

USSR

UDC 547.721'781'821

SALDABOL, N. O., ZELIGMAN, L. L. and GILLER, S. A., Institute of Organic Synthesis, Acad. Sc. Latvian SSR, Riga

"Aminomethylation of 2-(Furyl-2)imidazo-[1,2-a]-pyridine"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 818-821

Abstract: Aminomethylation, specifically the morpholino- and piperidinomethylation of 2-(furyl-2)imidazo-[1,2-a]pyridine occurs principally at position 3 of the imidazopyridine system, when equimolar quantities of the reagents are used. With excess formaldehyde and amine the reaction occurs also at position 5 of the furane ring. To identify the structure of monomorpholinomethylation product it was further nitrated to yield 3-morpholinomethyl-2-(5-nitrofuryl-2)imidazo-[1,2-a]-pyridine (I). For positive identification, (I) was independently synthesized by morpholinomethylation of 2-(5-nitrofuryl-2)-imidazo[1,2-a]pyridine. Structure identification was carried out by means of TLC, and IR and UV spectroscopical analyses. The reaction was carried out by dropwise addition of formalin and morpholine to 2-(furyl-2)imidazo [1,2-a]pyridine in acetic acid, heating for 3 hrs at 60°, and neutralization with NaOH.

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USRR

UDC 661.668:621.9-492

BELZERSKIY, N. A., SEGAL, L. D., MEL'TSER, R. L., and ZELTICHMAN, L. A.,
State Planning Institute for Nickel Industry

"Iron-Nickel-molybdenum Carbonyl Powders"

Kiev, Akademiya Nauk Ukr SSR, Poroshkovaya Metallurgiya, No 7, Jun 72,
pp 1-4

Abstract: A carbonyl method for obtaining iron-nickel-molybdenum powders containing from 0.5 to 5.8% Mo is described. In order to increase the molybdenum content in the powder, an organic solvent such as $Ni(CO)_4$, $Fe(CO)_5$, $Mo(CO)_6$, or acetone is added to the initial carbonyl iron-nickel mixture, or the temperature of the latter is raised. Articles with high magnetic properties are produced from carbonyl iron-nickel-molybdenum powders.

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1/2 028

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--DETERMINATION OF THE SOLUBILITY OF MOLYBDENUM CARBONYL IN CARBON MONOXIDE AT HIGH PRESSURE -U-

AUTHOR--(04)-KRICHEVSKAYA, U.D., KREMNEV, V.L., ZELIKHMAN, L.A., BOLOTOVA, K.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 877-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLYBDENUM COMPOUND, METAL CARBONYL, SOLUBILITY, CARBON MONOXIDE, HIGH PRESSURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0439

STEP NO--UR/0080/70/043/004/0877/0879

CIRC ACCESSION NO--AP0126192

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126192

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

ABSTRACT. THE SOLY. WAS DETD. AT 100-280
ATM. AND 0-30DEGREES. THE CONTENT OF MO(CO) SUB6 IN COMPRESSED CO ROSE
WITH INCREASE IN PRESSURE. AN EXPRESSION IS GIVEN FOR THE SOLY. OF
MO(CO) SUB6 IN CO AS A FUNCTION OF THE CO PRESSURE.

UNCLASSIFIED

1/2 006

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--EFFECT OF HYDROTHERMAL TREATMENT CONDITIONS ON THE PROPERTIES OF
CALCIUM HYDROSILICATE FOR USE AS A FILLER OF POLYMER MATERIALS -U-

AUTHOR--(03)-MCHEDLOVPETROSYAN, O.P., SYTNIK, L.V., ZELIKIN, M.B.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. LENINGRAD 1970, 43(3), 507-13

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FILLER, RUBBER, LEATHER, CALCIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0596

STEP NO--UR/0080/70/043/003/0507/0513

CIRC ACCESSION NO--AP0119514

UNCLASSIFIED

2/2 006
 CIRC ACCESSION NO--AP0119514 UNCLASSIFIED PROCESSING DATE--23OCT70
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OPTIMUM CONDITIONS FOR PRODUCTION
 OF THE TITLE COMPD., USEFUL AS A FILLER IN RUBBER AND SYNTHETIC LEATHER,
 WERE DETD. FOR THE REACTION, DIATOMITE FROM THE DZHADZORSK DEPOSIT,
 CONTG. 87.5PERCENT SiO_2 OF AN AMORPHOUS, ACTIVE FORM, 2.0PERCENT Al_2O_3 ,
 SiO_2 , 1.6PERCENT MgO , 0.8PERCENT CaO , 1.1PERCENT Fe_2O_3 ,
 AND 6PERCENT VOLATILES, AND CaO HEATED AT 900DEGREES AND SLAKED WITH H_2O
 SUB2 O AT 90DEGREES WERE USED IN DIFFERENT RATIOS. BEST RESULTS WERE AT
 $CaO-SiO_2$ EQUALS 0.5:1. OPTIMUM TEMP. IN THE AUTOCLAVE WAS
 100DEGREES. THE REACTION RATE INCREASED WITH THE DEGREE OF DISPERSION;
 WET MILLING OF THE MATERIALS IS RECOMMENDED. THE RATE WAS BEST AT THE H
 SiO_2 SOLIDS RATIO OF 10-20. A HIGH REACTION RATE ALWAYS INDICATED A
 GOOD QUALITY FILLER. FAICLITY: NAUCH.-ISSLED, INST. OSNOV,
 KHIM., KHARKOV, USSR.

UNCLASSIFIED

ZELIKIN, M. I.

SO: JPRS 55934
09 MAY 1972

Mathematics

UDC 517.92

Gudim

CONCERNING ONE DIFFERENTIAL GAME WITH INCOMPLETE INFORMATION
Article by M. I. Zelikin, Moscow State University, Leni N.Y.
Lomonosovi; Sobremy, Zhilady Akad Nauk SSSR, Russian, Vol 202,
No 5, 1972, signed to press 17 June 1971, pp 990-1000]

We shall analyze the following differential game. Two objects P and E may be moved in a circle at a rate that does not exceed unity. At the initial moment of time a random uniform distribution is given for both objects on the circle. Neither knows anything about the location of the other. The player P tries to "capture" player E, i.e., the game is considered ended at the moment t if P and E are found at one and the same point of the circle at this moment.

Let us denote the radius of the circle by R, and the angles of the radii-vectors of points P and E by φ and ψ , with a certain fixed ray passing through the center of the circle.

The equations of motion will have the form

$$\begin{aligned} \dot{\varphi} &= v/R, \quad |v| \leq 1, \\ \dot{\psi} &= w/R, \quad |w| \leq 1. \end{aligned} \tag{1}$$

Then it is convenient for the strategy of P and E to take the trajectories themselves of this system, i.e., the functions $\varphi(t)$ and $\psi(t)$ respectively satisfying the Lipschitz conditions:

$$|\Delta\varphi| = |\varphi(t+\Delta t) - \varphi(t)| \leq |M|\Delta t \tag{2}$$

We have the same condition for the function $\psi(t)$. Since it is obvious that there are no decisions in the pure strategies for this problem, then each of the players selects a certain piecewise in space of the functions such as (2) which will also be

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ZELIKINA, L. F.

