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CIRC ACCESSION NO--AP0118947 ABSTRACT. A FORMULA FOR THE TEMP. DEPENDENCE OF THE ADIABATIC VIBRATIONAL RELAXATION TIME OF O IS DERIVED. THE ADIABATIC VIBRATIONAL RELAXATION TIME OF O IS DERIVED. THE ADIABATIC VIBRATIONAL RELAXATION TIMES CALCP. BY THIS EQUATION FOR O AGREED WELL WITH EXPTL. BETWEEN 200 AND 3500 DEGREES K. FACILITY: MOSK. OBL. PEDAGOG. INST. IM. KRUPSKOI, MOSCOW, USSR.

UDC 66.028.08

USSR

LYUTFALIYEV, K. A., and ISMAILOV, I. M.

"Apparatus for Microdosing Low-Boiling Liquids"

Avtomatiz. i Kontrol'no-Izmerit. Pribory. Ref. Sb. [Automatized and Control-Measuring Apparatus. Reference Collection], 1972, No. 5, pp 10-11 (from Referativnyy Zhurnal, No 10, Oct 72, 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.925 by V. S. K.)

Translation: A microdosing apparatus of low-boiling liquids has been developed in the Institute of Petrochemical Processes of the Academy of Sciences of the Azerbaydzhan Soviet Socialist Republic. The working of the microdosing apparatus is based on the displacement of the dosed product by gases escaping during the electrolysis of water, it is characterized by absence of moving components in it. The microdosing apparatus consists of a stabilized power source, an electrolyzer, and a microburet, connected to one another through a microsection. The electrolyzer is filled with a 30% aqueous solution of potassium hydroxide, and the dosed liquid is flushed into the microburet. To exclude an effect of the counterpressure of the system on microdosing, a copper tube with a needle from a medical injector is fixed on the end of the microburet. The service experience of the microdosing apparatus in a series of scientific-research

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LYUTFALIYEV, K. A. and ISMAILOV, I. M., Avtomatiz. i Kontrol'no-Izmerit.
Pribory. Ref. Sb., 1972, No 5, pp 10-11

institutes demonstrated its effectiveness and reliability in operation. One
illustr., two biblio. refs.

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186

USSR

UDC 631.542.25:632.7:633.57
ISMAYLOV, M. G., and IBRAGIMOV, G., Azerbaydzhn Scientific Research Institute
of Cotton Growing

"The Role of Defoliation in Lowering the Quantity of Cotton Plant Pests"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 8 (118), 1973, pp 39-40

Abstract: Under conditions prevailing in Azerbaydzhn, the optimal period for defoliation of cotton plants (the first half of September) coincides with massive hibernation migration of arachnoidal mites. Treatment of cotton plants during this period with magnesium chlorate or with butyphos should lower considerably the potential reservoir of the mites and owlet moth larvae on the cotton fields.

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USSR

UDC: 621.317.784

SMOLOV, V. B., ISMAYLOV, Sh. Yu., CHERNYAVSKIY, Ye. A., BOBORDZHGINIDZE, D. D.

"An Analog-Digital Watt Meter"

USSR Author's Certificate Number 290226, filed 29/07/69, published 9/04/71 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 3, 1972, Abstract No 3 A256 P)

Translation: An analog-digital watt meter for alternating current is suggested, containing a dc voltage-to-code converter with balanced tracking, a programmed distributor, and switches. In order to increase operating speed, the watt meter contains an analog memory unit and a digital-analog multiplier consisting of a register and a digitally controlled voltage divider. The input to the voltage-to-code converter is connected to the common terminal of one switch, one terminal of which is connected to the source of voltage being measured, while the other terminal is connected to the output of the digitally controlled voltage divider. One input of the analog memory is connected to the source of current being measured, the other input is connected to the output of the flip-flop of the voltage-to-code converter. The output of the analog memory is connected to the input of the digitally controlled voltage divider; the discrete output of the voltage-to-code converter

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is connected to the register of the digital-analog multiplier, while the other is
connected to the output of the entire device. Two figures.

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UDC 547.341

USSR

ISMAILOV, V. M., NOVRUZOV, S. A., KRASILOV, A. M., and AKHMEDOV, SH. T.
Azerbaijani State University Imeni S. M. Kirov

"Reaction of Phosphorus Pentachloride With Isoprene Hydrochlorides"
Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, p 1197

Abstract: Studying the effect of two electron donating and one electron accepting substituents at the olefinic bond on the phosphorylation the reaction of phosphorus pentachloride with primary and tertiary isoprene hydrochlorides was studied. It has been shown that in both cases the reaction leads to the products of chlorination and phosphorylation. In the process 1-chloromethyl-2-chloro-2-methylpropylphosphonic acid dichloride was synthesized which could undergo dehydrochlorination after prolonged heating to yield 1-chloromethyl-2-methyl-propenyl-1-phosphonic acid dichloride.

USSR

UDC 547.341 + 546.185'131

ISMAILOV, V. M., MOSKVA, V. V., BABAYEVA, T. A., RAZUMOV, A. I., AKHMEDOV, SH. T., ZYKOVA, T. V., and SALAKHUTDINOV, R. A., Kazan' Chemical-Technological Institute Imeni S. M. Kirov, and Azerbaydzhan State University Imeni S. M. Kirov

"Derivatives of Substituted Vinylphosphonic Acids. XV. Reaction of Phosphorus Pentachloride With α, β -Dichlorovinyl Alkyl Ethers"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 1011-1113

Abstract: It was shown that α, β -dichlorovinyl alkyl ethers react with phosphorus pentachloride in an inert solvent such as benzene or carbon tetrachloride at 0-5° forming a complex which after decomposition with hydrogensulfide yields α, β -dichloro- β -alkoxyvinylphosphonic or thiophosphonic acid dichlorides. The reaction is sensitive to temperature; increased temperature lowers the phosphorylation products and increases the byproducts. Analogous derivatives may be obtained by high temperature chlorination of β -alkoxyvinylphosphonic acid dichlorides.

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- 35 -

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~~ISMATLOV, Z. I.~~, RAKHIMOV, G. R.

"Third-Order Subharmonic Oscillations in a Circuit With an Active Non-linear Element"

Kiev, Izvestiya VUZov, Radioelektronika, Vol 15, No 1, Jan 72, pp 93-98

Abstract: The paper is an analytical approach to the question of exciting and sustaining subharmonic waveforms of third order in an electric circuit with a tunnel diode in cases of parallel and series connection of the load impedance. An examination of the frequency characteristic shows it to be generally asymmetric relative to the average frequency. Three figures, bibliography of two titles.

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S. M. Kirov

"Derivatives of Substituted Vinylphosphonic Acids. XVI. Schematic for the
Phosphorylation of Alkylacetates With Phosphorus Pentachloride"

Leningrad, Zhurnal Obshchey Khimii, Vol. 43 (105), No 6, Jun 73, pp 1247-1250

Abstract: Reactions of phosphorus pentachloride with ethylacetate have been investigated using different reagent ratios. It has been established that the reaction products consist of β -chloro- β -ethoxyvinylphosphonic acid dichlorides and phosphonodichloroacetic acid trichlorides. The first step in this reaction is the replacement of the carbonyl oxygen atom with two chlorine atoms yielding α, α -dichloroethylalkyl ether, which upon dehydrochlorination yields α -chlorovinylalkyl ether. The latter reacts with PCl_5 yielding the final products. On the basis of NMR data, it has been shown that the β -chloro- β -ethoxyvinylphosphonic acid dichloride forms in two geometric isomers.

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- 35 -

USSR

UDC 547.26.118+547.341

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"Mixed Esters and Ester Chloroanhydrides of β -Alkoxyvinylphosphonic and -Thiophosphonic Acids"

Baku, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 4, 1972, pp 47-49

Abstract: Mixed dialkyl and alkylaryl esters of β -alkoxyvinylphosphonic acids were synthesized by reacting ester chloroanhydrides with alcohols (1 mole) or phenol at 0-50°C under a current of dry CO₂ in the absence of HCl acceptor. Treatment of the mixed dialkyl esters with PCl₅ yielded the corresponding chloroanhydrides by substitution of Cl for the different alkoxy groups. Conditions were determined for the substitution of Cl atoms for the alkoxy groups (2 on the P atom and 1 on the C atom) by reacting diethyl- β -ethoxyvinylphosphonate with PCl₅ in CCl₄. At 40-50°C one of the alkoxy groups on the P atom is replaced by Cl giving the appropriate ester chloroanhydride. Reaction of the

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ISMAILOV, V. M., et al., Azerbaydzhanskiy Zhurnal, No 4, 1972,
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latter with an additional portion of PCl_5 at $70-80^\circ\text{C}$ results in the corresponding ester chloroanhydride of α -chloro- β -ethoxyvinylphosphonic acid, in which treatment with excess alcohol in the cold replaces one of the Cl atoms on the P atom with an alkoxy group, and on further reaction with PCl_5 at 110°C yields the dichloroanhydride of α -chloro- β -ethoxyvinylphosphonic acid. The above approach may be utilized to replace 2 or 3 of the alkoxy groups with Cl. The resultant chloroanhydrides are readily distilled liquids with a characteristic odor, and are stable on long-term storage in the cold.

