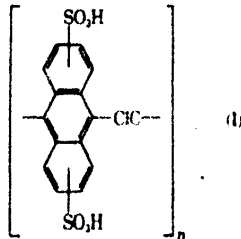
Acc. Nr:
AP0052503

Abstracting Service:
CHEMICAL ABST. 5-70 **A**

Ref. Code:
4R0460

3

101323z **Synthesis and properties of new aromatic polymers.** Paushkin, Ya. M.; Komissarov, V. I.; Lunin, A. F.; Aleksandrova, V. A.; Oganesov, S. S.; Meshcheryakov, S. V.; Shtromov, V. N. (Inst. Neftekhim. Gazov. Prom. im. Gubkina, Moscow, USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(1), 53-6 (Russ). The heteropolycondensation of Na_2C_2 with *o*-, *m*-, and *p*- $\text{C}_6\text{H}_4\text{Cl}_2$ and $\text{C}_6\text{H}_4\text{Br}_2$, 1,4- $\text{C}_{10}\text{H}_6\text{Br}_2$ and 1,5- $\text{C}_{10}\text{H}_6\text{Br}_2$, and 9,10-dibromoanthracene in $\text{C}_{16}\text{H}_{34}$ was studied under Ar at 200-87°. The most reactive monomers were the *o*-dibromo derivs. The polymers were brown to black powders stable at up to 300-400°, having an elec. cond. in the range of 10^{-7} - 10^{-12} (ohm cm)⁻¹. The polymers were readily nitrated, sulfonated, and aminated; e.g.



sulfonation with fuming H_2SO_4 gave heat resistant (to 300°) cation exchange resins I of high exchange capacity. CKJR

REEL/FRAME

19821144

2/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0138201
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHASE DIAGRAMS OF REOCL SUB4 A (A
EQUALS FECL SUB3, RECL SUB5, TAOL SUB5, NBCL SUB5, ALCL SUB3, MOOCL
SUB4, AND POCL SUB3) ARE CONSTRUCTED. THE BINARY SYSTEM CONTG. POCL
SUB3 FORMS REOCL SUB4 POCL SUB3, CONGRUENTLY M. 80DEGREES. THIS
COMPOUND FORMS EUTECTICS CONTG. 3 AND 80 MOLE PERCENT REOCL SUB4, M.
NEGATIVE 10 AND 16DEGREES, RESP. THE REMAINING SYSTEMS FORMED ONE
EUTECTIC EACH CONTG. ALMOST PURE REOCL SUB4 AND ALL M. 29DEGREES.
FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL IM. LOMONOSOVA, MOSCOW,
USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--RHENIUM OXYCHLORIDE ALUMINUM CHLORIDE ,FERRIC CHLORIDE, TANTALUM,V,
CHLORIDE, NIOBIUM,V, CHLORIDE, MOLYBDENUM OXYCHLORIDE, PHOSPHORYL
AUTHOR--(04)-DROBOT, D.V., KORSHUNOV, B.G., ALEKSANDROVA, V.A., SILINA,
T.A.
COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(6), 1707-8 *A*

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE DIAGRAM, CHEMICAL BINARY SYSTEM, OXYGEN COMPOUND,
RHENIUM COMPOUND, CHLORIDE, IRON COMPOUND, MOLYBDENUM COMPOUND, TANTALUM
COMPOUND, NIOBIUM COMPOUND, ALUMINUM COMPOUND, PHOSPHOROUS COMPOUND,
EUTECTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/1186

STEP NO--UR/0078/70/015/006/1707/1708

CIRC ACCESSION NO--AP0138201

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117917

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

ABSTRACT. INVESTIGATIONS INCLUDED CUTANEOUS SCARIFICATION TESTS IN WORKERS OF COTTON AND FLAX SPINNING MILLS, ANAPHYLAXIA WITH DESENSITIZATION EXPERIMENTS IN GUINEA PIGS, ALONG WITH STAGING OF INTRADERMAL AND SCARIFICATION TESTS IN SENSITIZED ANIMALS, WHEREFROM THE FOLLOWING INFERENCES ENSEW: 1. INDUSTRIAL DUST OF COTTON AND FLAX SPINNING MILLS IS AN ALLERGEN; 2. POSITIVE SKIN TESTS ARE RECORDED NOT ONLY IN PATIENTS WITH IMPAIRED BRONCHOPULMONARY SYSTEM BUT ALSO IN PRACTICALLY HEALTHY SUBJECTS, WHICH, APPARENTLY, IS INDICATIVE OF A LATENT NATURE OF THE ALLERGY; 3. ANTIGENIC PROPERTIES OF THE INDUSTRIAL DUST ARE DUE TO THE PRESENCE THEREIN OF BACTERIA AND FUNGI; 4. THERE IS AN AFFILIATION BETWEEN THE DUST GENERATED AT COTTON AND FLAX SPINNING MILLS, CONDITIONED BY THE HOMOGENEITY OF THE FUNGAL AND BACTERIAL FLORA. FACILITY: MEDITSINSKIY INSTITUT, ALLERGOLOGICHESKAYA LABORATORIYA AMN INSTITUT GIGIYENY TRUDA I PROFZABOLEVANIY AMN SSSR.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ALLERGENIC PROPERTIES OF THE COTTON AND FLAX SPINNING MILLS DUST
-U-
AUTHOR--(03)-FETISOVA, A.A., TITOVA, S.M., ALEKSANDROVA, O.G.
COUNTRY OF INFO--USSR
SOURCE--GIGIYENA TRUDA I PROFESSIONAL'NYYE ZABOLEVANIYA, 1970, NR 5, PP
19-22
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--TEXTILE INDUSTRY, NATURAL FIBER, DERMATITIS, ALLERGIC DISEASE,
ANAPHYLAXIS, INDUSTRIAL MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0692 STEP NO--UR/0391/70/000/005/0019/0022
CIRC ACCESSION NO--AP0117917
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130167

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CURVES OF RII PRIME POSITIVE MARKER SURVIVAL (IN PHAGE T4 TRANSFORMED BY UV IRRADIATED DONOR DNA) HAVE BEEN INVESTIGATED IN EXPTS. PERFORMED IN ESCHERICHIA COLI B SPHEROPLASTS. FOR ALL THE DELETIONS STUDIED, THESE CURVES SHOW A RAPID DROP AT LOW UV DOSE FOLLOWED BY A LINEAR REGION. EXTRAPOLATION OF THE STRAIGHT LINE REGION TO ZERO UV DOSE INDICATES THAT ABOUT HALF OF THE R PRIME POSITIVE RECOMBINANTS ARE DESTROYED AT LOW DOSE, WHILE THE OTHER HALF IS MUCH MORE RESISTANT TO UV AND REPRESENTS A DISTINCT CLASS OF R PRIME POSITIVE RECOMBINANTS. THE DONOR MOLLS., WHICH FIRST COMBINE WITH THE NONIRRADIATED PHAGE RECIPIENT, ARE LATER INCORPORATED IN THE RAPIDLY DELETED RII PRIME POSITIVE MARKERS (EXPTS. WITH DELETION 164). COMPARISON BETWEEN THE SIZE OF DONOR DNA MOLLS. AND THEIR SENSITIVITY TO UV INDICATES THAT THE REGION OF PAIRING OF DONOR AND ACCEPTOR MOLLS. IS 800-900 NUCLEOTIDES LONG. FACILITY: INST. GEN. GENET., MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--GENETIC ANALYSIS OF ULTRAVIOLET LESIONS OF PHAGE TRANSFORMING DNA
R11 PRIME POSITIVE MARKERS. I. SIZE OF THE REGION FOR THE HOMOLOGOUS
AUTHOR--(03)-ALEKSANDROVA, N.M., VARTANYAN, R.G., VINETSKIY, YU.P.
COUNTRY OF INFO--USSR A
SOURCE--GENETIKA 1970, 6(3), 97-109
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DNA, UV RADIATION BIOLOGIC EFFECT, ESCHERICHIA COLI, CELL
PHYSIOLOGY, MOLECULAR STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/1139 STEP NO--UR/0473/70/006/003/0097/0109
CIRC ACCESSION NO--AP0130167
UNCLASSIFIED

USSR

UDC 542.91 + 661.718.1

NESTEROV, L. V., and ALEKSANDROVA, N. A., Institute of Organic and Physical Chemistry imeni A. Ye. Arbusov, Academy of Sciences USSR

"Dialkyldialkoxyphosphonium Salts"

Moscow, Izvestiya Akademii Nauk, Seriya Khimicheskaya, No 2, Feb 71, pp 415-416

Abstract: Dialkyldialkoxyphosphonium salts were obtained by treatment of dialkyl alkylphosphonites with equimolar quantities of alkyl halides in ether at 0°C. The most stable of these salts were those with branched alkoxy chains. n-Alkoxy salts were not isolated even though their formation was noted. The alkoxy substituents could be arranged in order of stability:

neo-C₅H₁₁ iso-C₄H₉ iso-C₃H₇ n-C₄H₉ C₂H₅.

Stability is due to steric hindrance of the attack of the halide anions on the isoalkoxy groups.

2/2 019

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PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0129056

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEX HEALTH RESORT TREATMENT INCLUDING HEXONIUM ELECTROPHORESIS RESULTED IN MOST CASES IN REDUCTION OF THE ARTERIAL PRESSURE. AN IMPROVEMENT OF THE PATIENTS CONDITION WAS OBSERVED IN 98.8PERCENT. THE EXPEDIENCY IS CONCLUDED OF INCLUSION OF HEXONIUM ELECTROPHORESIS IN THE COMPLEX OF HEALTH RESORT TREATMENT OF PATIENTS WITH HYPERTENSIVE DISEASE (STAGES I AND II). FACILITY: YALTINSKOGO TERRITORIAL'NOGO SOVETA PO UPRAVLENIYU KURORTAMI PROFSOZUZOV.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EXPERIENCE WITH HEXONUM ELECTROPHORESIS IN HEALTH RESORT TREATMENT
OF PATIENTS WITH HYPERTENSIVE DISEASE -U-
AUTHOR--(05)-NEDOSTUPOV, S.P., ALEKSANDROVA, K.M., MERKULOVA, YE.YU.,
VAKHNOVSKAYA, D.I., ZYKIN, N.N.
COUNTRY OF INFO--USSR
SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 73-75 A
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ELECTROPHORESIS, HYPERTENSION, BLOOD PRESSURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1686 STEP NO--UR/0475/70/000/004/0073/0075
CIRC ACCESSION NO--AP0129056
UNCLASSIFIED

ALEKSANDROVA, I. V.

radiation biology

COLEEN

SO:SPRS 55100

04 FEB 72

IDC 582.264.45.057:629.78.048

EFFECT OF SPACEFLIGHT CONDITIONS ON A CHLORELLA CULTURE

Article by I. B. Galikina and I. V. Aleksandrova, Moscow, Kosmicheskaya Biologiya i Meditsina, Burestan, Vol 5, no 9, 1971, submitted for publication 29 July 1971, pp 39-41

Abstract: A Chlorella culture exposed without illumination aboard the Kosmos-368 artificial earth satellite was examined. The postflight study of the cells and their subsequent cultivation in agarized and liquid media gave evidence that the flight induced no significant changes in cell morphology and photosynthetic activity.

Limited information on the influence of spaceflight conditions on Chlorella can be found in studies by V. Ye. Semenenko and M. G. Vladimirova (1962), E. N. Vaulina, et al., V. Shevchenko, et al., and also by Balban. Most of the studies are devoted to the viability of Chlorella cells, subsequent sporulation, and the frequency of mutations. Reliable changes were not found on the basis of these indices.