"One Economics Problem which can be Reduced to a Differential Game"

Teoriya Igr [Games Theory -- Collection of Works], Yerevan, 1973,
p 172 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973,
Abstract No 10V489)

Translation: The strategy of each side consists in distribution at each moment in time of the available resources into two parts: into increased production and into scientific research, increasing the probability of scientific discoveries, which in turn increase the effectiveness of investments. The problem is stated of selecting a strategy so that the side having the least resources reaches the level of the other side.

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USSR

UDC 669.27'294.051

ZELIKMAN, A. N., KREYN, O. YE. and LOBOVA, T. A.

"Synthesis and Some Properties of Tungsten and Tantalum Chalcogenides"

V sb. Khal'kogenidy (Chalcogenides--collection of works), Vyp 2, Kiev, "Naukova Dumka", 1970, pp 61-76 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G170)

Translation: Scientific research work is carried out regarding the conditions of production of WS_2 , W, and Ta diselenides and the chemical and antifriction properties of these compounds. A study is made of the interaction of selenides with water and diluted acid and alkali solutions at room temperature, and its behavior during air oxidation at 300-800°. It is established that the WS_2 friction coefficient coincides with that of MoS_2 , but its wear is half as much. 7 ill., 3 tables, 7 bibl. entries. S. Krivonosova

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USSR

UDC 669.28.051

ZELIKMAN, A. N., KREYN, O. YE., TESLITSKAYA, M. V., and INDENBAUM, G. V.

"Synthesis and Some Properties of Molybdenum Disulfide"

V sb. Khal'kogenidy (Chalcogenides--collection of works), Vyp 2, Kiev, "Naukova Dumka", 1970, pp 47-60 (from RZH-Metallurgiya, No 1, Nov 70, Abstract No 11G179)

Translation: A review is presented of work conducted by the Moscow Institute of Steel and Alloys on the investigation of methods of synthesis of MoS_2 from elements and on the production of MoS_2 by the method of interaction of S with molybdates in the melt and on the study of the structure and lubricating properties of synthetic MoS_2 . 6 ill., 4 tables, 11 bibl. entries. S. Krivonosova

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--STUDY OF THE CHLORINATION OF FERRO TUNGSTEN IN A CHLORIDE MELT -U-
AUTHOR--(03)-ZELIKMAN, A.N., STEFANYUK, S.L., KHAZAN, A.Z.
COUNTRY OF INFO--USSR
SOURCE--IZVEST. V. U. Z., TSVETNAYA MET., 1970, (1), 69-74
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CHLORINATION, FERROTUNGSTEN, BIBLIOGRAPHY, MOLTEN CHLORIDE,
CHEMICAL KINETICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0533 STEP NO--UR/0149/70/000/001/0069/0074
CIRC ACCESSION NO--AP0124228
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124228

ABSTRACT/EXTRACT--(U) SP-0- ABSTRACT. THE CHLORINATION OF FERRO W IN
NACL AND NACL FECL SUB2 MELTS WAS STUDIED. AT TEMP. ABOVE 750 DEGREESC
THE CHLORINATION PROCEEDED TO COMPLETION WITHOUT ANY RETARDATION OF THE
REACTION BY THE LOWER CHLORIDES OF W AND FE, THESE TENDING TO DISSOLVE
READILY IN THE MELT. ANALYSIS OF THE KINETICS OF THE REACTIONS IN
DIFFERENT SALT MELTS INDICATED THAT THE REACTION VELOCITY INCREASED
SHARPLY IN THE PRESENCE OF FECL SUB2. ABOVE 800 DEGREESC CHLORINATION
TOOK PLACE BY WAY OF A DIFFUSION MECHANISM, THE VELOCITY DEPENDING ON
THE RATE OF FEEDING CL INTO THE MELT.

UNCLASSIFIED

Acc. Nr.

AP0051523

Abstracting Service:
CHEMICAL ABST. 4/70

Ref. Code

UR 0136

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81750f Reduction of tungsten hexachloride with hydrogen in a fluidized bed. Zelikman, A. N.; Anikeev, A. I. (USSR). *Tsvet. Metal.* 1970, 45(1), 58-61 (Russ). WCl₆ is recommended as starting material for the production of finely powd. pure W because of its ease of purification due to its low b.p. The redn. is done in a fluidized bed of WCl₆ by H at 800-900°. Both gases are carried by a stream of purified, dry Ar. H is purified over Cu shavings at 600° and dried over P₂O₅. Oxychlorides are removed from WCl₆ by evapn. at 200-20° in pure Ar, and WCl₆ is then distd. at 300-50°. The W powder obtained by this method and collected in a dust chamber above the reaction zone contains <0.01% O. The parameters and optimum conditions of the redn. are given. A. P. Mueller

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REEL/FRAME
19811735

18

USSR

UDC 77.021.11

KIRILLOV, N. I., VASIL'YEVA, N. V., ZELIKMAN, V. I., All-Union State Scientific Research and Planning Institute of the Chemico-photographic Industry

"Obtaining Concentrated Photographic Emulsions by Means of Their Successive Freezing and Melting"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, No 6, Nov-Dec 70, pp 441-443

Abstract: A method patented by the authors makes it possible, by freezing an emulsion at low temperatures (minus 10-20°C and lower), to remove more than 90% of the moisture from the emulsion (i.e., to concentrate it by a factor of 10 and more), and to obtain the required concentrated emulsion with a low gelatin content. This method has proved very effective in its use for obtaining especially fine-grain "transparent" photographic emulsions for precision photography, holography, etc. 2 tables, 6 bibliographic entries.

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Explosives and Explosions

USSR

UDC 541.427.6

MERZHANOV, A. G., ZELIKMAN, Ya. G., and ALEKSANDROVSKAYA, Ye. D.

"Theory of Degeneration of Thermal Explosion"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 45, No 2, Feb 71, pp 379-382

Abstract: Experimental data are reported in support of the sequence proposed by the authors for the degeneration of thermal explosion. The kinetics and thermal explosion were studied of two model reactions of tetryl; an auto-catalytic reaction and a first-order reaction. Degeneration characteristics were determined from the experimental data for the reactions tetryl-picric acid and tetryl-limestone. Experimentally obtained values agreed well with the theoretically calculated ones.

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USSR

UDC 669.3'24.053.4

KHIVSKIY, N. N., KRASNOZHEN, S. V., ZELIKMAN, Yu. L., STARIKOV, A. M.

"Study of Effectiveness of Application of Ultrasound for Dispersion of Sulfide Copper-Nickel Ore"

Primeneniye Ul'trazvuka v Metallurg. Protsessakh [Use of Ultrasound in Metallurgical Process -- Collection of Works], Moscow, 1972, pp 145-147, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G362 by the authorz).

Translation: The possibility is studied of dispersion of sulfide Cu-Ni ore using US oscillations under atmospheric and increased hydrostatic pressure. The US source was a magnetostriction convertor type PMS-6M. With an S-L ratio of 1:100, temperature 75°, and pressure in the operating chamber of 5 atm, an ore with a grain size of 100% + 0.1 mm is fully dispersed in 2 hours to a grain size of 100% - 0.1 mm, 80% of the initial mass of the initial ore specimen being dispersed to this size in the first 15 minutes. 1 Figure; 3 Tables.