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Institute of Chemical Technology imeni S. M. Kirov

"Substituted Vinylphosphonic Acid Derivatives. IX. Study of the Possibility
of Thione-thiol Isomerization of β -Alkoxyvinylthiophosphonic Acid Derivatives"

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Abstract: In an earlier article the authors reported that they found no thione-thiol isomerization in the synthesis of β -alkoxyvinylthionophosphonic acid esters. The present article gives additional data, on the basis of which a thione structure is assigned to the synthesized esters. The possibility of thione-thiol isomerization was studied in the esters themselves, as well as products of their subsequent conversions. The purpose the diethyl ester of β -ethoxyvinylthionophosphonic acid was compared with its thiol isomer the O,S-diethyl ester of β -ethoxyvinylphosphonic acid, obtained by parallel synthesis. The conversion products of these esters were also compared. The results, as well as IR and NMR spectral and thin-layer chromatography data confirm the resistance of the reaction products to thione-thiol isomerization, at least under the conditions of their synthesis and identification.

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Elektron. i Avtomat. 1981, No. 5, pp. 10-11

English transl. of the original. Includes a diagram and a photograph. One
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Institute of Chemical Technology imeni S. M. Kirov

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Institute of Chemical Technology imeni S. M. Kirov

"Substituted Vinylphosphonic Acid Derivatives. V. Alcoholysis of Substituted
Vinylphosphonic and -thiophosphonic Acid Chlorides"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 1, Kan 71, pp 96-99

Abstract: The action of alcohols on α -halo- β -alkoxyvinylphosphonic and
-thiophosphonic acid dichlorides in the presence or absence of a tertiary amine
results in the formation of dialkyl esters of these acids. Alcoholysis of
 α -chloro- β -alkoxyvinylphosphonic acid dichlorides in excess ethanol gives
the corresponding full esters, in which the position of substituents at the
double bond is retained. Alcoholysis of β -chloro- β -ethoxyvinylphosphonic
acid dichloride with excess ethanol gives the ethyl ester of diethylphosphono-
acetic acid. The structure of the resultant compounds was proposed on the
basis of IR and PMR spectra.

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UDC 547.341

MOSKVA, V. V., ISMAILOV, V. M., and RAZUMOV, A. I., Kazan Institute of
Chemical Technology imeni S. M. Kirov

"Substituted Vinylphosphonic Acid Derivatives. III. Hydrolysis of β -Alkoxy-
vinylthiophosphonate Esters to the Corresponding Aldehydes"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 1, Jan 71, pp 90-92

Abstract: Acid hydrolysis of dialkyl esters of β -alkoxyvinylthiophosphonic
acids (5-6 percent HCl, 90-100^o, 3-4 hours) gives the corresponding thiophos-
phonoacetaldehydes. These products were identified from constants, elementary
analysis data, IR spectra, as well as by their 2,4-dinitrophenylhydrazones.

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USSR

UDC 547.341

MOSKVA, V. V., ZYKOVA, T. V., ISMAILOV, V. M., and RAZUMOV, A. I., Kazan
Institute of Chemical Technology imeni S. M. Kirov

"Substituted Vinylphosphonic Acid Derivatives. IV. Geometric Isomerism in Substituted Vinylphosphonic Acid Dichlorides with One Proton at the Double Bond"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 1, Jan 71, pp 93-95

Abstract: Using the NMR method, the authors studied the acid dichlorides of substituted vinylphosphonic acids containing a proton at the double bond in the α - or β -position, viz. α -chloro- β -ethoxyvinylphosphonic, α -bromo- β -ethoxyvinylphosphonic, α -bromo- β -ethoxyvinylthiophosphonic, β -chloro- β -ethoxyvinyl phosphonic and β -methoxy- α -propenylphosphonic acids. Their geometric structure is assigned on the basis of the NMR spectra.

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USSR

GUBERNSKIY, Yu. D. and ISMAILOVA, D. I., Candidate of Medical Sciences Institute of General and Communal Hygiene, Academy of Sciences USSR

"The Effect of Radiant Heating and Cooling on the Immunobiological Potential of the Body"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 5, 1971, pp 29-33

Abstract: Several groups of mice were exposed to infrared heating (intensity of radiation 0.1 cal/cm²/min) or radiant cooling (air temperature 24 to 25°C and body surface temperature of 12 to 14°C) 8 hours daily for 40 days. The animals' immunobiological potential was then assessed from the phagocytic activity of neutrophils and the survival rate after inoculation with a virulent culture of *S. typhimurium*. In another series of experiments, the animals were exposed to infrared heating or radiant cooling both before and after infection to determine the effect on an acute infectious process. The results showed that phagocytosis was more intense and the survival rate much higher in experimental mice than in controls, indicating that the two factors increased the animals' resistance to disease. Exposure to radiant heating did not have a therapeutic effect on the animals when in a febrile state and their survival rate was the same as controls. Radiant cooling, however, was beneficial. Whereas all the control mice were dead by day 8 of the disease, 7.5% of the experimental animals survived to day 11.

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USSR

UDC 669.18:621.746

SOBKIN, S. I., NCSOV, V. A., ISUPOV, V. F., BREUS, V. M., CHEPURNOVA,
A. A., GROMOV, G. P., and ISMANOVA, T. A.

"Certain Factors Influencing the Increase in Density and Purity of Boiler
Steel Ingots"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals--- Collection
of Works), no 75, Metallurgiya Press, 1970, pp 240-251

Translation: A study is made of four ingots melted by the scrap process,
the scrap ore process, and from a high-carbon semi-finished product of
100% cast iron with synthetic slag treatment of the semi-finished product
and steel, cast under a layer of slag with heating of the riser of the
ingot by lunckerite or an exothermic mixture and lunckerite in combination
with heat insulation of the mold with asbestos.

The influence of these factors on the segregation of chemical ele-
ments, gas content, content of nonmetallic inclusions, density and dendritic
structure of the ingot is established. 8 figures; 2 biblio. refs.

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1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--FORMATION OF EUTECTIC AND QUASIEUTECTIC STRUCTURES IN SRSIO
SUB3,CAMGSI SUB2 O SUB6 SYSTEM COMPOSITIONS -U-
AUTHOR--ISMATOV, A.A. **I**
COUNTRY OF INFO--USSR
SOURCE--UZB. KHIM. ZH. 1970, 14(2), 9-11
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--EUTECTIC MIXTURE, CALCIUM COMPOUND, MAGNESIUM COMPOUND,
SILICATE, CRYSTAL STRUCTURE, STRONTIUM, EUTECTIC MIXTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0355 STEP NO--UR/0291/70/014/002/0009/0011

CIRC ACCESSION NO--AP0137459
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137459

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF SUPERCOOLING ON THE MICROSTRUCTURE OF HYPO AND HYPEREUTECTIC COMPNS. IN THE SYSTEM SRSIO SUB3-CAMG-SI SUB2 O SUB6 WAS STUDIED TO VERIFY THE ASSUMPTION THAT THE FORMATION OF BOTH EUTECTIC AND QUASIEUTECTIC UNIFORM FINE GRAINED STRUCTURES MAY TAKE PLACE ALSO IN SILICATE BODIES. SAMPLES WERE PREPD. BY CRYSTN. EITHER FROM THE MELT OR FROM THE GLASS AND THEIR MORPHOLOGY WAS EXAMD. ON A METALLOGRAPHIC MIRCOSCOPE AFTER POLISHING AND ETCHING WITH A MIXT. OF 10 ML CONCD. H SUB2 SIF SUB6 PLUS 10 ML H SUB2 O PLUS 1 MG COCL SUB2. IN THE REGION ADJACENT TO THE EUTECTIC COMPN. (SYSTEM SRSIO SUB3-CAMGSI SUB2 O SUB6) IT IS POSSIBLE TO OBTAIN SILICATE PRODUCTS POSSESSING EUTECTIC OR QUASIEUTECTIC TEXTURES WITH UNIFORMLY DISTRIBUTED AND HIGHLY DISPERSED COMPONENTS WHICH ARE CHARACTERISTIC FOR SUPERCOOLED METALLIC SYSTEMS. FACILITY: INST. KHIM., TASHKENT, USSR.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--MECHANISM OF FORMATION OF DOUBLE ALUMINATES OF RARE EARTHS -U-
AUTHOR--(02)-TOROPOV, N.A., ISMATOV, A.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 590-1
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ALUMINATE, RARE EARTH COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0909 STEP NO--UR/0363/70/006/003/0590/0591
CIRC ACCESSION NO--AP0118078
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118078

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DOUBLE ALUMINATES CANDAL SUB3 O SUB7 AND SRLAAL SUB3 O SUB7 WERE PREPD. BY CONVENTIONAL TECHNOLOGY. THE MECHANISM OF FORMATION OF THE RARE EARTH DOUBLE ALUMINATES DIFFERS FROM THE FORMATION OF GEHLENITE CAAL SUB2 SIO SUB7. UPON SINTERING A MIXT. OF CAO, ND SUB2 O SUB3, AND AL SUB2 O SUB3, CORRESPONDING TO THE STOICHIOMETRIC COMPN. OF CANDAL SUB3 O SUB7, AT 1000DEGREES, 2 COMPS, FORM: CAAL SUB4 O SUB7 AND NDALO SUB3. THE INTERPLANAR SPACINGS FOR THESE COMPS. WERE CALCD. AFTER SINTERING AT 1200DEGREES FOR 4 HR THERE IS 4PERCENT CHEM. FREE CAO PRESENT. WITH INCREASING FIRING TIME, LINES APPEAR ON THE DIFFRACTION PATTERNS CHARACTERISTIC FOR SILICATES OF THE MELILITE GROUP. TOGETHER WITH THE APPEARANCE OF PEAKS OF CANDAL SUB3 O SUB7 AND NDALO SUB3, DIFFRACTION PEAKS OF CAAL SUB2 O SUB4 APPEAR. HOWEVER, THE INTENSITIES OF THE CAAL SUB4 O SUB7 LINES AND OF THE OXIDES DISAPPEAR OR AT LEAST WEAKEN. AFTER THIS, THE ALUMINATES OF CA AND ND WHICH FORMED SLOWLY INTERACT AND COMPLETE THE FORMATION OF THE DOUBLE CA ND ALUMINATE. THE SYNTHESIS OF SR MELILITES OF RARE EARTH PROCEEDS IN AN ANALOGOUS FASHION. ONLY AT HIGH TEMPS. (1550-650DEGREES) DOES THE COMPD. SRLAAL SUB3 O SUB7 FORM. FACILITY: INST. KHIM., TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC 599.322.2