Only V. Ye. Semenenko and M. G. Vladimirova (1961, 1962) studied the photosynthetic activity of cells after a 24-hour flight on the second space satellite. Immediately after return to earth no morphological changes were detected in cells of an agar culture; during subsequent cultivation they exhibited a high photosynthetic activity. The liquid culture contained a large number of destroyed and bleached cells. During the first period of cultivation their photosynthetic activity was reduced but was restored during the 6-day cultivation process.

In the light of these data it was of interest to continue investigation of the photosynthetic activity of algal cells after more prolonged exposure to spaceflight factors; this was done during flight of the Kosmos-368 artificial earth satellite.

Chlorella (Chlorella pyrenoidosa Sp.) cells were sown in individual sectors on a solid agarized Tamlya medium in special capsules assembled into

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UDC 582.263:578.082

IVANTOV, YE. A., and ALEKSANDROVA, I. V., Institute of Medical Biological Problems, Moscow

"Dynamic Properties of a Chlorella Culture as an Object of Automatic Control by Illumination Intensity"

Moscow, Zhurnal Obshchey Biologii, Vol 32, No 2, Mar/Apr 71, pp 208-216

Abstract: An experimental study was performed to determine the intensity of photosynthesis by Chlorella cultures illuminated with light of various intensities. The object of interest was the possible use of a biological system for the regeneration of air in a closed chamber. A quantitative correlation was found to exist between intensity of photosynthesis on the one hand and intensity of illumination, density of the Chlorella suspension, and the speed of its circulation in the experimental apparatus, on the other. After each abrupt change in illumination, most Chlorella cultures (97%) went through a transitory stage of about 3 minutes during which the rate of photosynthesis swung in the opposite direction before reaching a new steady state. For this reason, the Chlorella culture was defined as an inertial system with delayed responses. On the basis of the findings, a method of enhancing the automatic control of Chlorella photosynthesis by illumination intensity was suggested.

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PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126121

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ORIENTATION MOBILITY OF THE POLAR GROUPS OF THE FERROELEC. $\text{NaNH}_2\text{SO}_4 \cdot 2\text{H}_2\text{O}$ WAS INVESTIGATED IN A BROAD TEMP. INTERVAL AND THE POSITION OF THE PROTON PROTON VECTORS OF WATER MOLS. IN THE 2 PHASES WAS DETD. BY PMR. THE INVESTIGATED CRYSTAL, AS WELL AS AMMONIUM SULFATE AND FLUOROBERYLLATE, IS A FERROELEC. WITH A HIGH ORIENTATION MOBILITY OF AMMONIUM GROUPS BELOW THE CURIE POINT. THE POSSIBILITY WAS CONSIDERED OF THE EXISTENCE OF A TIME AVERAGED CONST. DIPOLE MOMENT OF THE DISTORTED AMMONIUM GROUP WHICH REORIENTS RELATIVE TO LARGER THAN 1 SYMMETRY AXIS. THE POLAR WATER MOLS. DO NOT CONTRIBUTE TO POLARIZATION. FACILITY: INST. FIZ., KRASNUYARSK, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--FERROELECTRICS WITH ORIENTATIONAL MOBILITY OF AMMONIUM GROUPS M
PRIMEI NH SUB4 2X SUB4 TYPE COMPOUNDS -U-
AUTHOR-(03)-ALEKSANDROVA, I.P., ALEXSANDROV, K.S., KRUPNAYA, V.P.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERG. TELA 1970, 12(4), 1024-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--AMMONIUM COMPOUND, FERROELECTRICITY, PROTON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0366

STEP NO--UR/0181/70/012/004/1024/1029

CIRC ACCESSION NO--AP0126121

UNCLASSIFIED

USSR

UDC 621.762.2:669.296

KOZLOV, A. N., DUBININ, G. N., ALEKSANDROVA, I. F., KRAVETSKIY, G. A., RUZIKOV, L. P., SLOBODCHIKOVA, R. I.

"Optimization of the Processes of Obtaining Spherical Zirconium Powder by Plasma Atomization of Wire using Mathematical Statistics"

Tr. Mosk. aviats. in-ta (Works of Moscow Aviation Institute), 1971, vyp. 228, pp 130-138 (from RZn--Metallurgiya, No 4, Apr 72, Abstract No 46401)

Translation: The optimal conditions of plasma atomization of Zr-wire to obtain spherical powder with a particle size of 400-800 microns sufficiently pure with respect to N_2 and O_2 (with a granule microhardness $\leq 300-500$ kg/mm²) are defined.

When processing the experimental data, the ranging method was used. A vacuum plasma atomization device was designed and manufactured for obtaining spherical powders of chemically active refractory metals. The optimal conditions of the Zr atomization process are as follows: current 500 ± 60 amps, argon flow rate 3.2 m³/hour, rarefaction in the chamber 400 mm Hg, spacing between the wire and the nozzle section 0.5 mm. The yield of the Zr powder fraction 400-800 microns in size is 60%. 5 illustrations, 3 tables, and a 13-entry bibliography.

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USSR

UDC 541.127 + 542.938 + 661.718.1

BEL'SKIY, V. YE., ANDREYEVA, L. S., ALEKSANDROVA, I. A.,
VINOKUROVA, G. M., Institute of Organic and Physical Chemistry
imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Kinetics of the Hydrolysis of Alkyl-bis-(γ -chloropropyl)-
phosphinates"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6,
Jun 70, pp 1418-1419

Abstract: The kinetics of hydrolysis in water and sodium hydroxide solution of several bis-(γ -chloropropyl)-phosphinic acid esters was studied and compared with corresponding bis-(chloromethyl)-phosphinates. It was determined that the γ -chloropropyl compounds are hydrolyzed faster in water and much slower in alkaline medium in comparison to their chloromethyl counterparts. The ratio of rate constants for these esters decreases with an increase in the length and branching of the alcohol radical during alkaline hydrolysis, while the opposite is true for aqueous hydrolysis. This phenomenon agrees with the assumption that the chlorine in the γ -position catalyses intramolecularly the reaction with water.

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USSR

UDC 542.995:546.182.5-36

ALEKSANDROVA, I. A., and UFIMTSEVA, L. I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Addition Reactions of Hypophosphorous Acid Derivatives to Unsaturated Compounds"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 71, pp 1315-1316

Abstract: For a study of the addition reaction of sodium hypophosphite to unsaturated compounds, the authors staged addition reactions of sodium hypophosphite to allyl cyanide and allyl acetate. Chlorination of the reaction products with PCl_5 in CCl_4 yielded β -acetoxypropylphosphonic acid chlorides. The reaction of sodium hypophosphite with allyl cyanide yielded only β -cyanopropylphosphonic acid chloride. Butyl hypophosphite reacts with allyl alcohol to give β -chloropropylphosphonic acid chloride and bis-(β -chloropropyl)phosphonic acid chloride, and reacts with allyl acetate to give butyl ester of bis-(β -acetoxypropyl)phosphonic acid.

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USSR

UDC 542.91:547.1'118

KHAYRULLIN, V. K., DMITRIYEVA, G. V., ALEKSANDROVA, I. A., and VASYANINA, M. A., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Kazan' Branch of the Academy of Sciences USSR

"A New Synthetic Method for Bifunctional Oxides of Tertiary Phosphines"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 12, Dec 73, pp 2744-2749

Abstract: Reacting mixed chlorophosphines containing one functional group with α, β -unsaturated acids or their amides leads to the formation of tertiary bifunctional phosphine oxides with functional groups C=N, COOH, COCl, COOR, etc. Hydrolysis of the ethyl-bis-(β -cyanoethyl)phosphine oxide yields ethyl-bis-(β -carboxyethyl)phosphine oxide.

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UR 0482

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Soviet Inventions Illustrated, Section I Chemical, Derwent,

238024 ELECTRICAL CONTACTS have their transient resistance reduced by heating them after degreasing, under a high vacuum at 400-1000°C for 5-2hrs, after which the temp. is lowered to 50-200°C and maintained for not more than 8 hrs. at a pressure of not less than 0.5 atm. in the same gas medium in which the contacts are intended to operate. 23.1.67. as 1128391/24-7. A.M. LEPSKIY et al Leningrad Industrial Union "Krasnaya Zarya". (11.7.69.) Bol.9/20.2 69. Class 21g, 71c. Int.Cl. H02c. H01h.

LD 4

AUTHORS: Lepskiy, A. M.; Karandina, V. A.; Vasil'yav. A. M.;
and Aleksandrova, G. F.

Leningradskoye Proizvodstvennoye Ob"edineniye "Krasnaya Zarya"

19740021

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UDC 621.315.592:546.19'681

ALEKSANDROVA, G. A., MALYSHEV, V. A., TERESHKO, G. N., TSAREVSKAYA, T. P.

"Electrical Properties of Epitaxial Layers of Gallium Arsenide"

V sb. Arsenid galliya. (Gallium Arsenide -- Collection of Works), Vyp. 2, Tomsk, Tomsk University, 1969, pp 55-58 (from RZh-Elektronika i yeye primeneniye, No 4, Apr 70, Abstract No 4500)

Translation: Experimental data are cited on the dependence of the electrical parameters of epitaxial layers of gallium arsenide obtained by a fusion of Ga and $AsCl_3$, on the orientation of the plane of growth. Good agreement is displayed between the experimental temperature dependence of the mobility of carriers (with any concentration of free carriers) and with a theoretical calculation which assumes the presence in the specimens of a neutral impurity with a concentration of $(5 \div 9) \cdot 10^{15}$ atom \cdot cm^{-3} . 12 ref. Summary.

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UDC 621.382.2

~~ALEKSANDROVA, G.A.~~, YEFIMOV, V.I., YEMEL'YANOV, A.V.

"Gunn Effect Planar Devices"

V sb. Arsenid galliya (Gallium Arsenide--Collection Of Works), Issue 3, Tomsk, Tomsk University, 1970, pp 263-265 (from RZh--Elektronika i yeye primeneniye, No 3, March 1971, Abstract No 3B147)

Translation: The design, technology, and principal parameters are described of Gunn planar semiconductor diodes. An output power of 125 mwatt with an efficiency of 1.5-percent at a frequency of 1200 MHz was obtained. 2 ill. 4 ref. B.M.

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USSR

UDC 621.315.592

ALEKSANDROVA, G. A., VIL'KOTSEY, V. A., DONANEVSKIY, D. S., TRACHEV, V. D.

"Cathode Luminescence of Epitaxial Gallium Arsenide"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 311-315

Abstract: The edge and impurity (1.5-0.35 electron volts) cathode luminescence spectra of gas epitaxial layers of gallium arsenide of different degrees of perfection were investigated. The variations in the spectral distribution of the cathode luminescence and the relative intensity of the individual emission bands were analyzed as functions of the current carrier mobility. With a decrease in mobility the intensity of the edge cathode luminescence decreases. Redistribution of the intensity between the radiation peaks at 0.8 and 0.56 electron volts accompanied by a shift of the 0.56 electron volt band to the 0.63 electron volt region is observed. The causes of the observed variations are discussed.

The properties of epitaxial GaAs are determined only by the concentration of the oxygen participating in the formation of the crystal defects. One of the factors determining the concentration of this "structurally active" oxygen can be total perfection of the substrate material. Good correlation is always observed between the cathode luminescence spectra of the films and the substrate.