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UDC 615.28:547.722/.724).012.1

USSR

ZELIKMAN, Z. I., KUL'NEVICH, V. G., SHKREBETS, A. I., PERSHIN, G. N.,
MIKERINA, A. L., Krasnodar Polytechnical Institute, USSR Institute of
Chemical-Pharmaceutical Scientific Research imeni S. Ordzhonikidze, Moscow

"Synthesis and Germistatic Activity of Several 5-Substituted 2-(α -furyl)-
1,3-dioxanes"

Moscow, Khimiko-Farmitsevticheski Zhurnal, Vol 7, No 11, Nov 73, pp 25-27

Abstract: 2-(α -furyl)-5-ethyl-5-nitro-1,3-dioxane, 2-(α' -methylfuryl- α)-
5-ethyl-5-nitro-1,3-dioxane, 2-(α' -bromofuryl- α)-5-ethyl-5-nitro-1,3-
dioxane and 2-(α' -indofuryl- α)-5-ethyl-5-nitro-1,3-dioxane were synthesized
and identified using IR and UV spectrophotometry and elemental analysis.
The biological activity of these compounds and six others -- 2-(α' -nitro-
furyl- α)-5,5-dimethyl-1,3-dioxane, 2-(α' -nitrofuryl- α)-5-ethyl-5-methylol-
1,3-dioxane, 2-(α' -nitrofuryl- α)-5-methyl-5-methylol-1,3-dioxane, 2-(α' -
nitrofuryl- α)-5,5-bis-(chloromethyl)-1,3-dioxane, 2-(furyl- α)-5-methyl-5-
methylol-1,3-dioxane, and 2-(α' -bromofuryl- α)-5-ethyl-5-methylol-1,3-
dioxane -- was tested against various microorganisms. It was noted that the
addition of bromine, iodine, and especially the nitro-group the furyl ring
enhanced, while addition of the methyl group lessened physiological activity
of the compounds.

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1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SPECTROPHOTOMETRIC METHOD FOR THE QUANTITATIVE DETERMINATION OF
FURAN ALDEHYDES AND THEIR CONVERSION PRODUCTS IN REACTION MIXTURES -U-
AUTHOR--(03)-KULNEVICH, V.G., SOLTUVETS, G.N., ZELIKMAN, Z.K.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 283-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SPECTROPHOTOMETRIC ANALYSIS, FURAN, ALDEHYDE, ALCOHOL, ACETAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0747 STEP NO--UR/0409/70/000/002/0283/0284
CIRC ACCESSION NO--AP0119654
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 010

CIRC ACCESSION NO--AP0119654

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

(I), ALCS. (II) AND ACETALS (III) WERE STUDIED. A SPECTROPHOTOMETRIC METHOD FOR THE QUANT. DETN. OF I, II, AND III SEPARATELY OR IN THE REACTION MIXT. WAS DEVELOPED. INST., KRASNODAR, USSR.

ABSTRACT. THE UV SPECTRA OF FURAN ALDEHYDES (I), ALCS. (II) AND ACETALS (III) WERE STUDIED. A SPECTROPHOTOMETRIC METHOD FOR THE QUANT. DETN. OF I, II, AND III SEPARATELY OR IN THE REACTION MIXT. WAS DEVELOPED. INST., KRASNODAR, USSR.

FACILITY: KRASNODAR, POLITEKH.

UNCLASSIFIED

USSR

MOSKALENKO, Yu. Ye., IVANOVA, T. I., VAYNSHTEYN, G. B., ZELIKSON, B. B.,
KISLYAKOV, Yu. Ya., and KAS'YAN, I. I. (2)

"Resistance of the Cerebrovascular System to Transverse Accelerations"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya No 1, 1973,
pp 37-46

Abstract: Histological examination of brain sections from dogs subjected to transverse accelerations of 15 g or more for 30 to 40 seconds revealed pronounced morphological changes in the blood vessels, including rupture of the walls with extensive hemorrhages into the brain tissue and ventricles. Intracranial cerebrospinal fluid pressure increased to 15 to 20 g and then stabilized while blood pressure continued to grow in proportion to the intensity of acceleration. Study of a mathematical model of the process showed that after acceleration of up to 15 g, transmural pressure in the cerebral vessels does not change significantly. However, acceleration of over 15 g increases transmural pressure beyond the tensile strength of the vascular walls and may cause them to rupture. Thus, the resistance of the cerebrovascular system to transverse accelerations is dependent on the relationship between the strength of the structural components of the vascular wall and the increase in transmural pressure.

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USSR

UDC 661.665.1:621.313.538.4

ZELIKSON, YU. M., RESHETOV, YE. P., FLID, B. D., VINOGRADOV, YU. A.

"Study of Silicon Carbide Electrodes for an Open-Cycle Magnetohydrodynamic Generator"

V sb. Magnitogidrodinam. metod polucheniya elektroenergii (Magnetohydrodynamic Method of Obtaining Electric Power--collection of works), vyp. 3, Moscow, Energiya, 1972, pp 98-110 (from RZh-Aviatsionnyye i raketnyy dvigateli otdel'nyy vypusk, No 11, Nov 72, Abstract No 11.34.149)

Translation: Results are presented from a study of silicon carbide electrodes in a device simulating the conditions in an open cycle magnetohydrodynamic generator channel. Data are presented on the effect of the plasma composition on the nature of the electrode processes. A study was made of the effect of the potassium additive concentration on the shape of the volt-ampere and sound- ing characteristics. The relation is presented for the cathode drop as a func- tion of current at different potassium concentrations in the flow. It was established that with a potassium concentration of 0.3% and more there are in practice no cathode drops on the silicon carbide electrodes at $T_{el} \geq 1,350^{\circ} C$. A relation was found for the limiting distributed discharge currents as a func- tion of the electrode temperatures. The experimental values of these currents

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ZELIKSON, YU. M., et al., Magnitogidrodinam. metod polucheniya elektroenergii, vyp. 3, Moscow, Energiya, 1972, pp 98-110

in the electrode temperature range of 1,350-1,500° C coincide satisfactorily with the ones calculated by the Richardson formula for $A=120 \text{ amps}/(\text{cm}^2 \cdot \text{deg}^2)$ and $\phi_{\text{eff}} = 2.7$ electron volts. The dependence of the mean erosion rate of the electrodes on the temperature and current density was defined. It was demonstrated that at an electrode temperature of 1,500° C the erosion does not in practice depend on the current density. There are 10 illustrations and a 13-entry bibliography.

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USSR

UDC: 654.967

ZELINSKIY, D. I.

"Use of Frequency-Keyed, Audio-Frequency Signals"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 2, Mar-Apr 73, pp 86-88.

Abstract: The Institute of Cybernetics, Academy of Sciences, Ukrainian SSR, has developed a receiver device for frequency-keyed, audio-frequency signals, largely eliminating the necessity of long pauses between signal pulses, which were formerly required due to the slow attenuation of the signal level at the conclusion of a pulse. The input signal to the receiver is fed through two phase shifter circuits. The phase shifters are used to produce a rectangular pulse in the receiver, at the end of which the phase shifters are shorted to ground, draining the energy stored in the circuit and liberating the circuit for reception of the next pulse in a considerably shorter period of time. This frequency-phase principle of separation of signals makes better utilization of the band width of the channel. For example, with a bandwidth of 400 Hz and a code base $m = 8$, the data reception rate can be about 600 bits/sec. The device can be used in a control system using unswitched cable lines as communications channels.

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USSR

VINOGRADOV, A. V., ZEHLJANUKHINA, N. A., PAVLOVA, I. V., DRONOVA, M. P., and LOPATINA, N. N.