ISMATOV, D., Institute of Zoology, Academy of Sciences Kazakh SSR

"Sexual and Age Composition of the Long-Tailed Marmot (*Marmota caudata*) Population in the Darwaz Mountain Range (the West Pamirs)"

Moscow, Ekologiya, No 4, 1971, pp 92-93

Abstract: During the years 1967-1970 on the northern flank of the Darwaz mountain range in the Sagyrdasht Valley (2,500-2,900 meters above sea level), 329 *Marmota caudata* were captured between hibernation periods. The sexual distribution was 55% male and 45% female, or, counting the young alone (82 individuals or 24.8% of the total), the ratio was 48.9% and 51.1% respectively. The distinct predominance of males in the adult population and of females in the new generation occurs as a general phenomenon, observed also in neighboring regions. This figure reflects, however, the decreased activity of the female in the spring when she is occupied with reproduction and children.

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USSR

ISMATOV, D., Ekologiya, No 4, 1971, pp 92-93

The age structure, as determined from sample trappings, shows a predominance of adults in the spring and of young in the summer. During the fall fattening period, activity remains high only for the females born that year, who take on fat late. The *Marmota caudata* population in this region is characterized by an abundance of adults and a modest proportion of young, indicating the absence of hunting and low fecundity of the indigenous rodents.

2/2

- 27 -

USSR

UDC 669.71.046.44

GAZIYEV, A. I., YEREMIN, N. I., ISMATOV, KH. R.

"Study of Shrinkage of Bauxite Charges During Heating"

Tr. Vses. n.-i. i proyekt. in-ta alyumin., magn. i elektrod. prom-sti (Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 58-63 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G123)

Translation: Results are presented from a study of the shrinkage of bauxite charges during heating. The studies were performed by the method of automated recording of the linear deformation of the briquettes. Synthetic and natural saturated and unsaturated mixtures were studied. These mixtures had the following weight ratios of components: $Al_2O_3/SiO_2 = 2.5-3.8$ and $Al_2O_3/Fe_2O_3 = 1.2-2.5$. The relation between the shrinkage of the charge and its chemical and mineralogical composition at sintering temperatures of 1,160-1,300° is established. There are 2 illustrations and 1 table.

1/1

- 10 -

Acc. Nr:

AP0041897

Abstracting Service:
CHEMICAL ABST.

Ref. Code:

4-76 UR0080

I

85792u Effect of water vapor on the completeness of nitric acid regeneration during the thermal decomposition of aluminum nitrate nonahydrate. Abdullaev, A. B.; Ismatov, Kh. R. (USSR). *Zh. Prikl. Khim. (Leningrad)* 1970, 43(1), 168-7 (Russ). During the thermal decompn. of $Al(NO_3)_3 \cdot 9H_2O$, >99% of the N can be recovered as HNO_3 and N_2O_5 . The decompn. is achieved best at 450° within 10 min in presence of H_2O vapor. In absence of H_2O , the nitrate tends to decomp. into nonrecoverable lower oxides of N. A. P. Mueller

LP

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REEL/FRAME
19751782

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1/2 008 UNCLASSIFIED PROCESSING DATE--020CT70
TITLE--UNSATURATED ETHERS XXXI. CONDENSATION OF BETA, ETHOXYACROLEIN ACETAL
WITH VINYLALKYL ETHERS AND 1, ALKOXYDIENES. NEW METHOD FOR SYNTHESIZING
AUTHOR--(03)-MAKIN, S.M., ISMAYL, A.A., KEREZHNYA, M.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3) 455-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, CONDENSATION REACTION, ETHER, ACETAL,
OXYGEN COMPOUND, DIENE, IMIDE, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1573

STEP NO--UR/0366/70/006/003/0455/0459

CIRC ACCESSION NO--AP0112567

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112567

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF ACRYLEIN OR ITS DIACETAL WITH N-BROMOSUCCINIMIDE AND EtOH GAVE EtOCH SUB2-CHBRCH(OET) SUB2, WHICH WAS DEHYDROBROMINATED TO EtOCH: CHCH(OET) SUB2 (I). THE CONDENSATION OF I WITH H SUB2 C:CHOET OR EtOCH:CHCH:CH SUB2 IN THE PRESENCE OF ZHCL SUB2 AND BF SUB3 .ET SUB2 O GAVE, RESP., EtOCH:CHCH(OET)CH SUB2 CH(OET) SUB2 (II) OR EtOCH:CHCH(OET)CH SUB2 CH:CHCH(OET) SUB2 (III). THE CONDENSATION OF H SUB2 C:CHOET WITH III IN THE PRESENCE OF BF SUB3 .ET SUB2 O GAVE EtOCH:CHCH(OET)CH SUB2 CH:CHCH(OET)CH SUB2 CH(OET) SUB2 (IV). THE REACTIONS OF I-IV WITH RR PRIME1 NH IN 18PERCENT SOLN. GAVE (RR PRIME1 N-(CH:CH) SUBN CH:N PRIME POSITIVE RR PRIME1)CL PRIME NEGATIVE, (R, R PRIME1, AND N GIVEN): H, PH, 1; H, PH, 2; ME, PH, 2; H, PH, 3; ME, PH, 3; ME, PH, 4. THE PREPN. OF (X(CH:CH) SUBN X PRIME POSITIVE)CL PRIME NEGATIVE (WHERE X IS TETRAHYDROQUINOLINO AND N IS 2, 3, OR 4) WAS CARRIED OUT ANALOGOUSLY.

UNCLASSIFIED

USSR

UDC 519.217

ISMAYLOV, A. I.

"The Distribution of the Busy Period of a Mixed Queueing System"

Bol'shiye Sistemy. Massovoye Obsluzh. Nadezhnost' [Large Systems. Queueing. Reliability -- Collection of Works], Moscow, Nauka Press, 1970, pp 305-312
(Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V54).

No Abstract.

1/1

USSR

USSR 1986 1.1.1.1.1

OSOBYIN, G. S., SLEPCH, V. M., KHARIN, M. YA., and POZDNYAK, E. S.
Physics Institute, Academy of Sciences AN SSSR, Ufa

"Pseudobinary System PbSe-AsSe "

Moscow, Zhurnal Fizicheskoy Khimii, Vol 55, No 3, No 72, p 91.

Abstract: The PbSe-AsSe system was studied; both components of the system melt without peritectic decomposition, undergoing no phase conversion. With the component ratio at 1:1 a semiconducting compound PbAsSe is formed with a congruent melting point at 610°C . It crystallizes in a tetragonal lattice with $a = 7.644$, $c = 3.433$ Å; piezoelectric tensor $\pi = 6.19$ and $\pi_{11} = 6.21$ $\mu\text{m}^2/\text{cm}^2$. This compound has no ferroelectric zone. Solid solutions of the V type form on the basis of PbSe with up to 10 mole-% of AsSe . The PbSe crystals are more microscopically than those of PbSe , while the PbAsSe crystals are less anisotropic.

1/1

USSR

UDC 541.183

ISMAILOV, N. P., MANSUROV, P. KH., and RUSTAMOV, KH. R., Tashkent Polytechnic Institute

"Thermodynamics of Ion-exchange Sorption of Anabasine and Lupinine on an H-Cation Exchanger"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 8, Aug 70, pp 2064-2066

Abstract: The authors studied thermodynamic potential, enthalpy and entropy in the sorption of anabasine and lupinine on an H-cation exchanger. Anabasine hydriodide and lupinine hydrochloride with a melting point of 253 and 212° C respectively were used. The experiments were staged on cation exchanger KU-2 under static conditions at $20 \pm 1^\circ$ C. Thermodynamic functions were determined through the thermodynamic ion-exchange equilibrium constant. The results indicate selective sorption of anabasine and lupinine on the cation exchanger.

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USSR

UDC 632.95

ISMAYLOV, R. G. A., GUSEYNOV, D. M., MEKHTIYEV, S. D., SHCHEGOL', Sh. S.,
ISAYEVA, F. G. A., KONYSHEV, I. N.

"Plant Growth Regulator"

USSR Author's Certificate No 334961, Filed 30/07/69, Published 24/05/72
(Translated from Referativnyy Zhurnal Khimiya, No 24(II), 1972, Abstract
No 24N643 P, by T. A. Belyayeva)

Translation: It is suggested that the Na-salt of octyltoluic acid (I) be used as a plant growth regulator. I is produced by alkylation of xylenes with diisobutylene with subsequent oxidation of tert-octylxylene with O_2 and neutralization of the acid with an aqueous solution of NaOH or soda. The influence of I on the coleoptiles of wheat sprouts and the growth of winter wheat roots is demonstrated.