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UDC 621.315.592

Aleksandrova G. A., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 983-984

investigated range of 77-300°K, the electron concentration decreased by no more than two times with a reduction in temperature. The cathode luminescence spectra of the films with the reduced values of μ are characterized by the fact that in the spectra a band must occur with a peak at 0.62-0.6 electron volts comparable to or significantly exceeding the 0.8 electron volt band ascribed to chromium. From an analysis of the cathode luminescence spectra of the films with different values of μ at 300 and 77° K it was found that the absolute value of μ decreases by two orders as the peak of the 0.56 electron volt band shifts to the short-wave side to 0.64 electron volts. This extraordinary behavior of the mobility is attributed in part to the oxygen atoms.

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USSR

UDC 621.315.592

Aleksandrova, G. A., Vil'kotskiy, V. A., Kornilov, B. V., Marcoukov, L. V.,
Skvortsov, I. M.

"Anomalies in the Magnitude and Temperature Dependence of the Electron Mobility
in Epitaxial Layers of Gallium Arsenide"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 983-984

Abstract: A study was made of the anomalies in the magnitude and temperature dependence of the electron mobility detected in the epitaxial layers of n-type GaAs which cannot be explained by the mechanism of scattering on the polar lattice vibrations, on ionized or neutral centers and the space charge regions of the microinhomogeneities. The anomalies were detected in a group of films which was characterized by low mobility at 300°K. The films were grown from the gas phase in the Ga-AsCl₃-H₂ system on semi-insulating GaAs substrates alloyed with chromium and oriented with respect to the (100) plane. The characteristic curves for the anomalous function $\mu = f(K)$ and the cathode luminescence spectra of the films with different mobilities are plotted. The carrier concentration in the films at 300°K measured by the Van der Pauw method [Phil. Res. Rep., No 13, 1, 1958] was $2 \cdot 10^{15} - 2 \cdot 10^{17} / \text{cm}^{-3}$, and the mobilities were within the limits of $150 \leq \mu \leq 2000 \text{ cm}^2 / \text{volt} \cdot \text{second}$. In the

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USSR

UDC 621.52:63.59

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

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

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

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

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123289

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRACTICAL RECOMMENDATIONS ARE GIVEN FOR DIRECT COPPERING OF ALUMINUM AND ALUMINUM BASED ALLOYS. REASONS FOR POSSIBLE SPILAGE ARE INDICATED AND MEANS FOR THEIR ELIMINATION ARE GIVEN.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DIRECT COPPERING OF ALUMINUM AND ALUMINUM BASED ALLOYS -U-

AUTHOR--(04)--LUKUMSKIY, YU.YA., ALEKSANDREVA, A.N., TIKHOMIROVA, G.S.,
KUPTEVA, K.V.
COUNTRY OF INFO--USSR

SOURCE--KIEV, TEKHNLOGIYA I ORGANIZATSIYA PROIZVODSTVA, NO 1, 1970, PP
73-75
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALUMINUM ALLOY, ALUMINUM BASE ALLOY, BIBLIOGRAPHY, COPPER
PLATING, METAL COATING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY RELL/FRAME--1999/1331

STEP NO--UR/0418/70/000/001/0073/0075

CIRC ACCESSION NO--AP0123289

UNCLASSIFIED

USSR

UDC: 681.3.06:51

SMIRNOVA, T. N., ALEKSANDROVA, A. A., RYBAKOVA, Yu. V., SOLOV'YERVA, N. A."The PRORAB $\Pi_1(P, \nu)$ M-20 Computer"

Zap. nauchn. seminarov Leningr. otd. Mat. in-ta AN SSSR (Notes of the Scientific Seminars of the Leningrad Department of the Mathematics Institute of the Academy of Sciences of the USSR), 1970, 18, pp 31-75 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V733)

Translation: The authors describe the PRORAB $\Pi_1(P, \nu)$ M-20 computer which can perform operations not only with algebraic and trigonometric polynomials of an arbitrary number of independent variables, but also with objects of another nature, in particular with "perforated" matrices and vectors. The elements of the $\Pi_1(P, \nu)$ M-20 are: 1) the base M-20 computer with a single operational memory array; 2) the PRORAB $\Pi_1(P, \nu)$; 3) a library of programs of operations which consists of two divisions: a division of programs of polynomial operations, and a division of programs of operations on "perforated" data blocks. The PRORAB $\Pi_1(P, \nu)$ program and a set of programs of operations on "perforated" data blocks are given in "M-20" computer codes. V. Mikheyev.

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USSR

UDC 616.936-07

DUKHANINA, N. N., SARIKYAN, S. Ya., ZIBKOVA, T. A., KHROMOV, A. S., and
ALEKSEYEVA, Z. M., Institute of Medical Parasitology and Tropical Medicine
imēni Ye. I. Martsinovskiy, Ministry of Health USSR

"Detection of Malaria Cases in the USSR Between 1967 and 1970"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 3, 1972,
pp 319-323

Abstract: Many malaria cases are not detected early due to some laxness in the system induced by the virtual eradication of the disease and by the inconvenience and costliness of running mass screening tests. Study of two groups of malaria patients and parasite carriers - local residents, including those who contracted malaria after receiving blood transfusions, and Soviet citizens returning from trips to Asia and Southeast Asia and foreign nationals - showed that the disease was not detected in most of the local residents until they sought care in a medical facility, only 40% (out of 234) doing so 1 to 5 days after the onset. The disease was detected earlier in the second group, mostly students, because they tended to visit a physician promptly. Some delays were occasioned by an absence of symptoms for a long time (6 to 12 months) owing to the protracted latent period of the causative agent.

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(2)

UDC 547.241

USSR

AZERBAYEV, I. N., DZHAYLAUOV, Yu. G., BOSYAKOV, K. B., YERCHANOV, K. B.,
SERIKBAYEV, K. S., and ALEKSEYEVA, N. N., Institute of Chemical Sciences,
Acad. Sc., KazSSR, Alma-Ata

"Reactions of Unsaturated Phosphites With Aldehydes and Ketones"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Khimicheskaya No 1,
Jan-Feb 73, pp 51-57

Abstract: Condensation of dipropargyl phosphite with chloral and bromal yields 0,0-dipropargyl (1-hydroxy-2,2,2-trichloroethyl)phosphonate and its tribromo analog even without any catalyst. In the presence of sodium alkoxide the reaction of diallyl phosphate with 2,5-dimethylpiperidone-4, 2,6-diphenylpiperidone-4, 2,6-di(2-hydroxyphenyl)-piperidone-4, 1,2,5-trimethylpiperidone-4 yields the respective 4-diallylphosphanepiperidoles-4; with 2,2-dimethyltetrahydropyranone-4, 2,2-dimethyltetrahydrothiopyranone-4 and 2,5-dimethyltetrahydrothiopyranone-4 the products are the respective 4-diallylphosphanetetrahydropyrans-4. The esters of α -hydroxyphosphinic acids of pyrone, and thiopyrone series are unstable, decomposing on distillation.

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Epidemiology

USSR

UDC 616.988.75-06:616.988.5]-053.8-036

ALEKSEYEVA, A. A., KETILADZE, Ye. S., KNYAZEVA, L. D., KRYLOV, V. F.,
GRUSHINSKAYA, I. A., ZHILINA, N. N., and STAKHANOVA, V. M., Clinical Department,
Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR
on the base of Clinical Infectious Disease Hospital No 82, Moscow

"The Course of Mixed Influenza-Adenoviral Infection in Adults"

Moscow, Klinicheskaya Meditsina, No 1, 1973, pp 101-105

Abstract: Of 1055 patients, age 16 to 78 admitted to the authors' hospital with respiratory symptoms during the 1969 and 1970 influenza A2-Hongkong epidemics, 158 (15%) were diagnosed after physical examination and laboratory tests as having a mixed influenza-adenoviral infection. About one-third of these had the clinical symptoms of adenoviral infection (toxicosis, headache, head cold, pain in the throat, cough, pharyngitis) along with the usual symptoms of influenza. In the other two-thirds, the disease proceeded asymptotically in the form of a virus carrier state or subclinically. The average duration of the above symptoms was much longer than in those suffering from influenza or adenoviral infection alone; pharyngitis persisted the longest. Systematic follow-up (2 years) of the patients with chronic adenoviral infection exacerbated by influenza confirmed the continued presence of adenoviruses even though the individuals felt well and exhibited no signs of inflammation of the respiratory tract.

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USSR

ALEKSEYEV, V. M., Analit. i Kachestven. Metody Teorii Differents. Uravneniy, Kiev, 1972, pp 13-21.

$$z(t, \omega) = \left(\sum_{k=1}^{\infty} \mu^k G_k(t, \omega) \right) \exp \left\{ t \sum_{s=1}^{\infty} \mu^s K_s \right\}, \text{ the solution is sought as}$$

while matrices K_s are selected specially, for example,

$$K_s = \lim_{t \rightarrow \infty} \frac{1}{t} \int_0^t MB_s(z, \omega) dz.$$

The determination of mean square stability is based on the transition to a system for the products of the coordinates of the solution $y(t, \omega)$ of system (1)

As an example, the stability is studied of the equation

$v(t, z)$ is a stable random process and $Mb(t, z) = 0$.

$$\ddot{y} + \lambda^2 y + \mu^2 b \dot{y} + \mu b(t, \omega) y = 0.$$

2/2

USSR

ALEKSEYEV, V. M.

"Study of a Linear System with Slight Random Perturbations of Its Parameters"

Analit. i Kachestven. Metody Teorii Differents. Uravneniy [Analytic and Qualitative Methods in the Theory of Differential Equations -- Collection of Works], Kiev, 1972, pp 13-21 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V101 by M. Benderskiy).

Translation: The following system is studied:

$$\dot{y} = [A + \mu B(t, \omega)] y, \quad y_0 = y_0(\omega), \quad (1)$$

where ω is a point in a probability space, A is a constant stable matrix, while $B(t, \omega)$ satisfies the conditions $\|MB(t, \omega)\| < \epsilon$, $\lim_{t \rightarrow \infty} \|MB(t, \omega)\|$ exists and a certain condition of weak mixing is satisfied. Sufficient conditions are produced for stability on the average and mean square of this system with small μ .

The approach is based on transition to the system

1/2

$$\dot{z} = \mu B_1(t, \omega) z, \\ z(t, \omega) = e^{-At} y(t, \omega), \quad B_1(t, \omega) = e^{-At} B(t, \omega) e^{At}$$

USSR

USSR

ALEKSEYEV, V. G.

"Estimate of the Spectrum of a Level-Quantized Gaussian Random Process"

Lit. Mat. Sb. [Lithuanian Mathematics Collection], 1972, Vol 12, No 2, pp 11-15 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V557 by the author).

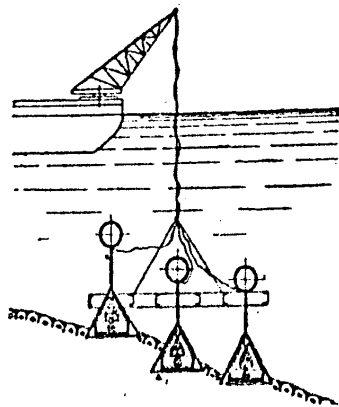
Translation: Estimates are studied of the spectral density of a Gaussian stable random process x_k , $k = 1, 2, \dots$, with mean 0 and dispersion σ^2 .

The additional bias of these estimates resulting from level quantization of process x_k is studied. Assuming that the quantization step q is small in comparison to σ , while the spectral density of process x_k is a function from class $Lip \alpha$, where $1/2 < \alpha \leq 1$, we prove that with a large sample volume the additional bias is approximately equal to $q^2/24\sigma$. 15 Biblio. Refs.