"Correlation of Methods of Determining Aluminum in Beryllium and in its Alloys"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 2, 1973, pp 148-149

Abstract: For the determination of 0.1-30% aluminum in beryllium and in beryllium-aluminum alloys methods are recommended which do not require preliminary separation of these elements. The photometric method with methylthymol blue (MTB) is recommended for concentrations $\geq 0.1\%$ Al. Be did not give a colored complex with MTB at pH 3, but in high concentrations Be lowers the optical density of the solution. Complexone-III makes it possible to determine Al in the presence of many elements shielded by the complexone. A verification was made of the effect of Be on the Complexometric determination of Al by means of back titration of complexone excess by a solution of thorium salt with MTB indicator at pH 3 in solutions with Al:Be from 1:1 to 1:20. The examination of the gravimetric method with hydroxyquinoline showed that high concentrations of Be hinder the precipitation of Al. A comparative evaluation of the three methods on two samples of binary Be-Al alloys revealed that the gravimetric-hydroxyquinoline method is most exact and the photometric method is most rapid. The latter is recommended and its practicability is discussed. One table, nine bibliographic references.

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1/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70
 TITLE--PRINCIPLES OF THE OPERATION OF THE METALLIC ELECTRODES OF A
 MAGNETOHYDRODYNAMIC GENERATOR -U-
 AUTHOR--ZELIKSON, YU.M., KIRILLOV, V.V., RESHETOV, E.P., FLID, B.D.
 COUNTRY OF INFO--USSR
 SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 8(1) 193-202
 DATE PUBLISHED-----70

SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE), ELECTRONICS AND
 ELECTRICAL ENGR.
 TOPIC TAGS--ELECTRODE DESIGN, ELECTRODE PROPERTY, MAGNETOHYDRODYNAMIC
 GENERATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1989/0603

STEP NO--UR/0294/70/003/001/0193/0202

CIRC ACCESSION NO--AP0107200

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107200

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEEL, STAINLESS STEEL, AND CU ELECTRODES WERE EVALUATED, IN AN APP. DESCRIBED IN DETAIL, UNDER CONDITIONS APPROACHING THOSE OF ELECTRODES IN MHD GENERATORS. NONLINEAR V.A CHARACTERISTICS WERE OBSD. IN THE EXPTS.; AT CURRENT OF 0.1-0.15 A AND THRESHOLD VOLTAGES OF 70-120 V, AN ARC DISCHARGE, BASED ON FLUCTUATIONS IN GAS FLOW, WAS OBSD. AT THE CATHODE. OPERATIONS IN THE ARC DISCHARGE RANGE HAVE A SIGNIFICANT EFFECT ON THE ELECTRODE CURRENT FLUCTUATIONS; THE RANDOMLY FORMED CATHODE SPOTS FORMED VARY AS TO QUANTITY, SIZE, AND CURRENT VALUE. BASED ON THE TOTAL ELECTRODE CURRENT, A RELATION WAS DEVELOPED FOR THE CURRENT FLUX IN A SPOT.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--PRINCIPLES OF THE OPERATION OF THE METALLIC ELECTRODES OF A
MAGNETOHYDRODYNAMIC GENERATOR -U-
AUTHOR--ZELIKSON, YU.M., KIRILLOV, V.V., RESHETOV, E.P., FLID, B.D.
COUNTRY OF INFO--USSR
SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 3(1): 193-202
DATE PUBLISHED-----70

SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE), ELECTRONICS AND
ELECTRICAL ENGR.
TOPIC TAGS--ELECTRODE DESIGN, ELECTRODE PROPERTY, MAGNETOHYDRODYNAMIC
GENERATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/0603

STEP NO--UR/0294/70/009/001/0193/0202

CIRC ACCESSION NO--AP0107200

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107200

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEEL, STAINLESS STEEL, AND CU ELECTRODES WERE EVALUATED, IN AN APP. DESCRIBED IN DETAIL, UNDER CONDITIONS APPROACHING THOSE OF ELECTRODES IN MHD GENERATORS. NONLINEAR V, A CHARACTERISTICS WERE OBSD. IN THE EXPTS.; AT CURRENT OF 0.1-0.15 A AND THRESHOLD VOLTAGES OF 70-120 V, AN ARC DISCHARGE, BASED ON FLUCTUATIONS IN GAS FLOW, WAS OBSD. AT THE CATHODE. OPERATIONS IN THE ARC DISCHARGE RANGE HAVE A SIGNIFICANT EFFECT ON THE ELECTRODE CURRENT FLUCTUATIONS; THE RANDOMLY FORMED CATHODE SPOTS FORMED VARY AS TO QUANTITY, SIZE, AND CURRENT VALUE. BASED ON THE TOTAL ELECTRODE CURRENT, A RELATION WAS DEVELOPED FOR THE CURRENT FLUX IN A SPOT.

UNCLASSIFIED

172 020 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE ROLE OF BIOTIN IN METABOLISM OF STREPTOMYCES AUREOFACIENS -U-
AUTHOR--(02)-SHUTO, SH., ZELINKA, YA.
COUNTRY OF INFO--USSR
SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 5-10
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--STREPTOMYCES, CULTURE MEDIUM, BIOSYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/1415 STEP NO--UR/0220/70/039/001/0005/0010
CIRC ACCESSION NO--AP0109477
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109477

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

ABSTRACT. AN ADDITION OF BIOTIN TO A DEFINED MEDIUM UNDER LABORATORY CONDITIONS IMPAIRED CHLOROTETRACYCLINE YIELD IN STREPTOMYCES AUREOFACIENS CF. THE CONTROL BUT INCREASED BIOMASS OF THE CULTURE AND RNA PHOSPHORUS CONTENT IN THE MYCELIUM. AN ADDITION OF BIOTIN TO MEDIA WITH NATURAL NITROGEN SOURCES (STARCH, SOYA, CORN STEEP EIGNOR, MCLASSA) GAVE THE SAME RESULTS; HOWEVER, AN INTRODUCTION OF BENZYL RHODANIDE IN THE MEDIUM CANCELED NEGATIVE EFFECT OF BIOTIN ON CHLOROTETRACYCLINE BIOSYNTHESIS. THE ROLE OF BIOTIN IN METABOLISM OF STREPTOMYCES AUREOFACIENS IS DISCUSSED.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--COMPARISON OF THE CHEMICAL COMPOSITION OF LUNAR SURFACE MATERIAL
DETERMINED BY RADIOASTRONOMICAL OBSERVATIONS WITH THE RESULTS OF
AUTHOR--(03)-BONDAR, L.N., ZELINSKAIA, M.R., STREZHNEVA, K.M.