1/1

1/2 009 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--REFRACTOMETRIC DETERMINATION OF FURFURAL CONTENT IN RAFFINATE AND
EXTRACT SOLUTIONS OF THE SELECTIVE REFINING OF OILS -U-
AUTHOR-(04)-ISMAYLOV, R.G., KHARKOVSKIY, YU.I., MIRZOYEV, S.O.,
MUGANLINSKIY, F.F.
COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(2), 57-60

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--FURFURAL, PETROLEUM PRODUCT, CHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1634

STEP NO--UR/0152/70/013/002/0057/0060

CIRC ACCESSION NO--AT0118613

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0118613

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RAFFINATE AND EXT. WERE EXTD. WITH WATER, ADDING SOME PETROLEUM ETHER TO PREVENT FORMATION OF EMULSION. FURFURAL (I) WAS PRESENT IN THE AQ. EXTS. SMALLER THAN OR EQUAL TO 2 WT. PERCENT. THE DETD. ERRORS WERE SMALLER THAN OR EQUAL 1PERCENT ABS. THE DEPENDENCE OF THE CONC. OF I ON THE REFRACTOMETRIC INDICATIONS IS GRAPHICALLY PRESENTED. FACILITY: AZERB. INST. NEFTI KHIM. IM. AZIZBEKOVA, BAKU, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THERMAL CONDUCTIVITY OF COMPLEX A PRIMEI B PRIMEV C PRIMEVI SUB2
SEMICONDUCTORS IN SOLID AND LIQUID STATES -U-
AUTHOR--(03)-GADZHIYEV, G.G., MAGOMEDOV, YA.B., ISMAYLOV, SH.M.
COUNTRY OF INFO--USSR
SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 8(1), 213-15
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--THERMAL CONDUCTIVITY, SEMICONDUCTOR MATERIAL, THERMAL EFFECT,
COPPER COMPOUND, ARSENIC COMPOUND, ANTIMONY COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/0921 STEP NO--UR/0294/70/008/001/0213/0215
CIRC ACCESSION NO--AP0107450
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 023

CIRC ACCESSION NO--AP0107450

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMAL COND. (LAMBDA) OF CUSBTE SUB2, CUSBS SUB2, AND CUASSE SUB2 WAS MEASURED IN BOTH SOLID AND LIQ. STATES AT 300-1000DEGREESK. THE LAMBDA OF THE 3 COMPS. DECREASES WITH INCREASE IN TEMP. IN THE SOLID STATE GREATER THAN OR EQUAL TO 300DEGREESK AND IT INCREASES WITH INCREASE IN TEMP. IN THE LIQ. STATE LESS THAN OR EQUAL TO 1000DEGREESK. THE MIN. IN LAMBDA IS IN THE SOLID STATE FOR CUSBTE SUB2, THE M.P. IN THE SOLID STATE FOR CUSBS SUB2, AND IN THE LIQ. STATE FOR CUASSE SUB2. THE JUMP IN LAMBDA AT THE M.P. IS POS. FOR CUSBTE SUB2 AND CUSBS SUB2 AND NEG. FOR CUASSE SUB2. CUASSE SUB2 IS AN INTERMETALLIC SEMICONDUCTOR WITH A METALLIC COND. AND THE INTRINSIC COND. OF CUSBTE SUB2 AND CUSBS SUB2 BEGINS AT 500 AND 550DEGREESK, RESP. ALL 3 COMPS. ARE INSTRINSIC SEMICONDUCTORS IN THE LIQ. STATE. THE COND. OF CUSBTE SUB2 AND CUSBS SUB2 CONSISTS OF THE PHONON AND ELECTRON CONDS. IN THE SOLID STATE AND IN THE INTRINSIC COND. REGION THERE IS AN ADDNL. COND. DUE TO THE BIPOLAR THERMAL DIFFUSION. THE WIDTH OF THE FORBIDDEN ZONE WAS CALCD. FOR CUSBTE SUB2 AS 0.16 EV AND FOR CUSBS SUB2 AS 0.42 EV. OVER THESE 3 CONDS., THE PHONON COND. IF SOLID CUASSE SUB2 IS SUPERIMPOSED. FACILITY: ISNT. FIZ., MAKHACHKALA, USSR.

UNCLASSIFIED

USSR

UDC 621.373.001

ISMAILOV, T. K. *I*

"A Method of Solving the Problem of Optimal Efficiency of a High Frequency Oscillation Doubler"

Tekhn. tererri ufrunda, Za tekhn. progress (For Technical Progress), 1970, No 3, pp 7-9 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D303)

Translation: The problem is solved beginning with the condition of optimal efficiency of the frequency doubler for which the increase in efficiency is limited to the limiting allowable power of the losses in the generator tube grid. The solution was found on a computer. The results of the calculation are presented for the triode frequency doublers GU-4A and GU-5A. There are two illustrations, one table and a seven-entry bibliography.

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USSR

UDC 547.241 + 546.185.131

MOSKVA, V. V., ISMAILOV, V. M., NOVRUZOV, S. A., RAZUMOV, A. I., ZYKOVA, T. V., AKHMEDOV, Sh. T., and SALAKHUTDINOV, R. A., Kazan' Chemical Technological Institute imeni S. M. Kirov and Azerbaydzhan State University imeni S. M. Kirov

"Phosphorylation of α,α -Dichlorodiethyl Ether With Phosphorus Pentachloride"

Leningrad, Zhurnal Obschey Khimii, Vol 43 (105), No 9, Sep 73, pp 2085-2086

Abstract: The reaction of α,α -dichlorodiethyl ether with PCl_5 leads to the formation of a complex which upon decomposition yields dichlorophosphoacetic acid trichloride, and β -chloro- β -ethoxyvinylphosphonic acid dichloride in two geometric isomers.

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- 33 -

USSR

UDC 547.341+547.26.118

ISMAILOV, V. M., NOSKVA, V. V., BABAYEVA, T. A., AKHMEDOV, SH. T., RAZUMOV, A. I.,

"Amido Acid Chlorides and Ether Amides of β -Alkoxyvinyl Phosphonic and Thiophosphonic Acids"

Baku, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 2 (84), 1973, pp 52-54

Abstract: Partial amidozation of acid dichlorides of β -alkoxyvinyl phosphonic and thiophosphonic acids leads to obtaining of dialkylamido acid chlorides which with alcohol give ester dialkylamides of β -alkoxyvinyl phosphonic acids. These ester dialkylamides were also obtained by amidizing ether acid chlorides and by alcoholysis of tetraalkyl diamides of these acids. The experimental procedures for synthesizing diethylamides of the acid chloride of β -ethoxyvinyl phosphonic and thiophosphonic acids and the ethyl ester of diethylamide of β -ethoxyvinyl phosphonic acid are given with the yields and other physical and chemical characteristics. A schematic is given for the mutual transformations of the amides, amide acid chlorides, ether acid chlorides and ether amides.

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USSR

UDC 547.341 + 546.185'131

MOSKVA, V. V., ISMAYLOV, V. M., and RAZUMOV, A. I., Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Substituted Vinylphosphonic Acid Derivatives. II. Interaction of Phosphorus Pentachloride With Acetals"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 7, Jul 70, pp 1489-1492

Abstract: The article clarifies an earlier communication by the authors which imprecisely gave the structure of the products resulting from the decomposition of complexes of acetals of acetaldehyde with phosphorus pentachloride by sulfur dioxide. Experiments were repeated many times and IR and PMR spectra were used to identify the reaction products. The interaction of acetals of acetaldehyde with phosphorus pentachloride in benzene or carbon tetrachloride at 5-25° results in the formation of a complex, the subsequent decomposition of which with sulfur dioxide or hydrogen sulfide at 5-10° leads to the formation of β -alkoxyvinylphosphonic and β -alkoxyvinylthiophosphonic acid dihalo-

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USSR

MOSKVA, V. V., et al., Zhurnal Obshchey Khimii, Vol 40, No 7, Jul 70,
pp 1489-1492

rides respectively. Thermal decomposition of the acetal-phosphorus
pentachloride complex results in the formation of α -chloro- β -alkoxy-
vinylphosphonic acid dichlorides. The article suggests a mechanism
for the formation of these products.

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USSR

UDC 547.944:945

UMAROV, Kh. S., ISMAILOV, Z. F., and YUNUSOV, S. Yu., Institute of Plant Chemistry, UzbekSSR Academy of Sciences

"Thalictrum Flavum Alkaloids. The Structure of Thalflavin"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 4, 1970, pp 444-446

Abstract: Two alkaloids were isolated from Th. flavum L. roots. The new alkaloid thalflavin was obtained in the form of prismatic crystals melting at 132-133°. Its structure, as derived from spectral analysis is most probably 1-oxy-N-methyl-5-methoxy-6,7-methylenedioxy-tetrahydroisoquinoline. The other alkaloid was obtained in the form of a yellow, amorphous powder, melting at 105-106°C. It was found to be thalicarpine.

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1/2 012 UNCLASSIFIED PROCESSING DATE--27NOV76
TITLE--MASS SPECTROMETRIC STUDY OF THE STRUCTURE OF FETIDINE -U-
AUTHOR--(02)--ISMAILOV, Z.F., YUNUSOV, S.YU.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PRIR. SOEDIN. 1970, 6(1), 142
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MASS SPECTRUM, MOLECULAR STRUCTURE, HETEROCYCLIC NITROGEN
COMPOUND, TERTIARY AMINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0187 STEP NO--UR/0393/70/006/001/0142/0142
CIRC ACCESSION NO--AP0130946
UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0130946
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF FETIDINE (I) WAS
CONFIRMED BY MASS SPECTROMETRY. FACILITY: INST. KHIM. RAST.
VESHCHSTV, TASHKENT, USSR.