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USSR

DAVIDYANTS, G. P., BELEN'KIY, V. I., ET. AL., Otkrytiya Izobreneniya
Promyshlennye Obraztsy Tovarnyye Znaki, No 5, 1972, Patent No 469497.



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Industrial

USSR

DAVIDYANTS, G. P., BELEN'KIY, V. I., DAVIDYANTS, G. G., ALEKSEYEV, V. A.

"Device for Mining of Useful Minerals From Underwater Deposits"

Otkrytiya Izobreteniya Promyshlennye Obraztsy Tovarnyye Znaki, No 5, 1972,
Patent No 359397.

Translation: A device for mining of useful minerals from underwater deposits, having magnetic susceptibility, including a frame, working organs with electromagnets and hollow spheres, differing in that in order to assure better contact of the working organs with the uneven surface of the bottom, the working organs are connected to the hollow spheres by means of lines passing through apertures in the frame.

USSR

UDC 624.132.6:627.82.012.45(282.251.2)

ALEKSANDROVSKAYA, E. K., VASILEVSKAYA, L. A., GUSEV, Yu. N., URAKHCHIN,
V. P., Engineers

"Results of Natural-scale Observations of Shifting of the Krasnoyarsk
Dam and Its Rock Base"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 1, Jan. 1973, pp 17-23.

Abstract: Materials are presented from observations of the settling, horizontal shifting and tilting of the Krasnoyarsk Dam. The materials are analyzed. The measured displacements are used to determine the modulus of elasticity of the dam as a unit structure and the modulus of deformation of the rock base. The measured and calculated horizontal displacements are compared. Analysis and summarization of the materials of observation are used to produce a prediction concerning displacement of the top of the dam during its useful life. The extreme values of displacement can be looked upon in the first approximation as a criterion for safe operation of the structure, and the operating personnel can use them for further testing of the condition of the dam.

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USSR

UDC 542.91:547.1'118

ALEKSANDROVA, I. A., YARULLINA, I. I., and KHAYRULLIN, V. K., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of Vinyldichlorophosphine With Acrylic and Propiolic Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jan 72, pp 1386-1390

Abstract: For further elucidation of the effect of the phosphorus substituent in chlorophosphine on the intensity of the reaction with α , β -unsaturated acids, the authors studied the reaction of vinyldichlorophosphine with acrylic and propiolic acids. The reaction of vinyldichlorophosphine with acrylic acid, which is accompanied by initial nucleophilic attack by the phosphorus atom on the β -carbon atom of the acid, results in the formation of vinyl-(β -chloroformylethyl)phosphinic acid chloride (II). Hydrolysis of II gives vinyl-(β -carboxyethyl)phosphinic acid, the interaction of II with alcohol gives the ethyl ester. Heating of II with $(CH_3CO)_2O$ gives 2-vinyl-2,5-dioxo-1,2-oxaphospholane. Reaction of the latter with ethanol gives ethyl ester of vinyl-(β -carboxyethyl)phosphinic acid, with aniline vinyl-(β -phenylcarbamoyl)phosphinic acid. The reaction of vinyldichlorophosphine with propiolic acid gives vinyl-(β -chloroformylvinyl)phosphinic acid chloride, which could not be isolated in pure form.

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ALEK, SANDROVA, G.A.

2085 59203
6.73

VII-3. STUDY OF STRUCTURAL DEFECTS IN EPITAXIAL FILMS OF GALLIUM ARSENIDE
Article by G. F. Lymer', Ye. N. Dorshava, G. A. Aleksandrova, Moscow:
Novosibirsk, III Simpozium po Progressam Rosta i Formirovaniya
Kristallov i Plenok, Rusestan, 12-17 June, 1977, p. 89

The methods of chemical and ion pickling, raster electron microscopy, x-ray topography and microanalysis were used to investigate the structural defects in the substrates and the epitaxial films of gallium arsenide. The epitaxial films were grown from the vapor phase by the chloride process.

The studies demonstrated that in substrates of semi-insulating gallium arsenide strongly alloyed with tellurium, in addition to the high dislocation density ($\sim 10^8-10^9 \text{ cm}^{-2}$) there is significant density of the separations of the second phase ($\sim 10^5-10^6 \text{ cm}^{-2}$). The defect density in the epitaxial layers is 1-2 orders lower than in the substrates. The heat treatment of the substrates and the epitaxial films in arsenic vapor at 720°C leads to significant variation of the etching patterns, especially on the epitaxial layers.

The experimental data are discussed.

ALEKSANDROVA, G. A.

JPRS 59263
C-73

V-3b. GAS ETCHING OF GALLIUM ARSENIDE BY HYDROGEN CHLORIDE WITH THE ADDITION OF GaCl TO THE GAS PHASE

Article by G. A. Aleksandrova, S. A. Medvedev, I. M. Skvortsov, Moscow, Novosibirsk, III Sbornik Poluprovodnikov, 1972, p. 531
Kriszallov 1 plene, Russian, 12-17 June, 1972, p. 531

The possibility of realizing the polishing mode of gas etching of gallium arsenide plates by hydrogen chloride was demonstrated experimentally in a flow system on introduction of GaCl into the etching gas mixture. The analysis of the experimental results shows that under the conditions of diffusion control of the process rate, polishing etching takes place in those cases where no arsenic atoms accumulate on the etching surface, that is, the Ga/As ratio in the gas phase is close to one.

ALEKSANDROVA, G.A.

3 PPS 592 CS
6.73

3

V-3. CONDITIONS OF POLISHING GAS ETCHING OF GALLIUM ARSENIDE BY HYDROGEN HALIDES

(Article by G. A. Aleksandrova, S. A. Medvedev, I. M. Skvortsov, Moscow; Novosibirsk, III Symposium on Polymers and Semiconductors, Poluprovodnikovaya Kislialov 2 Plinok, Russian, 13-17 June, 1972, p. 52)

A study was made of the gas etching of gallium arsenide plates under conditions where the limiting stage of the heterogeneous etching reaction is mass transport through the gas phase, in particular, the reaction product removal phase. The proposition is introduced that the polishing etching will take place on equality of the concentrations of gallium and arsenic atoms on the etching surface.

It is demonstrated that under ordinary etching conditions, in view of the great difference in molecular weights of gallium (Ga) and arsenic (As) reaction products there is a great difference in their diffusion coefficients as a result of which arsenic is accumulated on the etching surface.

With respect to the known etching reaction constants, the partial pressures of the different gallium and arsenic reaction products were determined and under the assumption of uniform convective diffusion through the boundary layer, the gas mixture compositions were calculated on etching by which the ratio of Ga/As in the gas phase on the etching surface will be close to one and, consequently, the polishing etching mode must occur.

The conditions of polishing etching of hydrogen chloride confirming the correctness of the derived relations were defined experimentally.

USSR

- ALEKSANDROVA, G. A., et al, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp 1340-1344

GaAs substrates doped with Cr and oriented along the (110) plane. Curves are plotted for the dark current in the films as a function of the temperature, and for typical spectra of photoconductivity and cathode luminescence, which show that the films contain centers with activation energy levels of 0.35, 0.56-0.62, 0.8, and 1.01 ev. A full explanation of the compensation mechanism as modified by the data of the present article is given.

2/2

USSR

UDC: 621.315.592

ALEKSANDROVA, G. A., ZAVADSKIY, Yu. I., KORNILOV, B. V., and
SKVORTSOV, I. M.

"The Predominating Contribution of Oxygen to the Compensation of
High-Resistance GaAs Films"

Leningrad, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp
1340-1344

Abstract: In an earlier paper coauthored by some of the writers
named above (B. V. Kornilov, et al, Fizika i tekhnika poluprovod-
nikov, 5, 1971, p 144) it was reported that deep-level impurities
may participate in the compensation of high-resistance GaAs films
obtained by gaseous epitaxy when the reaction volume contains oxy-
gen. Although the mechanism of compensation remained unclarified
in that article, new experimental evidence is adduced in the pre-
sent paper to provide a clearer picture of the mechanism and to
establish definitely the involvement of oxygen. The specimens for
the experiments were epitaxial layers of n-type GaAs obtained from
the gas phase of the Ga-AsCl₃-H₂ system at T = 750° C, with oxy-
gen brought into the system. The resultant material, with a re-
sistivity of up to 10⁵ ohm·cm, was deposited on semi-insulating
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Inventions & Discoveries

USSR

ALEKSANDROVA, E.

"Electricity Against Pain"

Moscow, Moskovskaya Pravda, 7 Mar 73, p 4

Translation: A new method of analgesia has come into use at the stomatological polyclinics in the capital. It was proposed by the specialists of the Central Research Institute of Stomatology. This new method is being used successfully in dental prosthetic work, as well as in the extraction and treatment of teeth.

Once electrical leads from apparatus ELOZ-1 have been affixed to earlobes by means of clips, the physician may commence his work; the minute a contact is made between the instrument and the tooth, a constant current blocks the pain centers of the tooth and the entire treatment is carried out painlessly.

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USSR

UDC 62-55:629.76.78

ALEKSANDROV, YU. V.

"The Problem of Optimum Turn of a Space Vehicle with Rotating Nose Section"

Kazan', Izvestiya VUZov, Aviatsionnaya Tekhnika, No 2, 1970, pp 5-10

Abstract: A solution is found for the problem of synthesizing an optimum regulator to implement programmed turning of a spacecraft about an athwartships axis when the vehicle has a rotating nose section to eliminate asymmetry of engine thrust and stabilize the final stages in space. The problem is solved for the passive segment of the trajectory. The optimality criterion is the sum of the integral square error of regulation and a function proportional to the energy losses in the power section of the system. The method of dynamic programming with the use of complex variables is employed for the solution. Specific expressions are found for computing the regulator parameters. A procedure is given for selecting the weight coefficients of a functional which allows attainment of the necessary precision in effecting the programmed motion on the control interval. A numerical example is considered.

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USSR

UDC 519.217

ALEKSANDROV, Yu. S., KOVSHEL', M. N., SELIVOKHIN, O. S., SOROKIN, A. V.

"Synthesis of Statistically Optimal Automatic Systems"

Nelineyn. i Optimal'n. Sistemy [Nonlinear and Optimal Systems -- Collection of Works], Moscow, Nauka Press, 1971, pp 104-119, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V127).

NO ABSTRACT.

1/1

- 3 -

USSR

UDC 669.716:621.787.2

ZAKHAROV, M. F., ALEKSANDROV, Yu. N., ALEKSANDROV, A. S., and SIN'KO, P. P.

"Experience in the Implementation of Conveyer System Production of Shapes of the AD31 Alloy"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970, pp 149-155, resume

Translation: Some construction characteristics of the equipment of the first conveyer production line in the USSR for pressing and working shapes of easily deformable alloys and also the experience of its technological implementation are discussed. Three figures, five bibliographic references.

USSR

UDC 669.2:621.774.38

SHCHEGOLEVATYKH, V. D., ALEKSANDROV, A. S., ZAKHAROV, M. F., and ALEKSANDROV, Yu. N.

"Study of the Influence of Pressure on the Strength of Seams Produced by Press Welding"

Moscow, Tsvetnyye Metally, No. 11, Nov 70, pp. 66-71

Abstract: Of the many factors influencing the quality of press welding, the most important are the degree of plastic deformation and the hydrostatic pressure. A method is briefly described for testing the strength of press-welded joints, which was used to study press-welded joints in AV alloy and Al. Graphs illustrate the influence of pressure on weldability of the alloy and the pure metal. It is found that aluminum is more suitable for press welding than the alloy.