COUNTRY OF INFO--USSR, UNITED STATES

SOURCE--GOR'KOVSKIY GOSUDARSTVENNIY UNIVERSITET, GORKI, USSR,
INTERNATIONAL UNION OF RADIO SCIENCE, SYMPOSIUM ON PLANETARY ATMOSPHERES
DATE PUBLISHED----FEB 70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, SPACE TECHNOLOGY, EARTH SCIENCES
AND OCEANOGRAPHY
TOPIC TAGS--LUNAR SURFACE, CHEMICAL COMPOSITION, RADIO ASTRONOMY,
ARTIFICIAL EARTH SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2190

STEP NO--FR/0000/70/005/000/0247/0250

CIRC ACCESSION NO--AP0125770

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE—23OCT70

CIRC ACCESSION NO--AP0125770

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARISON OF THE RESULTS OF THE CHEMICAL ANALYSIS OF THE LUNAR SURFACE MATERIAL OBTAINED BY SURVEYOR WITH THAT BASED ON THE DATA OF RADIO ASTRONOMICAL INVESTIGATIONS OF THE ELECTROMAGNETIC PROPERTIES OF THE LUNAR MATERIAL. A NEW METHOD OF DETERMINING THE CHEMICAL COMPOSITION OF LUNAR ROCKS BY COMPARING THE VALUE OF THE MATERIAL LOSS ANGLE AT THE CENTIMETER WAVELENGTH WITH THAT FOUND FOR TERRESTRIAL ROCKS IS PROPOSED, INTRODUCING THE SPECIFIC TANGENT OF THE LOSS ANGLE AS AN INVARIANT FOR THE COMPARISON. THE APPLICATION OF THIS METHOD IS DESCRIBED, AND THE RESULTS ARE PLOTTED GRAPHICALLY AND DISCUSSED. IT IS SHOWN THAT THE DEPENDENCE OF THE SPECIFIC TANGENT OF THE LOSS ANGLE ON SiO_2 IS QUITE SUFFICIENT TO FIND THE MEAN CHEMICAL COMPOSITION FROM THE VARIATIONAL DIAGRAM AFTER THE DETERMINATION OF THE SiO_2 CONCENTRATION, THAT THE DIFFERENCE IN THE ANALYSIS USING THE DIAGRAMS FOR THE INTRUSIVE AND EFFUSIVE ROCKS IS INSIGNIFICANT, AND THAT THE METHOD PROPOSED MAKES IT POSSIBLE TO DETERMINE MORE PRECISELY THE CONCENTRATION OF SiO_2 AND Al_2O_3 , AS WELL AS K_2O , Na_2O , AND Fe_2O_3 .

UNCLASSIFIED

USSR

UDC: 621.372.5

IVANITSKIY, A. M., ZELINSKIY, M. M.

"Classification of Tripolar Ideal Converters"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Educational Institutes of Communications. Ministry of Communications of the USSR), 1970, vyp. 49, pp 121-129 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A142)

Translation: Ideal tripolar impedance inverters and converters are defined. Three classes of ideal tripolar impedance converters are defined. Conditions of existence are formulated for these ideal converters, and their properties are considered. Resumé.

1/1

- 14 -

172 018 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--USING THE IDEAL POWER CONVERTER IN THE SYNTHESIS OF ACTIVE RC
FILTERS -U-
AUTHOR-(02)-ZELYAKH, E.V., ZELINSKIY, M.M.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 5, 1970, PP 93-992
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--FILTER CIRCUIT, RC FILTER, ELECTRIC FILTER, FREQUENCY
CONVERTER, TRANSISTORIZED CIRCUIT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0595 STEP NO--UR/0109770/000/005/0098/0992
CIRC ACCESSION NO--AP0132757
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132757

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHARACTERISTICS USUALLY PROVIDED BY LC FILTERS CAN BE DUPLICATED AT LOW FREQUENCIES, WHERE THE INDUCTANCE WOULD BE BULKY AND CUMBERSOME, BY RC CIRCUITS. THIS ARTICLE CONSIDERS TWO MODELS OF RC FILTER WHERE THE ACTIVE ELEMENT IS AN IDEAL POWER CONVERTER. THE CONVERSION FACTOR IS ASSUMED TO BE REAL AND LARGER THAN UNITY. TWO METHODS OF CONNECTING IDEAL POWER CONVERTERS TO OBTAIN A NEGATIVE RESISTANCE CONVERTER ARE SHOWN. THE PROCEDURE FOR REALIZING A LINVILL MODEL (J. G. LINVILL, PROC. IRE, 1954, 42, P. 555) TO SYNTHESIZE ACTIVE FILTERS IS CONSIDERED UNDER THE ASSUMPTION THAT THE MODEL CONTAINS A GENERALIZED NEGATIVE RESISTANCE CONVERTER INSTEAD OF A SINGLE CONVERTER. THE FUNCTION OF THE IDEAL POWER CONVERTER IN THE YANAGISAWA MODEL (IRE TRANS. 1957, CT4, 4, 140) FOR SYNTHESIZING THE VOLTAGE TRANSFER FUNCTION IS DISCUSSED. MODELS USING SINGLE NEGATIVE RESISTANCE CONVERTERS ARE COMPARED WITH MODELS USING THE IDEAL POWER CONVERTER AND ARE FOUND TO BE OF EQUAL VALUE UNDER CERTAIN CONDITIONS. EXPERIMENTS WERE PERFORMED WITH TRANSISTORIZED FILTERS DESIGNED TO SUPPLY PARTICULAR TRANSFER FUNCTIONS THROUGH THE USE OF IDEAL POWER CONVERTERS. THE RESULTS THEY GAVE ARE IN GOOD AGREEMENT WITH THE RESULTS OF THEORETICAL COMPUTATIONS.

UNCLASSIFIED

USSR

UDC: 621.372.57

Z
ZELYAKH, E. V., ZELINSKIY, M. M.

"Using the Ideal Power Converter in the Synthesis of Active R-C Filters"

Moscow, Radiotekhnika i Elektronika, No 5, 1970, pp 98-992

Abstract: The characteristics usually provided by L-C filters can be duplicated at low frequencies, where the inductance would be bulky and cumbersome, by R-C circuits. This article considers two models of R-C filter where the active element is an ideal power converter. The conversion factor is assumed to be real and larger than unity. Two methods of connecting ideal power converters to obtain a negative-resistance converter are shown. The procedure for realizing a Linvill model (J. G. Linvill, Proc. IRE, 1954, 42, p. 555) to synthesize active filters is considered under the assumption that the model contains a generalized negative-resistance converter instead of a single converter. The function of the ideal power converter in the Yanagisawa model (IRE Trans. 1/2

USSR

ZELYAKH, E. V., et al, Radiotekhnika i Elektronika, No. 5, 1970,
pp 984-992

1957, CT-4, 4, 140) for synthesizing the voltage transfer function is discussed. Models using single negative-resistance converters are compared with models using the ideal power converter and are found to be of equal value under certain conditions. Experiments were performed with transistorized filters designed to supply particular transfer functions through the use of ideal power converters. The results they gave are in good agreement with the results of theoretical computations.

2/2

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1/2 016
UNCLASSIFIED
PROCESSING DATE--27NOV70
TITLE--2, ALPHA, PHENYL, ALPHA, P, FLUOROPHENYL, ACETYL, 1, 3, INDANDIONE -U-
AUTHOR--(05)-AREN, A.K., ZELMEN, V.N., OZOLIN, R.R., SHAFRO, E.A.,
FALKENSHTEYN, B.YU.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 263,586
REFERENCE--OTKRYTIYA, IZOBRET., PROM, OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--BENZENE DERIVATIVE, AROMATIC KETONE, CHEMICAL PATENT, CHEMICAL
SEPARATION, FLUORINATED ORGANIC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1587
STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0135228
UNCLASSIFIED

2/2 016

CIRC ACCESSION NO--AA0135228

UNCLASSIFIED

PROCESSING DATE--27NOV70

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

ABSTRACT. THE TITLE PRODUCT IS SEPD. BY
SUCCESSIVE TREATMENT WITH H SUB2 O, A MINERAL ACID, AND ISOPROPYL ALC.

FACILITY: INSTITUT ORGANICHESKOGO SINTEZA AN LATVIYSKOY SSR

UNCLASSIFIED

USSR

UDC 531.01

ZEL'TIN, A. I., SHAKHAYDAROVA, P. Sh.