UNCLASSIFIED

1/2 010
UNCLASSIFIED
TITLE--STRUCTURE OF THALPHINE AND THALPHININE -U- PROCESSING DATE--04DEC70
AUTHOR--(03)-ABDIZHABBAROVA, S., ISMAILOV, Z.F., YUNUSOV, S.YU.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PRIR. SOEDIN. 1970, 6(2), 279-80
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PROCESSED PLANT PRODUCT, ALKALOID, CHEMICAL STRUCTURE, UV SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0439 STEP NO--UR/0393/70/006/002/0279/0280
CIRC ACCESSION NO--AP0132661
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132661

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF THE THALICTRUM
FOETIDUM (MEADOW RUE) ALKALOIDS TALPINE (I) AND THALPHININE (II) WAS
ESTABLISHED BY UV SPECTRA AND THE HOFMANN DEGRADATION. KMNO SUB4
OXIDN. OF I YIELDED THE 2,METHOXY,1,1 PRIME DIPHENYLOXIDE, 5,4 PRIME
DICARBOXYLIC ACID (SIC), M. 290DEGREES; ME ESTER, M. 91-2DEGREES.
CLEAVAGE OF I WITH NA LIQ. NH SUB3 AFFORDED LAUDANIDINE AND
O-METHYLARMEPAVINE. FACILITY: INST. KHIM. RAST. VESHCHSTV,
TASHKENT, USSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--230CT70
TITLE--TOLUENE VISCOSITY AT HIGH PRESSURES AND TEMPERATURES -U-

AUTHOR--(03)-AKHUNDOV, T.S., ISMAILZADE, SH.M., TAIROV, A.D.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(2), 79-82

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FLUID VISCOSITY, TOLUENE, HIGH PRESSURE, ISOTHERM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1026

STEP NO--UR/0152/70/013/002/0079/0082

CIRC ACCESSION NO--AT0119893

UNCLASSIFIED

MAMEDYAROV, O. S., ZHABINSKIY, YU. V., ISMAYLOVA, T. A.

"Application of the Method of Experimental Planning for Optimizing the Operating conditions of Electric Power Distribution Systems"

Tekh. tereggi ugrundu, Za tekhn. progress (For Technical Progress), 1970, No 11, pp 12-14 (from RZh-Elektrotehnika i Energetika, No 4, Apr 71, Abstract No 4 Ye 291)

Translation: For the standard distribution network, the problem of insuring minimum active power losses consists in determining the location and power of the reactive power losses when defining the feed voltage regulation laws. Restrictions are given in the form of tolerances of voltage deviations from the rated voltage at the buses of all the consumers. There are 2 illustrations and a 2-entry bibliography. [Azerbaijdzhan Scientific Research Institute of Power Engineering, Baku]

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0119893

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VISCOSITY OF 99.96PERCENT
TOLUENE WAS DETD. (A. M. MAMEDOV, ET AL., 1966) ON 11 ISOTHERMS AT
23.76-275DEGREES AND PRESSURES SMALLER THAN 400 BARS. THE VISCOSITY
WAS ALSO CALCD. IN THE SAME RANGE FOR EACH 10DEGREES AND 10 BARS BY
MEANS OF AN EQUATION. THE DETN. ERROR WAS LESS THAN 1.2PERCENT.
EXPTL. AND CALCD. DATA ARE PRESENTED. FACILITY: AZERB. INST.
NEFTI KHIM. IM. AZIZBEKOVA, BAKU, USSR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--COMPOUND BANDGA SUB3 D SUB7 -U-
AUTHOR--ISMOTOV, A.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 178
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--CHEMICAL SYNTHESIS, OPTIC PROPERTY, X RAY ANALYSIS, HARDNESS,
BARIUM COMPOUND, NEODYMIUM COMPOUND, GALLIUM COMPOUND, INORGANIC CRYSTAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0593 STEP NO--UR/0363/70/005/001/0178/0178
CIRC ACCESSION NO--AP0105576
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105576

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SAMPLES WERE SYNTHESIZED FROM
ND SUB2 O SUB3, BACO SUB3, AND GA SUB2 O SUB3 POWDERS BY HEATING AT
1400DEGREES FOR 8 HR. THE PRODUCT IS SINGLE PHASE AND OPTICALLY
UNIAXIAL. HOWEVER, IN CONTRAST TO CANDAL SUB3 O SUB7, THE CRYSTALS
STUDIED HAVE A POS. OPTICAL SIGN AND NEG. ELONGATION. X RAY
INVESTIGATIONS ALSO CONFIRMED THE EXISTENCE OF THE INDIVIDUAL PHASE
BANDGA SUB3 O SUB7. ITS D. AS DETD. PYCNOMETRICALLY IN PHME AT
20DEGREES WAS 5.70 G-CM.PRIME3, AND ITS X RAY D. WAS 5.77 G-CM.PRIME3.
THE MICROHARDNESS AT 50-G LOADS WAS 500 KG-MM.PRIME2, WHICH CORRESPONDS
TO THE HARDNESS OF APATITE ON THE MOHS SCALE. BANDGA SUB3 O SUB7, MELTS
AT 1480DEGREES, IS STABLE FROM ROOM TEMP. TO THE M.P., AND ACCORDING TO
PRELIMINARY DATA DOES NOT HAVE OTHER POLYMORPHIC PHASES.

UNCLASSIFIED

USSR

UDC 662.311.1

ASSOVSKIY, I. G., ISMIRANOV, A. G., Moscow

"Combustion of Powders Under Light Irradiation"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 5, 1971, pp 70-77.

ABSTRACT: The work available in the literature on unstable processes under the influence of light irradiation is dedicated primarily to the problem of ignition. This work presents an attempt to evaluate the dependence of powder combustion rate on the intensity of light radiation. Cases of stable combustion and the mode of combustion with harmonically changing light flux are studied. It is assumed that the light flux striking the surface of the powder is absorbed in the condensed phase with constant transparency index. It is demonstrated that in the stable mode, light irradiation is equivalent to a certain increase in the initial powder temperature. This allows the use of data on stable combustion without irradiation. Unstable combustion with periodically changing light flux was described using a model suggested by B. V. Novochilov. A correction is produced to the mean combustion rate, proportional to the square of the amplitude of the light flux. In the case of exponential dependence of burning rate on initial temperature, this correction is negative.

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1/2 041 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INVESTIGATION OF TRAJECTORIES OF CLOSE FLIGHTS AROUND THE MOON WITH
REENTRY INTO THE EARTH'S ATMOSPHERE. II -U-
AUTHOR--(03)-IIIN, V.A., DEMESHKINA, V.V., ISOTOMIN, N.A.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKIE ISSLEDOVANIIA, VOL. 8, MAY-JUNE 1970, P. 365-376

DATE PUBLISHED-----70

SUBJECT AREAS--SPACE TECHNOLOGY

TOPIC TAGS--TRAJECTORY, ATMOSPHERIC REENTRY, APPROXIMATION METHOD, LUNAR
SATELLITE, ORBIT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605013/C08 STEP NO--UR/0293/70/008/000/0365/0376

CIRC ACCESSION NO--AP0140378

UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140378
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ANALYSIS OF THE SELENOCENTRIC MOTION OF A SPACE VEHICLE, SHOWING THE INVARIANCE OF THE CHARACTERISTICS OF THIS MOTION WITH RESPECT TO A SUBSTITUTION OF GEOCENTRIC APOGEE FLIGHTS FOR NONAPOGEE FLIGHTS AND VICE VERSA. THE DIFFERENCE BETWEEN PURELY NONAPOGEE (OR PURELY APOGEE) GEOCENTRIC FLIGHTS AND 'MIXED' (PARTLY APOGEE AND PARTLY NONAPOGEE) GEOCENTRIC FLIGHTS IS OUTLINED. ALL POSSIBLE CLASSES OF LUNAR ORBITAL TRAJECTORIES ARE EXAMINED, AND THE CLASSES OF TRAJECTORIES OF PRACTICAL INTEREST ARE IDENTIFIED. IT IS FOUND THAT LUNAR ORBITAL TRAJECTORIES COMPUTED BY AN APPROXIMATE METHOD CORRELATE WELL WITH COMPUTATIONS BY THE METHOD OF SPHERES OF INFLUENCE.

UNCLASSIFIED

USSR

UDC 576.851.42

ISPENKOV, A. Ye., ROVNEYKO, Z. P., and OB"YEDKOV, G. A., Belorussian Institute of Veterinary Medicine

"Protein, Protein Fractions, and Nucleic Acids in Calves Experimentally Infected with Brucellosis, Pathogen, Br. abortus bovis strain, No 544"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Sel'skokhozyaystvennykh Nauk, No 4, 1972, pp 97-101

Abstract: The dynamics of protein, protein fractions, and nucleic acids in 4- to 5-month-old calves experimentally infected with Br. abortus bovis strain No 544 and 2260 were studied. The microorganisms were injected subcutaneously in the neck region 3 times in doses of 100,000, 2 billion, and 3 billion cells at 20- to 30-day intervals. The animals developed a latent form of brucellosis, with no clinical symptoms of the disease and with mild immunobiological reactions. The maximum mean agglutinin titer was not recorded until the 28th day after the second infection, 1:110. Complement-fixing antibodies were not detected at any time during the study.

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- 75 -

USSR

UDC: 531.01

ISMAGILOVA, A.M.

"Investigation of Gyrocompass Operation With Rectiliness Movement of the Ship"

Moscow, Tr. Sev.-Zap. Zaoch. Politekhn. In-t (Transactions of North-Western Correspondence Polytechnic Institute), 1972, No 20, pp 75-78 (from Referatyonnyy Zhurnal-Mekhanika, 1973, Abstract No 2A132 by N.P. Stepanenko)

Translation: Somewhat simplified linear equations of motion of the gyrocompass with electromagnetic correction are considered. The solution of these equations is obtained for the case of no correcting moments and constant ship's speed and latitude. The law of variation of correcting moments is established for the case of random ship's speed so as to have a motion with the suspension axis of the tracking sphere in the meridional plane and the axis of the sensitive element in the horizontal plane. The approximate values of the deviation angle of the tracking system axis from the horizontal and of the sensitive element axis from the meridional planes are obtained.