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USSR

UDC 575.111:575.24:576.312.36:595.773.4

ALEKSANDROV, Yu. N., GERSHENZON, S. M., and MALYUTA, S. S., Molecular
Biology and Genetics Sector, Academy of Sciences UkSSR, Kiev

"Mutagenic Properties of DNA- and RNA-Containing Viruses Nonvirulent for
Drosophila"

Moscow, Genetika, No 9, 1971, pp 102-111

Abstract: Silkworm nuclear polyhedrosis, poliomyelitis, and influenza viruses, which are nonvirulent for Drosophila and do not reproduce in this insect, and the DNA of nuclear polyhedrosis virus induced lethal mutations in the sex and second chromosomes. The complementation test revealed a high degree of allelism of the lethals induced by the viruses, an indication of some selectivity of their action. Cytogenetic analysis of the chromosomes in the salivary glands of Drosophila larvae disclosed only a small number of chromosomal aberrations, suggesting that the lethal mutations were very slight gene deletions or mutations. The nucleic acids apparently play a major role in the induction of mutations by viruses that are not infectious for Drosophila.

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2/2 034

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0131549

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF AR, H, OR CL GAS ON THE ANODIC POLARIZATION OF SPECTROGRAPHIC GRAPHITE WERE MEASURED IN MOLTEN NaCl TO DET. THE MECHANISM OF THE "ANODE EFFECT". THIS EFFECT WAS DUE TO THE FORMATION OF NONCONDUCTING ANODE FILM WITH COMPN. C SUBX CL SUBY WITH POOR WETTABILITY. THIS FILM GREW BY REACTION OF THE GRAPHITE WITH CL GAS. THE FORMATION OF A GAS POCKET AROUND THE ANODE DURING ELECTROLYSIS WAS A CONSEQUENCE OF THE FORMATION OF THIS ANODE FILM.

UNCLASSIFIED

1/2 CB4 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--EFFECT OF THE NATURE OF THE GAS ON THE ANODE EFFECT IN A SODIUM
CHLORIDE MELT -U-
AUTHOR--(U2)-KASHOVETS, V.P., ALEKSANDROV, YU.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 811-15
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--ARGON, HYDROGEN, CHLORINE, SPECTROGRAPHIC ANALYSIS, SODIUM
CHLORIDE, GRAPHITE, ELECTROLYSIS, CHEMICAL REACTION MECHANISM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0964 STEP NO--UR/0080/70/043/004/0811/0815
CIRC ACCESSION NO--AP0131549
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0132126

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC CURVES WERE SHOWN FOR THE REACTION OF ET SUB 2 SN(OME)SUB 2 WITH O SUB 3 IN DECANE WITH VARYING AMTS. O PRESENT; THE REACTION WAS RUN AT 20DEGREES AND AT 60DEGREES. THE REACTION WAS BIMOL. INITIAL COORDINATION OF O SUB 3 TO SN WAS PROVED BY ISOLATION OF A COMPLEX IN OZONOLYSIS OF ET SUB 3 SNCL IN HEXANE AT 0DEGREES, WHICH GAVE ACH AND A CRYST. SOLID, CONTG. BOUND O SUB 3, DECOMPD. 117-19DEGREES, IDENTIFIED AS THE COMPLEX 2ET SUB3 SNCL.O SUB3. ETSNCL.O. THIS DECOMPD., EVEN AT ROOM TEMP., SLOWLY TO FORM ACH AND ETSNCL.O.ET SUB3 SNCL, M. 169-71DEGREES. EVIDENTLY ORGANOTIN COMPOS. REACT WITH O SUB 3 EITHER WITH OR WITHOUT LOSS OF O AND BY COMPLEX FORMATION. IN OZONOLYSIS OF ET SUB 3 SNCL THE HYDROPEROXIDIC PRODUCT ET SUB3 SN7SNET SUB 2 OOH IS DIRECTLY CONVERTED INTO EXOH AND ETSNCL.O, BUT IN OZONOLYSIS OF ET SUB 3 PBCL IT WAS POSSIBLE TO ISOLATE ETPBCL.O, A YELLOW SOLID, WHICH WAS INSOL. AND INFUSIBLE. OZONOLYSIS OF ET SUB 2 SNCL SUB 2 IN CCL SUB 4 AT 15DEGREES GAVE COLORLESS COMPLEX ET SUB 2 SNCL SUB 2.ETSNCL SUB 2 OOH, M. 61-2DEGREES. THIS HYDROLYZED TO ET SUB 2 SNCL SUB 2 AND H SUB 2 O SUB2. THE OZONOLYSIS OF ORGANOTIN COMPOS. IS CHARACTERIZED BY A LACK OF TEMPERATURE COEFF. OF THE REACTION RATE.

FACILITY: NAUCH. ISSLED. INST. KHIM., USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE 27NOV70
TITLE--MECHANISM OF THE OXIDATION OF ORGANOTIN COMPOUNDS BY OZONE U-
AUTHOR-(03)-ALEKSANDROV, YU.A., SHEYANOV, N.G., SHUSHUNOV, V.A.
COUNTRY OF INFO--USSR *A*
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(1), 91-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--OXIDATION, ORGANOTIN COMPOUND, OZONE, DECANE, COMPLEX
COMPOUND, LEAD COMPOUND, CHEMICAL REACTION TEMPERATURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/1864 STEP NO--UR/0020/70/192/001/0091/0094
CIRC ACCESSION NO--AT0132126
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124522
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PREVIOUSLY DESCRIBED METHOD
(ALEKSANDROV ET AL. (1965) WAS USED TO PREP. ET SUB3 SNOOCHMEET, B
SUB0.5 67.5DEGREES, N PRIME20 SUBD 1.4662. THIS IS READILY HYDROLYZED
AND ON BEING HEATED DECOMPS. (RATE 1ST ORDER WITH RESPECT TO INITIAL
CONCN. WHILE SLIGHTLY LESS THAN UNITY WITH RESPECT TO EXISTING CONCN).
THE E SUBA OF DECCMPN. IS 27 KCAL-MOLE. THE REACTION YIELDS (IN
DODECANE AT 170DEGREES) ETCOME AND ET SUB2 SNO, C SUB2 H SUB6 AS WELL AS
(ET SUB3 SN)SUB2 O. FACILITY: GOR'K. GOS. UNIV. IM.
LOBACHEVSKOGO, GORKI, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SEC BUTYLPEROXYTRIETHYL TIN -U-

AUTHOR-(02)-ALEKSANDROV, YU.A., SAFONOVA, N.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(1), 246

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANOTIN COMPOUND, CHEMICAL DECOMPOSITION, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/0859

STEP NO--UR/0079/70/040/001/0246/0246

CIRC ACCESSION NO--AP0124522

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121092

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OZONOLYSIS OF ET SUB2 SNCL SUB2 GAVE MECHO, ACOH AND A COMPLEX ETCL SUB2 SNOOH. ET SUB2 SNCL SUB2, M. 61-20DEGREES. HYDROLYSIS OF THE LATTER GAVE H SUB2 O SUB2 AND ET SUB2SNCL SUB2. OZONOLYSIS OF ET SUB3 PBCL GAVE MECHO, ACOH, ETOH AND COMPLEX, INFUSIBLE POLYMERIC ETCLPBO, WHICH IS UNCHANGED UPON TREATMENT WITH H SUB2 O OR ORG. SOLVENTS. FACILITY: GORKI. GOS. UNIV. IN. LORACHEVSKOGO, GORKI, USSR.'

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF COORDINATION ON THE OZONOLYSIS OF METAL CARBON BONDS -U-
AUTHOR-(02)-ALEKSANDROV, YU.A., SHEYANOV, N.G.
COUNTRY OF INFO--USSR A.
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(1), 246-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--OZONE, CARBON, METAL BONDING, CHEMICAL BONDING
CONTROL MARKING--NO RESTRICTIONS,
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0418 STEP NO--UR/0079/70/0407/001/0246/0247
CIRC ACCESSION NO--AP0121092
UNCLASSIFIED

USSR

UDC: 621.319.4

ZAYATS, V. K., SIDOROV, G. I., ALEKSANDROV, Yu. A., PALAGIN, V. A.

"An Installation for Testing Capacitors on Audio Frequencies"

Pribory i sistemy avtomatiki. Resp. mezhved. nauch.-tekhn. sb. (Devices and Systems for Automation. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 14, pp 45-48 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V330)

Translation: The authors describe an installation for reliability testing capacitors in the acoustic frequency range. The unit is a low-frequency power oscillator operating into a tank circuit whose capacitive element is a test group of capacitors. Test frequencies are 100, 200, 400, 500, 1,000, 2,500, 5,000 and 10,000 Hz. The maximum capacitance of the group of test capacitors is 10uF at a maximum voltage of 1,400 V on 100 Hz, and 210 V on 10,000 Hz. The installation can be used for long-term tests. Two illustrations, bibliography of two titles. Resumé.

1/1

USSR

UDC: 518.9

ALEKSANDROV, Yu. A., YANISEVICH, A. A.

"On Stochastic Differential Games"

Vestn. Khar'kov. un-ta (Khar'kov University Herald), 1971, No 67, Mathematics and Mechanics, vyp. 36, pp 99-110 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V796)

Translation: The paper deals with multidimensional stochastic game problems. Solutions in the gaussian approximation are found by means of quasi-Markov processes in dynamic programming. Authors' abstract.

USSR

ALEKSANDROV, Yu. A., YANTSEVICH, A. A., Vestn. Khar'kov. un-ta,
1972, No 83, Mathematics and Mechanics, vyp. 37, pp 67-77

probability distribution densities, and the corresponding stochastic differential equation is then already restored in accordance with equations for the one-dimensional probability distribution density using the corresponding model equations. Although the solution of the problem is not unambiguous, it is quite useful in studying dynamic systems described by high order stochastic differential equations. Authors' abstract.

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USSR

UDC: 519.2

ALEKSANDROV, Yu. A., YANTSEVICH, A. A.

"On Constructive Methods in the Theory of Quasi-Markov Processes"

Vestn. Khar'kov. un-ta (Khar'kov University Herald), 1972, No 83, Mathematics and Mechanics, vyp. 37, pp 67-77 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V104)

Translation: The method of parabolic equations is frequently used in studying high order stochastic differential equations. However, this method is based on expanding the phase space and reducing the corresponding problem to the Markov case. But such a course is not always advisable if we are interested in the probability distribution densities of solution of the initial stochastic differential equations rather than in the joint probability distribution densities of the solution and its derivatives.

In this paper, the "inverse" problem is considered: relations are postulated between the "probability" flow and the

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USSR

UDC: 519.2

ALEKSANDROV, Yu. A., YANTSEVICH, A. A.

"Revisions [in the Paper 'Random Processes With Aftereffect and Some of Their Applications. Optimum Detection, Filtering and Control. II' Printed in 'Khar'kov University Herald. Mathematics and Mechanics', Vyp. 35]"

Vestnik Khar'kov. un-ta (Khar'kov University Herald), 1972, No 83, Mathematics and Mechanics, vyp. 37, p 119 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V118)

Translation: Revisions are made in the above mentioned paper (RZhMat, 1972, 1B390).

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USSR

UDC: 519.2

ALEKSANDROV, Yu. A., YANTSEVICH, A. A.