"Motion of a Material Point Under the Effect of Continuous Impacts of Particles Radiating From a Center of Attraction"

Nauchn. tr. Tashkent. un-t (Scientific Works. Tashkent University), 1970, vyp. 397, pp 82-87 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10A128)

Translation: The authors consider the problem of motion of a material point acted on by a central force of attraction toward a fixed center, and by the impacts of particles radiated from the center of attraction at a velocity with constant magnitude. The analysis is done in polar coordinates. It is assumed that the differential equation for the trajectory is a linear equation with constant coefficients derived from Binet's formula, after which a general solution is found for this equation. Ye. N. Berezkin.

1/1

USSR

UDC 543.426.541.49.546.831

TASHKHODZHAYEV, A. T., ZEL'TSER, I. YE., KHIKMATOV, KH., Tashkent Order of the Red Banner of Labor State University imeni V. I. Lenin

"Study of the Luminescent Reaction of Complex Formation of Salicylal-4-aminoantipyrine with Zirconium"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, No 3, 1972, pp 22-24

Abstract: Results are presented of a study of the luminescent reaction of complex formation of zirconium with azomethyne salicylal-4-aminoantipyrine (SAAN). The azomethyne compound of SAAN forms a luminescent complex compound with zirconium at a pH of 1-2. The maximum fluorescence of the complex is observed for $\lambda = 554$ nm. The components interact in the molar ratio of 1:2. The complex is electroneutral. The objective criterion of sensitivity (the product of the molar coefficient of the light absorption times the quantum yield of the fluorescence) increases by comparison with the reagent by 53 times. The sensitivity with respect to 38 criteria is 0.04 micrograms/5 ml. SAAN is the most sensitive and selective reagent to zirconium of the azomethyne compounds. Therefore, the investigated reaction can be used as a basis for a method of luminescent quantitative analysis of zirconium.

1/1

020 UNCLASSIFIED PROCESSING DATE--160170
TITLE--EFFECT OF SOME TECHNOLOGICAL PARAMETERS OF AN OXYGEN CONVERTER MELT
ON THE STABILITY OF TAR DOLOMITE MAGNESITE LINING -U-
AUTHOR--(05)-KUZNETSOV, A.F., SHAM, P.I., PASHCHENKO, N.K., BOLSHAKOV,
V.A., ZELTSER, I.G.
COUNTRY OF INFO--USSR

2

SOURCE--OGNEUPORY 1970, 35(2), 35-9

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METAL OXYGEN CONVERSION, SLAG, PIG IRON, CORROSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

COPIES REEL/FRAME--1996/0873

STEP NO--UR/0131/70/035/002/0035/0039

ARC ACCESSION NO--AP0118045

UNCLASSIFIED

72 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

RC ACCESSION NO--AP0118045

STRACT/EXTRACT--(U) GP-0- ABSTRACT. AS A LINING FOR O CONVERTERS IN THE REFINING OF PIG IRON, A MIXT. OF 65PERCENT DOLomite AND 35PERCENT MAGNESITY, TO WHICH WAS ADDED 5PERCENT TAR CONTG. 70-5PERCENT PITCH, WAS USED. THE CORROSION OF THE LINING DURING EXPLOITATION IS CONNECTED WITH DECARBONIZATION OF THE WORKING LAYER AND DIFFUSION OF OXIDES FROM THE SLAG INTO THE LINING, WITH FORMATION OF EASY MELTING COMPS. (FERRITES, BROWN MILLERITE, ETC.). MOST INFLUENCE IN THESE PROCESSES HAVE FE OXIDES, AS THEY EFFECT THE DECARBONIZATION; CA FERRITES FORMED HAVE A LOW M.P. AN INCREASE OF THE TEMP. OF THE MELT ACCELERATES THE CORROSION OF THE LINING. THE CORROSION OF THE LINING IS DECREASED BY INCREASING CAO CONTENT OF THE SLAG, AS A CONSEQUENCE OF A DECREASE OF OTHER COMPS. PRESENT. THE RATE OF DISSOLN. OF CAO IS NOT CONST. DURING BLOWING AND DEPENDS ON THE FE OXIDE CONTENT OF THE SLAG. IN ORDER TO PROMOTE THE RATE OF DISSOLN. OF CAO, IT IS RECOMMENDED TO ADD A 2ND PORTION OF CAO BEFORE THE INTENSIVE DISSOLN. OF THE 1ST PORTION BEGINS, THAT IS 4-6 MIN AFTER BEGINNING OF THE BLOWING. THE RATE OF DISSOLN. OF THE LINING DURING THE 1ST HALF OF THE PERIOD OF BLOWING IS CONST., DURING THE 2ND HALF OF THE PERIOD IT INCREASES, DEPENDENT ON TEMP. AND FE OXIDE CONTENT OF THE SLAG. OVER OXIDN. OF THE SLAG DURING THE 2ND PERIOD IS UNDESIRABLE. THE CORROSION OF THE LINING DEPENDS ON THE BLOWING REGIME AND THE CONSTRUCTION OF THE NOZZLE AND INCREASES WITH PROLONGATION OF THE BLOW.

FACILITY: ZHDANOV. MET. INST., ZHDANOC, USSR.

UNCLASSIFIED

USSR

UDC: 577.4

ZEL'TSER, L. B., SAPUNAR, E. I.

"Solution of Optimization Problems by a Collective of Independent Automata"

Materialy seminara po kibernet. AN MoldSSR, Mold. territor. gruppa Nats. kom. SSSR po avtomat. upr. (Materials of a Seminar on Cybernetics, Academy of Sciences of the Moldavian SSR, Moldavian Territorial Group of the National Commission of the USSR on Automatic Control), 1973, vyp. 51, pp 3-17 (from RZh-Kibernetika, No 7, Jul 73, abstract No TV423)

Translation: A survey of some papers dealing with the use of a collective of independent automata for solving optimization problems.

1/1

- 28 -

Acc. Nr: **AP0049058**

Z

Ref. Code: *UR0357*

PRIMARY SOURCE: Vestnik Oftal'mologii, 1970, Nr / , pp 75-77

FIRST RESULTS OF TREATING STRABISMUS AND AMBLYOPIA AT A SPECIALIZED SANATORIUM DEPARTMENT

N. S. Bonoug, N. Ya. Zeltser, V. P. Smolyakova

Summary

In January, 1968, the first in the Soviet Union eye sanatorium department for the treatment of strabismus and amblyopia became operative at the Childrens' Clinical Hospital No 1. Dysbinocular amblyopia (with visual acuity of up to 6.1 inclusive) and that of median degree with acentric fixation, as well as nonaccommodative strabismus demanding complex treatment were among indications for the referral to the sanatorium department.

In addition to special pleoptorthopic exercises the children undergo general tonic treatment for, being debilitated, their general health status must be improved to provide for successful correction of strabismus and amblyopia.

In the specialized sanatorium department a highly qualified, active, regular and long-term treatment of children with strabismus and amblyopia is ensured, which with outpatient management of some of them would appear to be impossible by virtue of domestic and other conditions.

1/1

REEL/FRAME
19800845

hh 2

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--INFLUENCE OF THE RATE AND NATURE OF A GAS CARRIER ON THE
EFFECTIVENESS AND PRODUCTIVITY OF GAS ADSORPTION PREPARATIVE COLUMNS -U-
AUTHOR-(02)-ZELVENSKIY, V.YU., SAKODYNSKIY, K.I.