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- 96 -

USSR

ISPIRYAN, K. A., KAZANDZHIAN, S. T.

"Transition Radiation and the Optical Properties of Substances in the Vacuum Ultraviolet Range"

Leningrad, Fizika Tverdogo Tela, Vol 15, No 5, 1973, pp 1551-1555

Abstract: Experimentally measured values of the real and imaginary parts of the dielectric constants of Al, Ge, and RbF were used to calculate the spectra and angular distributions of the transition radiation in the energy range of the primary particles $\gamma = E/mc^2 = 10-10^4$ in the vacuum ultraviolet range. The optical constants of the substances can be determined by using the transition radiation in this frequency band.

In contrast to the studies of H. Ehrenreich, et al. [Phys. Rev., No 132, 1918, 1963], in which the characteristics of the transition radiation were investigated for different elements in the optical frequency band integrated with respect to angles or with respect to radiation frequencies, in the present paper a study was made of the differential characteristics in the vacuum ultraviolet range inasmuch as in real experiments the detectors record the radiation for narrow angular and frequency intervals. The proposed method is especially valuable for determining the reflectivity of substances for which direct measurements of the reflectivity is complicated.

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2/2 019

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0127570

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM OF SEPG. PARTICLES FROM T E TRANSITION RADIATION WAS SOLVED. A GAMMA DETECTOR OF TORIDAL FORM WAS USED. CHARGED PARTICLES PASSED THROUGH A CENTRAL OPENING OF THE DETECTOR AND THE PART RADIATION PASSING THROUGH THE OPENING SIMULTANEOUSLY WITH THE PARTICLES WAS NOT REGISTERED. THIS DETECTOR WAS EXAMD. BY E OF 0.4-4 GEV. THE DEVICE WAS ADJUSTED BY A LASER. THE RADIATION WAS REGISTERED IN THE REGION OF HW IS GREATER THAN OR EQUAL TO 15 KEV FREQUENCIES. THE EFFICIENCY (EPSILON) OF E REGISTRATION IS SHARPLY DEPENDENT ON THE E ENERGY; UNDER THE CONDITIONS USED, EPSILON WAS SIMILAR TO 0.1. BY USING DETECTORS WHICH CAN RECORD GAMMA QUANTA OF LOWER ENERGIES, THE HIGH ENERGY PARTICLES CAN BE REGISTERED WITH EPSILON SIMILAR TO 1. THE DETECTOR CAN BE USED FOR IDENTIFYING PARTICLES OF DIFFERENT MASSES WITH A HIGH RESOLN. POWER IN THE REGION OF GREATER THAN OR EQUAL TO GEV PULSES.

UNCLASSIFIED

1/2 019

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--EXPERIMENTAL STUDY OF A DETECTOR OF ULTRAHIGH ENERGY PARTICLES USING X RAY TRANSITION RADIATION -U-

AUTHOR--(041)-ALIKHANYAN, A.I., ISPIRYAN, K.A., OGANESYAN, A.G., TAMANYAN, A.G.

"APPROVED FOR RELEASE: 08/09/2001" CIA-RDP86-00513R002201120006-7"

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970; 11(7), 347-9

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TRANSITION RADIATION, GAMMA DETECTOR, HIGH ENERGY PARTICLE, CHARGED PARTICLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/2208

STEP NO--UK70386/70/011/007/0347/0349

CIRC ACCESSION NO--AP0127570

UNCLASSIFIED

USSR

ISPIRYAN, N. P., Yerevan Polytechnical Institute

"Concerning the Influence of Nonlinear Polarization on the Coefficient of Amplification of Ultrasound in Piezoelectric Semiconductors"

Yerevan, Izv. Akad. Nauk ArmSSR, Fizika, Vol 7, No 3, 1972, pp 206-209

Abstract: The author accounts for the effect of nonlinearity in polarization on the coefficient of amplification of ultrasound in piezoelectric semiconductors. The region of weak nonlinearity is considered in which polarizability is given by

$$\chi = \chi_0 + \gamma E_p^2,$$

or in other terms it is assumed that

$$\epsilon = \epsilon_0 + 4\pi\gamma E_p^2,$$

where

$$\epsilon_0 = 1 + 4\pi\chi_0.$$

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USSR

ISPIRYAN, N. P., Izv. Akad. Nauk ArmSSR, Fizika, Vol 7, no 3, 1972, pp 206-209

The quantities ϵ_0 and χ_0 are respectively the permittivity and polarizability of the piezoelectric semiconductor in fields where nonlinearity does not yet make itself felt, and E_p is the strength of the polarizing field. It is shown that the amplification factor decreases with an increase in the strength of the polarizing field and that there is also a reduction in the frequency of maximum amplification. The nonlinear effect should be observable in experiments in which a laser beam with a polarizing field intensity of about 10^5 W/cm is used. The author thanks Doctor of Physical and Mathematical Sciences V. S. Sardaryan for formulating the problem.

2/2

- 19 -

Microbiology

USSR

UDC 576.851.555.097.29.098.31

ISPOLATOVSKAYA, M. V., TOKINOVA, T. N., CHERIKOVSKAYA, YE. H., and BORIS'POLITS, Z. I., Laboratory of the Biochemistry of the Metabolism of Pathogenic Microbes, Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"Neuramidase in the Cells and Toxins of *Cl. Perfringens*"

Moscow, *Voprosy Meditsinskoy Khimii*, Vol 19, No 1, Jan/Feb 73, pp 49-54

Abstract: Neuramidase is present in the cells and toxins of synchronous cultures of *Cl. perfringens*. Low toxicity strains have a more active cellular neuraminidase, while high toxicity strains have a more active extracellular neuraminidase. The peak activity of cellular neuraminidase occurs with 3-5 hrs of cell growth, while the activity of extracellular neuraminidase reaches its maximum after 9-12 hrs of cell growth and remains at this level for at least 24 hrs. The latter has an optimum pH of 4-5 and a high immunogenic activity, and it is 50% inactivated by heating at 60°C for 1 hr. The cellular neuraminidase has an optimum pH of 5-9, cannot be neutralized with antitoxin serum, and is thermostable. Both neuraminidases are equally resistant to EDTA and cysteine and sensitive to salts of heavy metals, urea, ethylenechlorhydrin, sodium dodecylsulphate, and polyanions. Both pass through Sephadex filters at the same rate.

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USSR

UDC 576.851.555.098.31:577.156

TEL'BUKH, V. P., BLAGOVESHCHENSKIY, V. A., ISPOLATOVSKAYA, M.V., and BORISHPOLETS, Z. I., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Some Characteristics of Proteolytic Systems of *Cl. perfringens* Type A"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971, pp 93-97

Abstract: The relationship between the proteolytic and lecithinase activities of *C. perfringens* type A cells was studied during the first hours of growth on a casein-mushroom medium containing B complex vitamins. The level of proteolytic and lecithinase activities was high in the initial growth stages (2-hour culture), but after 6 hours no lecithinase activity could be detected. In another series of experiments, lecithinase was destroyed by the proteolytic enzymes present in resting cells of a 2-hour culture at both acid and weakly alkaline pH values. Lecithinase activity decreased even when incubated in an acid medium with endoproteinase isolated from cells of 2- and 6-hour cultures. The high proteolytic activity at both acid and alkaline pH suggests the existence of two endoproteinases or one proteinase with a wide spectrum of action. Proteinase was resistant to trypsin as an inhibitor. Proteinase treated with urea did not lose its activity when heated (to 80°C for 15 min), whereas untreated proteinase became half as active after heating.

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USSR

UDC 615.372:576.851.555].015.45:
[612.11+612.112.3+612.419

ANOSOV, I. Ya., LARINA, I. A., and ISPOLATOVSKAYA, M. V., Institute of
Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences
USSR

"Effect of Lecithinase C From Clostridium perfringens Type A on the Blood,
Bone Marrow, and Phagocytic Activity of Leukocytes of Guinea Pigs Immunized
With Analecithinase"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971,
pp 65-69

Abstract: Guinea pigs immunized twice with analecithinase received a lethal
dose of lecithinase C from Cl. perfringens type A 14 days later. Aside from
slight lysis of erythrocytes accompanied by brief acceleration of the ESR,
the peripheral blood and bone marrow cells did not undergo the progressive
qualitative and quantitative changes observed in the nonimmunized control
after intramuscular injection of 1 MLD of lecithinase C or a culture of
Cl. perfringens type A. Immunization of the guinea pigs with analecithinase
also protected the phagocytic activity of the leukocytes from the hemolytic
action of lecithinase C. The effect was the same as that in animals that
received Cl. perfringens type A toxoid. The microbes phagocytized by the
leukocytes were digested, i.e., the microbial cells completely disintegrated.