"Concerning S. N. Bernshteyn's Stochastic Bridges"

Vestn. Khar'kov. un-ta (Khar'kov University Herald), 1972, No 83, Mathematics and Mechanics, vyp. 37, pp 77-85 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V105)

Translation: In a paper at the International Congress on Relations Between Random Quantities held in Zürich in 1932, S. N. Bernshteyn introduced a new class of random processes -- stochastic bridges (recurrent chains) -- which are a generalization of Markov Processes. In finding the laws of probability distribution for stochastic bridges, it is necessary to set not only the initial distribution, but also the final distribution. In this paper, relations are established between stochastic bridges, stochastic differential equations, and the corresponding equations for probability distribution densities, and several examples are considered. Authors' abstract.

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A

Cytology

USSR

UDC 576.36:576.4

~~ALEXSANDROV, V. Ya.~~, Botanical Institute imeni V. L. Komarov, and Chair of Cytology and Histology, Soil Biology Faculty, Moscow State University, Academy of Sciences USSR

"The Problem of Behavior on the Cellular Level (Cytoetiology)"

Moscow, Uspekhi Sovremennoy Biologii, Vol 69, No 2, Mar/Apr 70, pp 220-240

Abstract: This is a review article with 53 references. The technology of cellular life processes may be represented by two kinds of phenomena: chemical reactions in cells and directional movements of intracellular components and cells themselves. Present work in molecular biology covers primarily the chemical aspect. Studies on the other type of phenomena are nonexistent, and yet knowledge of cell life may involve understanding of directional movements. The directional movement of cells and intracellular components, as well as the behavior of living organisms, should be considered as representing the same biological manifestations, only at different evolutionary development levels. "Behavior" is defined on the organic cellular and subcellular levels.

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USSR

UDC: 541.124

ALEKSANDROV, V. V., BUFETOV, N. S., PASTUKHOVA, T. V., TUKHTAYEV, R. K.,
Novosibirsk

"Using Pulse Calorimetry to Study the Kinetics of Reactions in Condensed
Media"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 9, No 1, Jan/Feb 73, pp 75-83

Abstract: The authors investigate pulse calorimetry as a means of studying high-temperature reactions. Some of the advantages of this research procedure are its fundamental nature (there are almost no chemical reactions which do not involve release or absorption of heat), the fact that calorimetric methods are direct, which simplifies interpretation, and the possibility of making measurements where other methods cannot be used. It is shown that the best way to ensure that the time constant of the calorimeter is much shorter than the time constant of the reaction to be studied, is to use thin layers in the calorimetric cell construction. Some examples are given of experimental data obtained by pulse calorimetry.

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USSR

UDC: 541.127-542.92-547.458.82

A

KOROBAYNICHEV, O.P., ALEKSANDROV, V.V., LYAKHOV, N.Z., Institute of Chemical Kinetics and Combustion, Novosibirsk, Siberian Department of the Academy of Sciences USSR

"Use of a Time-of-Flight Mass-Spectrometer to Study the Kinetics and Mechanism of High-Temperature Decay of Pyroxylin"

Moscow, Izvestiya Akademii Nauk SSR; Seriya Khimicheskaya, No 3, Mar 70, pp 613-616

Abstract: The authors used a recently developed method for studying high-temperature decay of pyroxylin. The procedure consists essentially in rapid heating of a small specimen of a suspended solid, and using a time-of-flight mass-spectrometer to register the products of decay. This method was used in the 220-280°C range to study the decay of pyroxylin, one of the components of dibasic solid fuels. The primary decay products were found to be H_2O , CH_2O , CO , CO_2 , and H_2 . The graduated ratios for the intensities of the peaks in the mass spectra of these molecules vary during the reaction. The mass spectra of the decay products indicate that in addition to NO_2 , more complex nitrocompounds (possibly NO_3) are formed. A comparison with low-temperature kinetic data (130-160°C) showed that the reaction is autocatalytic in both cases, so that it should be possible to extrapolate. The curve for the reaction rate as a function of time passes through a maximum, the time at which the maximum is reached decreasing with a rise in temperature. This effect is not dependent on temperature, which was held constant during the experiment. The maximum reaction rate is equal to $w_{\text{MAX}} = 10^{14.4} \exp(-35,000/RT) \text{ sec}^{-1}$.

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2/2 028

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125793

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION RUN IN THE 220-80DEGREES RANGE AT 10 PRIME NEGATIVE5 MM GAVE AS PRIMARY PRODUCTS: NO SUB2, HCHO, CO, CO SUB2, AND H SUB2 O, THE RATIOS OF WHICH VARIED DURING THE REACTION. THE MASS SPECTRA OF THE PRODUCTS INDICATED THE POSSIBLE FORMATION OF MORE COMPLEX COMPOS. OF N AND O, SUCH AS NO SUB3. THE PYROLYSIS OF PYROXYLIN IS AUTOCATALYTIC AND THE MAX. REACTION RATE EQUATION IS GIVEN BY $W_{SUBMAX} = 10 \text{ PRIME} 14.4 \text{ EXP}(\text{MINUS } 35,000\text{-RT})$ SEC PRIME NEGATIVE1. FACILITY: INST. KHIM. KINET. GORENIYA, NOVOSIBIRSK, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--KINETICS AND MECHANISM OF HIGH TEMPERATURE DECOMPOSITION OF
PYROXYLIN USING A TIME OF FLIGHT MASS SPECTROMETER -U-
AUTHOR-(03)-KOROBAYNICHEV, D.P., ALEKSANDROV, V.V., LYAKHOV, N.Z.
COUNTRY OF INFO--USSR A
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 612-16
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL REACTION KINETICS, HIGH TEMPERATURE EFFECT, MASS
SPECTROSCOPY, CHEMICAL REACTION RATE, CHEMICAL REACTION MECHANISM,
PYROXYLIN, NITRATE, FORMALDEHYDE, CARBON MONOXIDE, CARBON DIOXIDE, WATER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/F-RAME--2000/2213 STEP NO--UR/0062770/0007003/0612/0616
CIRC ACCESSION NO--AP0125793
UNCLASSIFIED

POLONNIKOV, R. I. et al., Soviet Patent No 285353

based on two PNP transistors and one NPN transistor. The emitter circuit of the transistor in each amplification stage is connected across a resistor which is common to the m channels.

USSR

UDC: 681.325.65

POLONNIKOV, R. I., ALEKSANDROV, V. V., PEREVOZCHIKOV, Yu. G.

"A Self-Adaptive Classifier"

Moscow, Otkrytiya, izobreneniya, promyshlennyye obraztzy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285353, class 42, filed 28 Apr 69, published 29 Oct 70, pp 121-122

Translation: This Author's Certificate introduces: 1. A self-adaptive classifier which consists of a matrix of adaptive elements, a maximum detector, and a display circuit. As a distinguishing feature of the patent, the device is designed to simplify phase discrimination of the output signal. For this purpose, the adaptive elements are made in the form of nine-aperture transfluxors, and each of the channels for each row of the matrix contains a pulse-shifting circuit based on ferrite rings with rectangular hysteresis loop, the windings of these rings being connected in a common circuit with the output and readout windings of the transfluxors. 2. A modification of this classifier with the distinguishing feature that sensitivity is increased by using n identical channels in the maximum detector, each of these channels being comprised of a series circuit consisting of RC integrating networks and a three-stage DC voltage amplifier

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USSR

ALEKSANDROV, S. B., et al, V sb. Poluprovodniki i ikh primeneniye v elektrotekhn, No 5, Riga, "Zinatnc," 1971, pp 431-449

tetracene (allowing for BEB) equals 5.40 plus or minus 0.05 ev. The effect is investigated of the brightening in a singlet absorption band on photoelectric emission from tetracene. 11 ill. 43 ref.

2/2

Photoelectric Effect

USSR

UDC 535.315.1

ALEKSANDROV, S. B., BELKIND, A. I., ALEKSANDROV, V. V., GRENHOV,
V. V., NEYSHLOS, YA. D.

"Photoelectric Emission From Tetracene. Effect of the Condition
of the Surface and of Brightening"

V sb. Poluprovodniki i ikh primeneniye v elektrotekhn (Semiconduc-
tors and Their Application to Electrical Engineering--Collection
of Works), No 5, Riga, "Zinatne," 1971, pp 231-249 (From Zh:
Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2419)

Translation: Various mechanisms are considered of photoelectric
emission from tetracene: photoionization of defects of trapped
electrons, ionization of such defects by excitons and photoioniza-
tion of molecules of the basic substance. An analysis is conducted
of the effect of a bend [zakrib] of the energy bands (BEB) on
photoelectric emission: on the spectral dependence of the quantum
yield, the distribution of the electrons with respect to energy,
the photoelectric work function, and others. The parameters of
the BEB are obtained. The photoelectric work function of the

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USSR

UDC 533.6.011.8:535.2

ALEKSANDROV, V. V., (Moscow)

"Method of Phase Plane for the Solution of One-Dimensional Stationary Problems of Radiation Gas Dynamics"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 1, Jan-Feb 72, pp 144-155

Abstract: A method is outlined which makes it possible to solve one-dimensional problems in a phase plane, in which gas velocity and rate of heat energy emission in a unit of gas volume owing to radiation, are plotted along the axes. Advantages of such approach in the presence of dissipation and strong interaction of radiation with gas motion are indicated. The one-dimensional problems of radiation gas dynamics are formulated in physical coordinates and optical thicknesses. The method of phase plane for a grey and selective radiation is described. Temperature far beyond the front of a strong shock wave propagating along the cold transparent non dispersing gas is calculated. The magnitude of velocity discontinuity in a shock wave, propagating through a radiating, absorbing and dissipating gas is determined in the presence of strong effect of radiation on propagation. A brief discussion of the method is presented. It is 1/2

USSR

UDC 8.74

POLONNIKOV, R. I., ALEKSANDROV, V. V.

"Some Methods of Isolating Informative Parameters and Their Application in Adaptive Devices"

V sb. Teoriya i primeneniye adaptivn. sistem (Theory and Application of Adaptive Systems -- collection of works), Alma-Ata, 1971, pp 223-250 (from RZh-Kiber-netika, No 9, Sep 72, Abstract No 9V667)

Translation: A study is made of the possibility of applying a universal system of standards in the form of simplex codes in recognition devices. It is demonstrated how by means of such standards an abbreviated description of the input data (sorting of the informative coordinates) and classification are carried out. A group training method is proposed which permits a highly significant decrease in the memory size of the recognition device. A study was made of some of the procedures for constructing complex attributes on the basis of applying the Adamar operators and simple logical operators. The means of technical implementation of such recognition devices having high speed and universality are noted. The bibliography has 23 entries.

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USSR

UDC 8.74

POLONNIKOV, R. I., ALEKSANDROV, V. V.

"Certain Methods of Selecting Informative Parameters and Their Application in Adaptive Devices"

V sb. Teoriya i primeneniye adaptivn. sistem (Theory and Application of Adaptive Systems -- Collection of Works), Alma-Ata, 1971, pp 223-250 (from RZh-Matematika, No 9, Sep 72, Abstract No 9V667)

Translation: The possibility of applying a universal system of standards in the form of simplex codes in recognition devices is discussed. It is shown that the description of input data (the gathering of informative coordinates) and classification can be shortened with the aid of such standards. A group method of teaching is proposed which would very considerably reduce the memory size of the recognition device. Certain methods are considered for constructing complex indicators on the basis of the application of Hadamard operators and simple logical operators. Ways for technically achieving suitable recognition devices having high speed and universality are mentioned. 23 ref. V. Mikheyev.

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USSR

ALEKSANDROY, V. V., et al., Doklady Akademii Nauk SSSR, Vol 210, No 1, 1 May 73, pp 161-163

containing additives. The authors thank A. G. Kerzhanov for assistance and constructive criticism, and V. S. Babkin for useful remarks in discussion of the work.