COUNTRY OF INFO--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(1), 135-42

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GAS CHROMATOGRAPHY, GAS ADSORPTION, FLOW RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1997/0563

STEP NO--UR/0204/70/010/001/0135/0142

CIRC ACCESSION NO--AP0119481

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119481

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VALIDITY OF THE THEORETICAL
RELATIONS DESCRIBING LINEAR CHROMATOG. WAS CONFIRMED ALSO FOR GAS
ADSORPTION PREPARATIVE COLUMNS. OPTIMAL FLOW RATES OF THE CARRIER GAS
WERE ESTD. FOR COLUMNS PACKED WITH MODIFIED SILICA WITH REGARD TO THE
EFFICIENCIES, PRODUCTIVITIES, AND PEAK SYMMETRIES. THE DECREASE IN
EFFICIENCY AFTER INCREASE OF THE CARRIER GAS FLOW RATE OCCURS MORE
SLOWLY AT THE ADSORBENTS THAN AT THE LIQ. PHASE. WHEN LOW MOL. WT.
CARRIER GASES ARE USED THE FLOW RATE CAN BE INCREASED CONSIDERABLY
WITHOUT SUBSTANTIAL DECREASE OF EFFICIENCY. FACILITY:
NAUCH.-ISSLED. FIZ.-KHIM. INST. IM. KARPOVA., MOSCOW, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ACTIVITY OF SOME SERUM ENZYMES IN TREATING PATIENTS WITH PULMONARY
CANCER WITH MASSIVE DOSES OF CYCLOPHOSPHANE -U-
AUTHOR-(03)-ZELVIN, B.M., BELOUSOV, A.P., BATINOV, I.N.
COUNTRY OF INFO--USSR
SOURCE--VOP. ONKOL. 1970, 16(2), 26-9
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PULMONARY DISEASE, CANCER, ANTINEOPLASTIC DRUG, ORGANIC
PHOSPHORUS COMPOUND, CELL PHYSIOLOGY, ENZYME ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/2041 STEP NO--UR/0506/70/016/002/0026/0029
CIRC ACCESSION NO--AP0117284
UNCLASSIFIED

2/2 017

CIRC ACCESSION NO--AP0117284

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT. THE LEVELS OF THE ENZYMES, ALANINE AND ASPARTIC AMINOTRANSFERASE (ALT AND AST) AND CHOLINESTERASE WERE INVESTIGATED IN THE SERUM OF PATIENTS TREATED WITH CYCLOPHOSPHANE (26 WITH LUNG TUMORS BEFORE SURGERY AND 10 AFTER RADICAL SURFERY). THE DRUG WAS GIVEN IN LARGER DOSES, 2 TO 5 G I.V. EVERY 10-14 DAYS. ALT AND AST WERE DETD. BY THE UMBRIGHT METHODS (MODIFIED); CHOLINESTERASE LEVEL WAS EVALUATED BY MEASUREMENT OF HOAC, AFTER ENZYMIC DECOMP. OF ACETYLCHOLINE DURING 1 MIN IN 1 ML SERUM. THE ENZYMES WERE MEASURED BEFORE THE BEGINNING OF TREATMENT, ON THE 2-3RD DAY, AND ON THE 10-12TH DAY. HEALTHY (15) PERSONS SERVED AS CONTROLS. IN CASES OF MALIGNANCY THE INITIAL VALUES WERE SOMEWHAT HIGHER THAN IN NORMALS, AFTER THE ADMINISTRATION OF CYCLOPHOSPHANE, A DISTINCT RISE OF ALT, A LESSER RISE OF AST, AND A FALL IN CHOLINESTERASE ACTIVITIES WERE OBSD. AFTER RADICAL SURGERY THE SHIFTS WERE LESS DISTINCT, NO RISE OF AST WAS OBSD. NO DEPENDANCE WAS FOUND BETWEEN THE ENZYMIC ACITIVITY AND THE STAGE OF THE DISEASE. THE OBSO. CHANGES MAY BE CONSIDERED AS SIGNS OF METABOLIC DISTURBANCES IN THE LIVER.

FACILITY: LAB. BIOCHEM., P. A.
 GERTSEN RES. INST. ONCOL., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.372.5/.6

ZELYAKH, E. V., ROYTMAN, L. M.

"Methods of Calculating the Z-Parameters of a Nonautonomous Two-Terminal Network"

V sb. Voopr. elektrosvyazi (Problems of Electrical Communications--collection of works), Kiev, "Tekhnika", 1970, pp 9-15 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A111)

Translation: Two methods of calculating the z-parameters of nonautonomous 2n-terminal networks are presented. The first method utilizes the resistance matrix of a circuit made up of 2n-terminal networks by short-circuiting the terminals in each pair, while the second method utilizes the conductance matrix of a circuit made up of 2n-terminal networks with open terminal pairs. Three illustrations. Resumé.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--USING THE IDEAL POWER CONVERTER IN THE SYNTHESIS OF ACTIVE RC
FILTERS -U-
AUTHOR--(02)-ZELYAKH, E.V., ZELINSKIY, M.M.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 5, 1970, PP 98-992
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--FILTER CIRCUIT, RC FILTER, ELECTRIC FILTER, FREQUENCY
CONVERTER, TRANSISTORIZED CIRCUIT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0595 STEP NO--UR/0109/70/000/005/0098/0992
CIRC ACCESSION NO--AP0132757
UNCLASSIFIED

272 018

CIRC ACCESSION NO--AP0132757

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHARACTERISTICS USUALLY PROVIDED BY LC FILTERS CAN BE DUPLICATED AT LOW FREQUENCIES, WHERE THE INDUCTANCE WOULD BE BULKY AND CUMBERSOME, BY RC CIRCUITS. THIS ARTICLE CONSIDERS TWO MODELS OF RC FILTER WHERE THE ACTIVE ELEMENT IS AN IDEAL POWER CONVERTER. THE CONVERSION FACTOR IS ASSUMED TO BE REAL AND LARGER THAN UNITY. TWO METHODS OF CONNECTING IDEAL POWER CONVERTERS TO OBTAIN A NEGATIVE RESISTANCE CONVERTER ARE SHOWN. THE PROCEDURE FOR REALIZING A LINVILL MODEL (J. G. LINVILL, PROC. IRE, 1954, 42, P. 555) TO SYNTHESIZE ACTIVE FILTERS IS CONSIDERED UNDER THE ASSUMPTION THAT THE MODEL CONTAINS A GENERALIZED NEGATIVE RESISTANCE CONVERTER IN THE SINGLE CONVERTER. THE FUNCTION OF THE IDEAL POWER CONVERTER IN THE YANAGISAWA MODEL (IRE TRANS. 1957, CT4, 4, 140) FOR SYNTHESIZING THE VOLTAGE TRANSFER FUNCTION IS DISCUSSED. MODELS USING SINGLE NEGATIVE RESISTANCE CONVERTERS ARE COMPARED WITH MODELS USING THE IDEAL POWER CONVERTER AND ARE FOUND TO BE OF EQUAL VALUE UNDER CERTAIN CONDITIONS. EXPERIMENTS WERE PERFORMED WITH TRANSISTORIZED FILTERS DESIGNED TO SUPPLY PARTICULAR TRANSFER FUNCTIONS THROUGH THE USE OF IDEAL POWER CONVERTERS. THE RESULTS THEY GAVE ARE IN GOOD AGREEMENT WITH THE RESULTS OF THEORETICAL COMPUTATIONS.