USSR

UDC 576.851.555.097.29:576.851.555.098.31

ISPOLATOVSKAYA, N. V., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"Purification and Some Properties of Lecithinase from *Cl. perfringens*"

Moscow, Voprosy Meditsinskoy Khimii, Vol 17, No 2, Mar/Apr 71, pp 137-141

Abstract: It was established that the lecithinase of *Cl. perfringens* (the lethal factor of the toxin) can be purified to a considerable extent by precipitation with BuOH. The partly purified enzyme dissolved in an 0.05 M acetate buffer (pH 5.6) was precipitated by adding BuOH in the ratio 1:1, whereupon the precipitate that formed was dissolved in an 0.001 M solution of Zn Cl₂ and the pH of the solution simultaneously brought to 9.4-9.6. The

enzyme, which contains Zn, was stabilized by the action of BuOH in the presence of Zn⁺⁺. BuOH did not cause denaturation. In serological tests conducted on the purified enzyme, a single line of precipitation was obtained with the immune serum for *Cl. perfringens* toxin and its lecithinase. On ultracentrifuging the enzyme formed a single protein sedimentation peak. The degree to which the lecithinase had been freed of collagenase and hyaluronidase in the early stage of purification was determined as described in the literature.

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USSR

ISPOLATOVSKAYA, M. V., Voprosy Meditsinskoy Khimii, Vol 17, No 2, Mar/Apr 71, pp 137-141

The purity of the enzyme was estimated at higher than 80-90%. However, the enzyme was as heterogeneous in electrophoresis as the less highly purified samples prepared without supplementary treatment with BuOH and $ZnCl_2$. All fractions that formed upon electrophoresis on starch or on polyacrylamide had lecithinase activity, as determined by the lecithovitellin reaction. It is possible that isoenzymes were present or that the enzyme underwent conformational changes in the process of purification.

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- 15 -

Microbiology

USSR

UDC 576.851.555.098.31.078.2

ISPOIATOVSKAYA, M. V., KLIMACHEVA, L. V., TOKINOVA, T. N., and LARINA, I. A.,
Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical
Sciences USSR, Moscow

"Immunochemical Study of Enzymes of the *Cl. perfringens* Toxic Complex"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71,
pp 89-93

Abstract: A study was made of toxins formed by *Cl. perfringens* upon cultivation on a meat-pancreas medium. Lecithinase, collagenase, hyaluronidase, and neuraminidase were isolated and purified by previously described methods. The first three enzymes were converted by the action of CH_2O into compounds devoid of enzyme activity. Neuroaminidase was not inactivated by CH_2O ; the *Cl. perfringens* toxoid retained neuraminidase activity. The enzymes and inactivated compounds had antigenic properties and induced formation of antibodies upon immunization of mice and rabbits. All enzymes reacted with immune serum *Cl. perfringens* toxin and also with immune serum to the respective inactivated enzyme. The antibodies to collagenase and hyaluronidase were highly specific; they did not protect mice against a *Cl. perfringens* culture or the toxin, but only inhibited collagenase or hyaluronidase activity. The toxins and toxoids

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USSR

ISPOLATOVSKAYA, M. V., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71, pp 89-93

were stable to the denaturing effect of urea and ethylene chlorohydrin, while collagenase, hyaluronidase, and collagenase were denatured by them. The stability of Cl. perfringens toxin to the action of the denaturing agents was due to the fact that the lethal factor, lecithinase, was resistant to their action. Lecithinase and its nontoxic derivative, inactivated lecithinase, passed at the same rate through Sephadex G-75 and formed precipitation lines in agar with the respective antisera. This indicated that formation of the toxoid is not associated with polymerization of the protein molecules of lecithinase. A study of the lecithinase of Cl. perfringens showed that it is a zinc-containing enzyme. By reacting the lecithinase with cysteine, Zn could be removed from it and the enzyme inactivated in this manner. Stable inactivated lecithinase was obtained upon removal of Zn, which had toxoid properties.

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- 6 -

USSR

UDC 576.851.555.098.31:577.154.365

KLIMACHEVA, L. V., and ISPOLATOVSKAYA, M. V., Laboratory of the Biochemistry of Metabolism of Pathogenic ~~Microorganisms~~, Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"Isolation and Some Properties of Hyaluronidase From Clostridium perfringens."

Moscow, Voprosy Meditsinskoy Khimi, Vol 16, No 4, Jul/Aug 70, pp 381-386

Abstract: Hyaluronidase preparations from Clostridium perfringens were purified 6,000 times by fractionation with ammonium sulfate and ethanol and by chromatography on the DEAE-Sefadex A-50. The preparations were free of lecithinase and collagenase activity and, on serological analysis and electrophoresis on starch-gel by the Smithies method produced two fractions. Since hyaluronidase is inhibited by the action of p-caloromercuric benzoate and monoiodoacetate, it can be assumed that it is a thiol enzyme. It is susceptible to denaturation by urea and ethylenechlorohydrin. The inactivation of hyaluronidase changes in its antigenic activity, as determined by precipitation with immune serum. It is resistant to the action of metal-binding compounds (EDTA, o-phenanthroline, and cysteine), and is thus not a metalloenzyme. The inactivation of hyaluronidase and the detoxification of Cl. perfringens coincide. The ultraviolet spectra of hyaluronidase and its atoxic derivative differ only slightly.

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USSR

UDC 612.12+612.419].014.46:576.851.555.098.31

ANOSOV, I. Ya., ISPOLATOVSKAYA, M. V., and LARINA, I. A.. Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"The Effect of C-Lecithinase from Type A cl. perfringens on Guinea Pig Blood and Bone Marrow"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, Aug 70, pp 117-122

Abstract: Guinea pigs were injected intramuscularly with purified C-lecithinase isolated from type A Cl. perfringens toxin (1 MLD). The animals developed hypochromic anemia, accompanied by aniso- and poikilocytosis, hemolysis, normoblastosis, accelerated ESR, and, in the white blood cells, eosinopenia, leukocytosis (changing to leukopenia with a shift to the left due to the appearance of rodnuclei, immature forms, and myelocytes), slight lymphocytosis against the background of leukopenia, and degeneration of formed elements, which intensified as the pathological processes developed. Edema, pronounced hyperemia, extensive hemorrhages, and karyopyknosis of many cells were evident in bone marrow within 4 hours of injection of C-lecithinase. The number of cells containing RNA and alkaline phosphatase decreased substantially. Erythropoiesis and leukopoiesis

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USSR

ANOSOV, I. Ya., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
No 8, Aug 70, pp 117-122

were depressed. The symptoms produced by intramuscular injection of C-lecithi-
nase from type A Cl. perfringens are quite similar to those observed in ex-
perimental gas gangrene.

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USSR

UDC 612.135-06:576.851.555.097.29

KOZLOV, V. I. and ISPOLATOVSKAYA, M. V., Chair of Normal Anatomy, Second Moscow Medical Institute imeni N. I. Pirogov and Laboratory of Biochemistry of Microbial Metabolism Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR

"Effect of Clostridium perfringens Type A Toxin and Its Lethal Factor Lecithinase on the Microcirculation"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 11, 1972, pp 22-25

Abstract: Microscopic study of blood vessels of the mesentery, small intestine, and cremaster of rats injected in different ways (intravenously, intramuscularly, intraperitoneally) with Cl. perfringens toxin or lecithinase revealed circulatory disorders within 3 to 5 minutes. Disorders consisted of periodic contraction of the smooth muscles of the arteries and arterioles followed by relaxation along the entire length of the vessel. The brief increases and decreases in precapillary resistance disrupted the regular rhythm of the blood entering the microvascular bed, resulting in a general slowing of the peripheral blood flow in 10 to 15 minutes. After 30 to 60 minutes the arteries became markedly constricted while the veins were dilated and hyperemic. Stasis set in as shown

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USSR

KOZLOV, V. I. and ISPOLATOVSKAYA, M. V., Byulleten' Eksperimental'noy
Biologii i Meditsiny, No 11, 1972, pp 22-25

by the entry of RBC into the lymphatics and capillaries) along with impairment
of the permeability of the histohematic barrier caused by injury to the vascular
walls. The above changes in the microcirculatory hemodynamics are similar
to those induced by E. coli endotoxin and other toxins.

2/2

Mining

USSR

UDC 622.011.43

ISRAFILOV, R. M., Kiev

"Influence of Rheological Properties of the Rock Mass on Stress Concentrations Around a Supported Elliptical Mine Work"

Prikladnaya Mekhanika, Vol 8, No 3, 1972, pp 62-67.

Abstract: The problem is studied of reinforcement of a horizontal mine work of elliptical cross section, considering the rheological properties of the rock mass. The rocks surrounding the mine work are assumed to be an elastically creeping isotropic body, the shaft lining -- an ideally elastic body. The problem is solved on the basis of the general rock mechanics theory of creep. When the problem is solved by the method of the small parameter, the "elastic" method of M. P. Sheremet'yev is used. Expressions are produced for determination of the surrounding stress in the shaft lining σ_{θ}^k .

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1/2 030 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ONCE MORE ON INDUCTION OF CEREBRAL TUMORS IN RATS BY
METHYLNITROSUREA -U-
AUTHOR-(04)-DIMANT, I.N., LOKTIDNOV, G.M., SATAYEV, M.M., ISRAELYAN, A.A.
COUNTRY OF INFO--USSR
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
NR 5, PP 90-92
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--TUMOR, RAT, BRAIN, HORMONE, X RAY RADIATION BIOLOGIC EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0204 STEP NO--UR/0219/70/069/005/0090/0092
CIRC ACCESSION NO--AP0120902
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120902

ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. THE ARTICLE SETS FORTH THE RESULTANT DATA OF EXPERIMENTS ON MONGREL RATS INVOLVING THE INDUCTION OF CEREBRAL TUMORS BY INTRAVENOUS INJECTION OF METHYLNITROSOUREA. AN ANALYSIS OF THE RESULTS OF PERSONAL EXPERIMENTS WITH STATISTICAL TREATMENT SHOWED THE PRESENCE OF A SIGNIFICANT RELATION BETWEEN THE INCIDENCE OF OCCURRENCE OF CEREBRAL NEOPLASMS AND DISTURBANCES OF THE HORMONAL BALANCE CAUSED BY X IRRADIATION OF THE OVARIES AND FEEDING OF 6-METHYLTHIOURACYL. COMPARATIVE STATISTICAL STUDY OF LITERATURE SOURCES TESTIFY TO THE ROLE OF BIOLOGICAL PECULIARITIES OF THE LINES OF ANIMALS IN THIS PROCESS. FACILITY: INSTITUTE OF ROENTGENOLOGY, RADIOLOGY, AND ONCOLOGY, TASHKENT.