2/2

Combustion

USSR

UDC 662.311.1

ALEKSANDROV, V. V., BOLDYREVA, A. V., BOLDYREV, V. V., TUKHTAYEV, R. K.,
Institute of Chemical Kinetics and Combustion, Siberian Department of the
Academy of Sciences of the USSR, Novosibirsk

"Mechanism of Action of Certain Additives on the Rate of Combustion of DINY"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 1, 1 May 73, pp 161-163

Abstract: The action of additives on the rate of combustion of condensed media has not been adequately studied. Different viewpoints have been expressed to explain experimental data. In this paper observations were made on the combustion of DINY (dinitrohydroxydiethylnitrosilane) which could in many instances help to explain the mechanism of the action of additives. The additives studied were potassium bichromate and ternary compositions of compounds of lead and copper with finely dispersed carbon. The experiments revealed a previously undescribed mechanism of the accelerating action of additives on the combustion of explosives: condensed formations arise on the burning surface where exothermal reactions take place, heating these formations to a high temperature. The active substances in these formations is either introduced in ready form in the additives (as for example in the dispersed carbon of the ternary compositions) or is formed directly in the surface layer of the burning explosive as was observed in the case of chromium-
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USSR

ALEKSANDROV, V. T., Izvestiya vysshikh uchobnykh zavedeniy
Radioelektronika, Vol 13, No 1, Jan 70, pp 82-85

Abstract: investigated and by the large dimensions of its thermomitter surface area. Possible uses of such tubes are considered. 5 fig. 5 ref. Submitted 9 Oct 68; resubmitted after revision 23 Dec 68.

3/3

USSR

ALEKSANDROV, V. T., Izvestiya vysshikh uchebnykh zavedeniy
Radioelektronika, Vol 13, No 1, Jan 70, pp 82-85

Abstract: substance. The initial build-up of the necessary operating temperature of the cathode ("triggering" of the device) is attained with the aid of the starting heater, after which it can be detached from the heater circuit with simultaneous switching on of the anode voltage. The results of the investigation of the noise properties of self-heating diodes lead to the following conclusions: 1) The possibility of operation of such devices in a saturation regime and in a space charge regime is experimentally confirmed; 2) During operation in a saturation regime, the output of its noise exceeded by 1.5 to 2.0 times the analogous output generated by a 2D2S noise diode with a comparatively small irregularity of the spectral characteristics of the noise, amounting to 2-3 db in the 1-10 MHz frequency range, and 3) In the case of operation of the diode in a space charge regime, the noise output of the device is considerably less than the analogous magnitude for ordinary kenotrons, which is explained, chiefly, by the reverse positioning of the electrodes in the tube

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USSR

A

UDC 621.385.134

ALEKSANDROV, V. T., SINEKOP, YU. S.

"Investigation of the Noise Characteristics of Self-Heating Diodes in the Radio-Frequency Zone"

Kiev, Izvestiya vysshikh uchebnykh zavedeniy Radioelektronika, Vol 13, No 1, Jan 70, pp 82-85

Abstract: In a self-heating diode, heating of the cathode to the necessary operating temperature is produced by the complete or partial use of the heat which is emitted by the anode as a result of its electron bombardment. The electrical system of the self-heating diode which was investigated consists of a centrally located anode, inside of which a starting heater is positioned. The anode of the device is surrounded by a cathode cylinder, the interior surface of which is covered by an emitting substance. The thermal screen which surrounds the electrode system decreases the expenditure of power necessary to assure a specific cathode temperature. This screen can act at the same time as a second anode for the device, if the exterior surface of the cylindrical cathode is also covered by an emitting

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3/3 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIFC ACCESSION NO--AT0110674

ABSTRACT/EXTRACT--THE RESULTS OF THE INVESTIGATION OF THE NOISE PROPERTIES OF SELF HEATING DIODES LEAD TO THE FOLLOWING CONCLUSIONS: (1) THE POSSIBILITY OF OPERATION OF SUCH DEVICES IN A SATURATION REGIME AND IN A SPACE CHARGE REGIME IS EXPERIMENTALLY CONFIRMED; (2) DURING OPERATION IN A SATURATION REGIME, THE OUTPUT OF ITS NOISE EXCEEDED BY 1.5 TO 2.0 TIMES THE ANALOGOUS OUTPUT GENERATED BY A 2025 NOISE DIODE WITH A COMPARATIVELY SMALL IRREGULARITY OF THE SPECTRAL CHARACTERISTICS OF THE NOISE, AMOUNTING TO 2-3 DB IN THE 1-10 MHZ FREQUENCY RANGE, AND (3) IN THE CASE OF OPERATION OF THE DIODE IN A SPACE CHARGE REGIME, THE NOISE OUTPUT OF THE DEVICE IS CONSIDERABLY LESS THAN THE ANALOGOUS MAGNITUDE FOR ORDINARY KENOTRONS, WHICH IS EXPLAINED, CHIEFLY, BY THE REVERSE POSITIONING OF THE ELECTRODES IN THE TUBE INVESTIGATED AND BY THE LARGE DIMENSIONS OF ITS THERMOEMITTER SURFACE AREA. POSSIBLE USES OF SUCH TUBES ARE CONSIDERED.

UNCLASSIFIED

2/3 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0110674

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN A SELF HEATING DIODE, HEATING OF THE CATHODE TO THE NECESSARY OPERATING TEMPERATURE IS PRODUCED BY THE COMPLETE OR PARTIAL USE OF THE HEAT WHICH IS EMITTED BY THE ANODE AS A RESULT OF ITS ELECTRON BOMBARDMENT. THE ELECTRICAL SYSTEM OF THE SELF HEATING DIODE WHICH WAS INVESTIGATED CONSISTS OF A CENTRALLY LOCATED ANODE, INSIDE OF WHICH A STARTING HEATER IS POSITIONED. THE ANODE OF THE DEVICE IS SURROUNDED BY A CATHODE CYLINDER, THE INTERIOR SURFACE OF WHICH IS COVERED BY AN EMITTING SUBSTANCE. THE THERMAL SCREEN WHICH SURROUNDS THE ELECTRODE SYSTEM DECREASES THE EXPENDITURE OF POWER NECESSARY TO ASSURE A SPECIFIC CATHODE TEMPERATURE. THIS SCREEN CAN ACT AT THE SAME TIME AS A SECOND ANODE FOR THE DEVICE, IF THE EXTERIOR SURFACE OF THE CYLINDRICAL CATHODE IS ALSO COVERED BY AN EMITTING SUBSTANCE. THE INITIAL BUILD UP OF THE NECESSARY OPERATING TEMPERATURE OF THE CATHODE (TRIGGERING OF THE DEVICE) IS ATTAINED WITH THE AID OF THE STARTING HEATER, AFTER WHICH IT CAN BE DETACHED FROM THE HEATER CIRCUIT WITH SIMULTANEOUS SWITCHING ON OF THE ANODE VOLTAGE.

UNCLASSIFIED

1/3 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INVESTIGATION OF THE NOISE CHARACTERISTICS OF SELF HEATING DIODES
IN THE RADIO FREQUENCY ZONE -U-
AUTHOR-(02)-ALEKSANDROV, V.T., SINEKOP, YU.S.

COUNTRY OF INFO--USSR

SOURCE--KIEV. IZVESTIYA VYSSHIKH UNCHEBNYKH ZAVENDENIY RADIOELEKTRONIKA,
VOL 13, NO 1. JAN 70, PP 82-85
DATE PUBLISHED----JAN70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--ELECTROMAGNETIC NOISE, DIODE CIRCUIT, CATHODE, RF FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0963

STEP NO--UR/0452/70/013/001/0032/0085

CIRC ACCESSION NO--AT0110674

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--16JCT70
 CIRC ACCESSION NO--AP0105351
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GAMMA SPECTRUM AND CONVERSION E OF PRIME169 YB WERE STUDIED IN THE RANGE OF SPECTRA WHERE GAMMA TRANSITIONS OF THE K PRIMEPI EQUALS 3-2 PLUS WERE EXPECTED. ELECTROLYTICALLY DEPOSITED TA WAS IRRADIATED WITH 660-MEV RHO, AND PRIME169 YB WAS SEPD. BY CHROMATOG. FROM THE TARGET LU FRACTION. INTENSITIES OF 9 NEW CONVERSION LINES WERE MEASURED AND TABULATED. OF THESE, THE 370.86-KEV LINE WERE M2, AND 494.15, 514.89, 579.41, 600.2, AND 624.58 WERE M1. THESE WERE INCLUDED IN THE REVISED DECAY SCHEME OF PRIME169 YB. THE NATURE OF THE 571.0-KEV (3-2 PLUS) LEVEL IS DISCUSSED. IT IS 3-2 PLUS (411) YIELDS UP ALTHOUGH IT IS OF MIXED NATURE, THE WAVEFUNCTION CONTG. BOTH UNIPARTICLE AND COLLECTIVE COMPONENTS. THE 571.0-, 633.03-, 718.3-, AND 825.2-KEV LEVELS OF PRIME169 TB WERE FILLED BY BETA NEGATIVE PROCESSES WITH RELATIVE ABUNDANCES OF LESS THAN 1 TIMES 10 PRIME NEGATIVE 3, 1.1 TIMES 10 PRIME NEGATIVE 2, 3.6 TIMES 10 PRIME NEGATIVE 3, AND LESS THAN 6 TIMES 10 PRIME NEGATIVE 4PERCENT, RESP. THE TOTAL DISINTEGRATION ENERGY OF PRIME169 YB WAS ESTD. TO BE 1100 PLUS OR MINUS 200 KEV. FACILITY: VSES. NAUCH.-ISSLED. INST. METROL. IM. MENDELEEVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--EXCITATION OF LEVELS OF 633 AND 718 KEV IN THULIUM-169 DURING THE
DECAY OF YTTERBIUM-169 -U-
AUTHOR-(04)-ALEKSANDROV, V.S., BALALAYEV, V.A., DZHELEPOV, B.S.,
TERNERSESYANTS, V.YE. *A*
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 42-53

DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NUCLEAR ENERGY LEVEL, EXCITED NUCLEUS, THULIUM ISOTOPE,
YTTERBIUM ISOTOPE, GAMMA SPECTRUM, GAMMA TRANSITION, BETA DECAY,
RADIOACTIVE DECAY SCHEME

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0277

STEP NO--UR/0048/70/034/001/0042/0053

CIRC ACCESSION NO--AP0105351

UNCLASSIFIED

3/3 . 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105319

ABSTRACT/EXTRACT--THE INSTRUMENT IS EQUIPPED WITH AN OSCILLOGRAPH THAT
ENABLES ONE TO ADJUST THE REGIME OF THE OPERATION (SELECTION OF DIGITAL
WINDOWS) AND TO OBSERVE SPECTRA REGISTERED DURING THE STORAGE PROCESS.

UNCLASSIFIED

2/3 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105319

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO GE(LI) DETECTORS ARE USED. ONE OF THEM CAN BE ALTERNATIVELY REPLACED BY A NA(TI) DETECTOR, IF NECESSARY. PULSES GO FROM THE DETECTORS TO A PREAMPLIFIER AND ARE DISTRIBUTED INTO 2 CHANNELS. SPECTROMETRIC CHANNELS CONSIST OF A LINEAR AMPLIFIER, AN EMITTER FOLLOWER, A DIFFERENTIAL AMPLITUDE DISCRIMINATOR, AND AN AMPLITUDE NUMERICAL TRANSFORMER FOR THE TRANSFORMATION INTO EITHER 512 OR 4096 CHANNELS. A TIME CIRCUIT IS FORMED BY 2 FAST AMPLIFIERS, A TIME AMPLITUDE CONVERTOR, DIFFERENTIAL AMPLITUDE DISCRIMINATOR, COINCIDENCE CIRCUIT AND SHAPING UNIT. IN ONE OF THE TIME CIRCUIT CHANNELS AN ALTERNATIVE DELAY LINE IS INCLUDED FOR SELECTING THE OPTIMAL TIME REGIME FOR THE OPERATION OF THE CONVERTOR. THE CONVERTOR TRANSFORMS THE TIME INTERVAL BETWEEN THE FRONT OF PULSES FROM DETECTORS INTO AN AMPLITUDE OF THE PULSE WHICH IS SUBSEQUENTLY ANALYZED BY THE DIFFERENTIAL DISCRIMINATOR. IN THE CASE OF THE COINCIDENCE OF THE PULSE AMPLITUDE OF THE CONVERTOR WITH THE WINDOW SELECTED, THE DISCRIMINATOR PRODUCES A SIGNAL THAT PASSES TO THE SLOW COINCIDENCE CIRCUIT. TO THE OTHER 2 INPUTS OF THIS CIRCUIT, OUTPUT SIGNALS ARE DELIVERED FROM SPECTROMETRIC CIRCUITS THAT ALLOW FOR SELECTING EITHER AMPLITUDE THRESHOLD OR PORTIONS IN THE 2 SPECTRA. FROM THE COINCIDENCE CIRCUIT THE COINCIDENCE PULSE PASSES THROUGH THE SHAPING UNIT AND THE EMITTER FOLLOWER TO INPUTS OF THE AMPLITUDE NUMERICAL TRANSFORMERS AND INTO A LOGIC CIRCUIT. THE REGISTRATION OF PULSES IS ACCOMPLISHED BY USING A 2 DIMENSIONAL ANALYZER WITH DIGITAL WINDOWS FORMED ON THE BASIS OF THE "MINSK-2" DIGITAL COMPUTER.

UNCLASSIFIED

1/3 025 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--TWO DIMENSIONAL GAMMA, GAMMA COINCIDENCE ANALYZER WITH
SEMICONDUCTOR DETECTORS BASED ON THE "MINSK-2" COMPUTER WITH THE
AUTHOR--ALEKSANDROV, V.S.
COUNTRY OF INFO--USSR A
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 69-77
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--COINCIDENCE COUNTING, SEMICONDUCTOR DETECTOR, DIGITAL COMPUTER
APPLICATION, GAMMA SPECTROMETER, COUNTING CIRCUIT, OSCILLOGRAPH/(U)MINSK
DIGITAL COMPUTER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0243 STEP NO--UR/0048/70/034/001/0069/0077
CIRC ACCESSION NO--AP0105319
UNCLASSIFIED

USSR

ALEKSANDROV, V. S., et al., Izvestiya Akademii Nauk SSSR--Seriya Fizicheskaya,
No 5, 1973, pp 948-952

types of decay are also given. The authors thank N. A. Lenedev,
V. P. Afanas'yev and I. I. Gromov for preparing the specimens used in the
experiments, and Ye. P. Grigor'yev for his interest in the work. It is noted
that the method here given is practically unique for this type of decay chain.

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- 45 -

USSR

UDC: None

ALEKSANDROV, V. S., BUTTSEV, V. S., VYLOV, Ts., GROMOV, K. Ya.,
and KALINNIKOV, V. G.

"Determining the Energy of the $^{134}\text{Ce} \xrightarrow{\epsilon} ^{134}\text{La}$ and $^{160}\text{Er} \xrightarrow{\epsilon} ^{160}\text{Ho}$
Decays"

Moscow, Izvestiya Akademii Nauk SSSR--Seriya Fizicheskaya, No 5,
1973, pp 948-952

Abstract: Using experimental and theoretical data from earlier papers, the authors of the present article determine the energy arising from the decay of $^{134}\text{Ce} \xrightarrow{\epsilon} ^{134}\text{La}$ and $^{160}\text{Er} \xrightarrow{\epsilon} ^{160}\text{Ho}$. The method of the determination is illustrated by the example of the latter decay, where the formula for the number of x-ray quanta of the K series for Ho per 100 decays of ^{160}Er during a specified time interval and the formula for the number of x-ray quanta of the K series for Dy per 100 δ decays of ^{160}Ho over the same time interval, are used. The experiments through which the data were obtained are briefly described, and diagrams illustrating the systems of the decays are given. Plots of the x-ray radiation spectra for both

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USSR

UDC 621.979.07

TYLKIN, M. A., ALEKSANDROV, V. P., and CHECHEKIN, Yu. F.

"Durability of Stamps During Hot Stamping on Presses"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya,"
1970, pp 211-216

Translation: An analysis is made of the effect of a number of basic factors on the durability of the tool of crank hot stamping presses. On the basis of extensive factual material, the effect of the mass of forged pieces, mass, productivity of the press, and other factors on the durability of press inserts is evaluated. A classification of forged pieces by groups, for which the intervals of stamp durability are determined, is made according to the results of a study of worn out stamps. Two figures, one table, and 11 bibliographic entries.

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USSR

UDC: 621.373.029.52(088.8)

ALEKSANDROV, V. P., RADIYEVSKIY, L. V., RUSIN, Yu. S., KUZNETSOV, V. K.

"A Thyristorized Series Inverter"

USSR Author's Certificate No 262253, filed 18 Nov 68, published 3 Jun 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D498 P)

Translation: This Author's Certificate introduces a thyristorized series inverter which contains commutating capacitors and an output transformer. To improve efficiency and reliability, the primary winding of the output transformer is connected between the cathode of one thyristor and the anode of another, and the commutating capacitors are connected between the other leads of the thyristors and the centertap of the same winding. The proposed inverter may be used as the output stage of an oscillator operating in the audio frequency range. V. P.

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137920

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CO(OAC) SUB2 CATALYZED, BR INITIATED OXIDN. OF M,ME SUB2 C SUB6 H SUB4 (I) AT A CONC. OF 2 MOLES-L. IN HOAC SOLN. BY AIR ADMITTED AT 150DEGREES AND UNDER 20 ATM PRESSURE WAS 0.2-0.5 ORDER IN BR, 1-2 ORDER IN CO, AND 1.7-0.4 ORDER IN I. THE ORDER IN FELL AS I CONC. ROSE FROM 0.5 TO 2 MOLES-L. AT THE OPTIMAL CO,BR RATIO (2:1 TO 1:1), M,(HO SUB2 C) SUB2 C SUB6 H SUB4 (II) YIELDS WERE 86.9, 83.7, 71.2, 81.0, 79.0, 83.3, 85.8, AND 87.1PERCENT WHEN THE INITIATORS WERE NH SUB4 BR, CHBR SUB3, C SUB2 H SUB2 BR SUB4, P,(BRCH SUB2) SUB2 C SUB6 H SUB4, BR SUB2, HBRO SUB3, HBR, AND COBR SUB2, RESP. WHEN CO(OAC) SUB2 WAS REPLACED BY THE MN SALT, THE REACTION RATE WAS REDUCED AND II YIELDS WERE 49.9PERCENT, BUT WHEN MIXTS. OF THESE CATALYSTS WERE USED, REACTION RATES APPROACHED THOSE FOR CO(OAC) SUB2 CATALYZED OXIDN. AND II YIELDS WERE 80.8-7.0PERCENT.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INFLUENCE OF THE COMPOSITION OF A REACTION MIXTURE ON M,XYLENE
OXIDATION -U-
AUTHOR-(05)-ALEKSANDROV, V.N., GOLUBEV, G.S., GITIS, S.S., ZABELINA, G.V.,
SAVINOVA, V.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(5), 341-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--XYLENE, OXIDATION, ORGANOCOBALT COMPOUND, CATALYST ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0892 STEP NO--UR/0064/70/046/005/0341/0343
CIRC ACCESSION NO--AP0137920
UNCLASSIFIED

USSR

UDC 616-099:014.324

ALEKSANDROV, Y. N., BESKHOXHOV, D. I., and DAVYDOV, O. V.

"Pathogenesis of Powder Gas Poisoning"

Moscow, Voenno-Meditsinskiy Zhurnal, No 7, 1970, pp 28-30

Abstract: Animal experiments were conducted to determine the accumulation of pyruvic acid in the blood and the changes of catalase activity of hemolyzed blood resulting from a 15 sec exposure to hydrogen peroxide. It was established that the pyruvic acid level in the blood, representing the accumulation of incompletely oxidized glycolysis and glycogenolysis products, showed an increase after exposure to the powder gases which was directly proportional to the concentration of the gas and to the duration of the exposure. This increase, which is evidently due to a disturbance of oxidation-reduction processes, should be taken into consideration in designing prophylactic or antitoxic agents. The catalase activity of hemolyzed blood also dropped significantly after the animals were exposed to poison gases for 15 min. This decrease was more directly proportional to exposure time than to concentration.

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USSR

UDC 547.341.07

ALEKSANDROV, V. N., and KRIZHECHKOVSKAYA, N. I.

"A Method of Making Diesters of Alkylphosphonic Acids Which Contain the Tert-Butyl Group in the Alkyl Radical"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 27, 1970, Soviet Patent No 279616, Class 12, filed 7 May 69, p 29

Abstract: This Author's Certificate introduces a method of making diesters of alkylphosphonic acids which contain the tert-butyl group in the alkyl radical. As a distinguishing feature of the patent, a dialkyl halide phosphate is interacted with an alkylmagnesium chloride which contains the tert-butyl group.

USSR

UDC 614.712.001.2

GLUKHOMANYUK, A. M., and ALEKSANDROV, V. N., Gas Institute, Acad. Sc.
Ukr SSR

"Purification of Industrial Gas Exhausts of the Production of Antibiotics"
Kiev, Khimicheskaya Tekhnologiya, No 4 (70), Jul/Aug 73, pp 13-15

Abstract: A method for the purification of the exhausts from antibiotic industry has been proposed based on catalytic afterburning. The following catalysts were examined: manganese ore, palladium, cerium-palladium, cobalt-palladium, activated manganese, iron-copper oxide, and copper-manganese, the most effective among them being the palladium and cerium-palladium catalysts.

2/2 '022

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054941

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSIDERATION OF PLANE PROBLEMS OF TENSION OF AN ELASTIC INFINITE STRIP BY FORCES APPLIED AT INFINITY IN THE PRESENCE OF A THIN ELASTIC COVER PLATE ON ONE OF ITS SURFACES. IT IS ASSUMED THAT COMPLETE ADHESION OCCURS BETWEEN THE SURFACE OF THE STRIP AND THE COVER PLATE. THE PROBLEMS ARE REDUCED TO A DETERMINATION OF THE DISTRIBUTION FUNCTION OF THE CONTACT TANGENTIAL STRESSES FROM A CERTAIN INTEGRAL EQUATION, FOR WHICH AN ASYMPTOTIC SOLUTION IS CONSTRUCTED IN THE CASE WHERE THE RELATIVE WIDTH OF THE STRIP IS LARGE AND THE TENSION RIGIDITY OF THE COVER PLATE IS RELATIVELY LARGE. THE RESULTS OBTAINED ARE USED TO DETERMINE THE STRAIN DISTORTION FACTOR OCCURRING DURING STRAIN MEASUREMENTS OF MATERIALS WITH LOW YOUNG'S MODULI BY MEANS OF OHMIC RESISTANCE WIRE STRAIN GAUGES ON A PAPER OR FILM BASE.

UNCLASSIFIED