UNCLASSIFIED

USSR

UDC: 621.375:5

ISSERLIN, Ye. B.

"A Pulse Modulator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratsy, Sovetskoye Sozuzi, No 12, 1970, Author's Certificate No 266831, filed 19 Dec 66, p 40

Abstract: This author's certificate introduces a pulse modulator for a magnetron oscillator. The device contains storage capacitors, a commutating thyatron, and a pulse generator connected in parallel with the magnetron. As a distinguishing feature of the patent, commutation of the thyatron is accomplished by a lower power quenching pulse and the pause between pulses is reduced by incorporation of an additional pulse generator which is connected through an electronic key to an accumulator connected in the cathode circuit of the thyatron. Also employed in the device is a diode which is shunted by this key and accumulator.

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1/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THE DEVELOPMENT OF MICROSPORIDIANS OF INSECTS IN THE
ENTOMOPATHOGENIC NEMATODE NEOAPLECTANA AGRICOLA, NEMATODA:
AUTHOR--(02)-VEREMCHUK, G.V., ISSI, I.V.
COUNTRY OF INFO--USSR
SOURCE--PARAZITOLOGIYA 4(1): 3-7. ILLUS. 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--NEMATODA, INSECTA, MICROSCOPY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/0417 STEP NO--UR/9057/70/004/001/0003/0007
CIRC ACCESSION NO--AP0134185
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PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134185

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A POSSIBILITY OF THE MICROSPORIDIAN SPORE TRANSMISSION BY THE ENTOMOPATHOGENIC NEMATODES, NEOAPLECTANA AGRIOTOS, FROM DISEASED CATERPILLARS OF THE CABBAGE WHITE BUTTERFLY, PIERIS BRASSICAE L. INFECTED IN ADVANCE WITH NOSEMA MESNILI (PALILLOT), AND FROM DISEASED CATERPILLARS OF THE CUT WORM AGROTIS SEGETUM SCHIFF. INFECTED WITH PLISTOPHORA SCHUBERGI ZW., TO HEALTHY CATERPILLARS OF THE SAME INSECT SPECIES WAS INVESTIGATED. MICROSCOPIC ANALYSIS OF THE NEMATODES DEVELOPED IN DISEASED INSECTS INDICATED THAT THEY WERE INFECTED WITH MICROSPORIDIA OF THEIR OWN HOSTS. FACILITY: ALL-UNION INST. PLANT PROT., LENINGRAD, USSR.

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USSR

UDC: 539.128.2

BALDIN, A. M., BEZNOGIKH, Yu. D., ZINOV'YEV, L. P., ISSINSKIY,
~~I. B.~~ KAZANSKIY, G. S., MIKHAYLOV, A. I., MOROZ, V. I., PAVLOV,
N. I., and PUCHKOV, G. P.

"Acceleration and Removal of Deuteron Beams from the OIYaI Synchro-
phasotron"

Moscow, Pribory i Tekhnika Eksperimenta, No. 3, 1971, pp 29-31

Abstract: This article describes the realization of a proposal for accelerating and extracting deuterons with existing synchro-phasotron systems made in an earlier article (Beznogikh, Yu. D., et al, Reprint OIYaI, 1968, No. R9-4214, Dubna). The basic idea of the proposal was to multiply the linear acceleration by two through halving the velocity of the deuterons going into and coming out of the linear accelerator compared to the velocity of the protons. The acceleration in the synchrotron is done in two steps: first, doubling the acceleration; second, reaching the limiting frequency of the accelerating system and then making the transi-

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BALDIN, A. M., et al., Pribory i Tekhnika Eksperimenta, No 3, 1971, pp 29-31

tion to the plateau in the first multiple of the acceleration. By using a debuncher at the accelerator output, the capture of the deutons in first the quasi-betatron and then the synchrotron modes was increased. The authors are associated with the OIYaI (Joint Institute of Nuclear Research, Dubna).

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USSR

UDC 621.4/.6:533.6

ISTAYEV, S. I., SEYTBKOV, T., UVAKOV, A. B.

"Experimental Study of the Hydrodynamics of a Spherical Jet Device"

V sb. Prikl. i teor. fizika. Vyp. 3 (Applied and Theoretical Physics. No 3 -- Collection of Works), Alma-Ata, 1972, pp 250-256 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B434)

Translation: The results of an experimental study of the hydrodynamics of a spherical jet device are presented. The effect of the position of the working nozzle and the length of the cylindrical mixing chamber on the injection coefficient of the device was established. An empirical relationship was obtained giving the injection coefficient of the spherical jet device as a function of the ratio of the diameter of the mixing chamber and the diameter of the working nozzle. Authors' abstract.

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Photoelectric Effect

USSR

UDC 621.383.52.029.6

GEORGIYEVSKAYA, Ye. A., ISTOMIN, A. N., KAMENSKIY, N. N., PRICHKO, Yu. V.,
FEDOTOV, Ya. A.

"High-Frequency Silicon Photodiodes With PIN-Junction Structure"

Moscow, Radiotekhnika i Elektronika, vol 16, No 11, Nov 71, pp 2232-2234

Abstract: Silicon photodiodes are described in which speed is increased at high inverse bias voltages by eliminating the diffusion time and reducing RC parameters. The diodes are made from high-resistance P-silicon (resistivity of 1000-2000 Ω -cm). Curves are given for the frequency response of the diodes for incident radiation on wavelengths of 0.63 and 0.91 μ at various supply voltages from 0 to 100 V. The spectral characteristics of the photodiode are given as well as a structural schematic. The proposed photodiodes can be used in high-quality optico-electronic equipment in combination with various radiation sources. Particularly promising is the use of these diodes in semiconductor devices in conjunction with gallium arsenide emitters. The authors thank M. Kh. Kollender for her assistance with preparation of the diodes. Two figures, bibliography of two titles.

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USSR

UDC: 51

ISTOMIN, L. A.

"Concerning Inverse Problems of Mathematical Modeling"

V sb. Mat. metody v nekot. zadachakh optimal'n. planir. Vyp. 3 (Mathematical Methods in Some Problems of Optimum Planning--collection of works. No 3), Sverdlovsk, 1971, pp 32-44 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V812)

Translation: Problems of finding the maximum (or minimum) of the functional $f(x)$ with a given system of constraints Ω are studied in mathematical programming. In these problems the sought optimum value $\bar{m}(f, \Omega)$ of the functional $f(x)$ is put into correspondence with the system of objects f and Ω . The paper analyzes situations which are inverse in some sense, where f and Ω depend on the vector parameter y and it is required to determine the value of the parameter y constrained either by some requirement of admissibility of $y \in Y$, or by a requirement of optimality with respect to a criterial functional $g(y)$ under the condition $\bar{m}(f_y, \Omega_y) \in D$, where D is some region of the number axis. Introduction.

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ISTOMIN N.A.

Acc. Nr.: AP0042551

Ref. Code: UR0293

JPRS 52162

Trajectories for Close Flight About the Moon and Return to Earth

(Abstract: "Study of the Trajectories for a Close Flight Around the Moon and Return into the Earth's Atmosphere," by V. A. Il'in, V. V. Demeshkina and N. A. Istomin; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 48-58)

A detailed examination of spatial trajectories for close flight about the moon with return to the earth's atmosphere is presented; a large number of requirements are imposed on the analyzed trajectories (with respect to altitude above the surface, flight time to the moon and back, velocity at launching from an artificial earth satellite orbit, initial geocentric distances, inclination of flight planes, etc.). The study is made by an approximate method with a number of simplifying assumptions: 1) for the geocentric flight segments the radius of the lunar field of attraction is considered zero; 2) the effect of the lunar gravity field on the vehicle flying around that body is reduced to an instantaneous rotation of the entry selenocentric velocity to the vector of exit selenocentric velocity; 3) true lunar motion is replaced by motion in a circular Keplerian orbit; 4) change in the lunar velocity vector during the time of motion in the lunar sphere of attraction is neglected. On this basis the

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authors formulate the problem of synthesis of trajectories for flight around the moon and give a model for solving the problem. A classification of trajectories for flight around the moon is given. The characteristics of the geocentric segments for earth-moon and moon-earth flights are analyzed.

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UDC: 539.621

ISTOMIN, N. P., and KHRUSHCHOV, M. M., Moscow

"Effect of Graphite Cleavage Plane Orientation on Friction and Wear of its Mixture With Ftoroplast-4"

Moscow, Mashinovedeniye, No 1, Jan-Feb 73, pp 90-94

Abstract: Ftoroplast-4 (Teflon) has a low coefficient of dry friction, but has poor wear resistance. The wear resistance is considerably improved by introduction of powder fillers including graphite. Graphite powder has a laminated structure. When subject to compression the cleavage planes of graphite powder orient themselves normal to the direction of compression. Bearings were prepared by mixing teflon with 30% in volume of graphite powder, compressing the mixture in a mold and baking it under pressure. Tests showed that the lowest wear is obtained with the cleavage planes normal to the direction of sliding. An even better wear resistance was obtained with cryptocrystalline graphite.

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