UNCLASSIFIED

USSR

UDC: 621.372.57

2
ZELYAKH, E. V., ZELINSKIY, M. M.

"Using the Ideal Power Converter in the Synthesis of Active R-C Filters"

Moscow, Radiotekhnika i Elektronika, No 5, 1970, pp 98-992

Abstract: The characteristics usually provided by L-C filters can be duplicated at low frequencies, where the inductance would be bulky and cumbersome, by R-C circuits. This article considers two models of R-C filter where the active element is an ideal power converter. The conversion factor is assumed to be real and larger than unity. Two methods of connecting ideal power converters to obtain a negative-resistance converter are shown. The procedure for realizing a Linvill model (J. G. Linvill, Proc. IRE, 1954, 42, p. 555) to synthesize active filters is considered under the assumption that the model contains a generalized negative-resistance converter instead of a single converter. The function of the ideal power converter in the Yanagisawa model (IRE Trans. 1/2

USSR

ZELYAKH, E. V., et al, Radiotekhnika i Elektronika, No. 5, 1970,
pp 984-992

1957, CT-4, 4, 140) for synthesizing the voltage transfer function is discussed. Models using single negative-resistance converters are compared with models using the ideal power converter and are found to be of equal value under certain conditions. Experiments were performed with transistorized filters designed to supply particular transfer functions through the use of ideal power converters. The results they gave are in good agreement with the results of theoretical computations.

2/2

- 37 -

1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFICIENCY OF ANTIBIOTICS UNDER CONDITIONS OF PROLONG GAMMA
IRRADIATION OF LOW INTENSITY -U-
AUTHOR--ZELYAKOVA, D.I.
COUNTRY OF INFO--USSR
SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 6, PP 519-522
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--STREPTOMYCIN, PENICILLIN, LEVOMYCETIN, IRRADIATION EFFECT,
GAMMA IRRADIATION, ANTIRADIATION DRUG
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1861 STEP NO--UR/0297/70/015/006/0519/0522
CIRC ACCESSION NO--AP0125472
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125472

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFICIENCY OF ANTIBIOTIC THERAPY UNDER CONDITIONS OF PROLONG OUTSIDE GAMMA IRRADIATION OF RATS AT A DOSE OF 0.24 TO 0.28 R-MIN. (SUMMATION DOSE UP TO 1600, 1860 AND 2000 R) WAS STUDIED. IT WAS FOUND THAT EFFICIENCY OF THE ANTIBIOTICS DEPENDED ON THE SUMMATION DOSES OF GAMMA IRRADIATION. HIGH EFFICIENCY OF THE ANTIBIOTIC THERAPY WAS OBSERVED WITHIN THE DOSES INDUCING DEATH OF 70 TO 90 PER CENT OF THE CONTROL ANIMALS. UNDER SUCH IRRADIATION CONDITIONS GLETETRIN WAS MOST EFFECTIVE (10 TO 36 PERCENT OF DEATHS), COMBINATION OF STREPTOMYCIN, PENICILLIN AND LEVOMYCETIN WAS CLOSE TO IT BY ITS EFFICIENCY. THE THERAPEUTIC EFFECT OF GLETETRIN UNDER CONDITIONS OF IRRADIATION WITH ABSOLUTELY LETHAL DOSES SIGNIFICANTLY DECREASED (80 PER CENT OF DEATHS). TREATMENT BEGUN DURING THE FIRST DAYS OF THE IRRADIATION WAS MOST EFFECTIVE. THE RESULTS OF THE STUDY INDICATE TO A NECESSITY OF INCLUDING ANTIBIOTICS IN TO COMPLEX THERAPY OF ACUTE IRRADIATION DISEASE, INDUCED BY PROLONG OUTSIDE GAMMA IRRADIATION.

UNCLASSIFIED

USSR

ARKHIPOVA, Ye. S., ZEL'YEV, N. S.

"Software for M-20 Computer Program-Controlled Indicator"

Vychisl. Mat. i Vychisl. Tekhn. [Computational Mathematics and Computer Equipment -- Collection of Works], No 2, Khar'kov, 1971, pp 76-78, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V701 by the author's).

Translation: A description is presented of two standard subroutines designed for display device software.

1/1

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USSR

UDC 624.07:534.1

ZELYUKOVA, R. V.

"Device for Vibration Testing of Models of Simple Systems"

V sb. Rasseyaniye energii pri kolebaniyakh mekh. sistem (Energy Scattering Under Oscillations of Mechanical Systems -- Collection of Works), Kiev, "Nauk. dumka", 1972, pp 287-292 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V270)

Translation: A device for vibration testing of composite elements for stress-compression, bending, torsion, and the joint action of bending and torsion is described. The device is intended for studying structural deformation of bonds. The article was published in this order of discussion. A. G. Barchenkov.

1/1

- 157 -

172 016

TITLE--ATOMIC FLUORESCENT DETERMINATION OF MERCURY --U--
AUTHOR--(03)-VITKUN, R.A., POLUEKTOV, N.S., ZELYUKOVA, YU.V.

UNCLASSIFIED
PROCESSING DATE--30OCT70

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 474-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MERCURY, METAL CHEMICAL ANALYSIS, FLUORESCENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1058

CIRC ACCESSION NO--AP0123051

STEP NO--UR/0075/70/025/003/0474/0478

UNCLASSIFIED

2/2 016

CIRC ACCESSION NO--AP0123051
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. AN AT. FLUORESCENT METHOD WAS DEVELOPED FOR HG DETN. BY USING A LOW TEMP. FLAME OBTAINED WITH A C SUB3 H SUB8-C SUB4 H SUB10 AND AIR MIXT. USING THE REDN. OF HG TO METAL DURING ATOMIZATION. THE SENSITIVITY OF HG DETN. IS 0.002 MUG-ML AT A CONFIDENCE LEVEL OF 95PERCENT. THE EFFECT OF ORG. SOLVENTS, ANIONS, CATIONS, AND ELEMENTS REDUCED TO THEIR ELEMENTAL STATE IN THE PRESENCE OF SACL SUB2 WAS STUDIED. IN THE ABSENCE OF SNCL SUB2 FLUORESCENCE INTENSITY OF HG IN THE FLAME DECREASES BY 2 ORDERS; GREATER THAN OR EQUAL TO 5N H SUB3 PO SUB4, GREATER THAN OR EQUAL TO 2N H SUB2 SO SUB4 AND HCL SUB4 AFFECT THE FLUORESCENCE INTENSITY. S PRIME2NEGATIVE MUST BE (1N) AND 0.5N HBR DECREASE THE INTENSITY. LI, NA, K, CS, CU, IN, BE, MG, CA, SR, BA, ZN, CO, AL, ZK, PO, V, BI, MO, W, MN, FE, AND CO, 5 MG-ML, DO NOT AFFECT THE ABSENT DURING HG DETN. LI, NA, K, CS, CU, IN, BE, MG, CA, SR, BA, ZN, DETN. OF 0.5 MUG HG-ML; 50 MUG AU, PT, CR(VI), AND 0.5 MG AG ALL IN 1 ML INTERFERE IN THE DETN. OF 1 MG HG-ML. FACILITY: LAB., INST. GEN. INORG. CHEM., ODESSA, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--THEORY OF EXCITATION TRANSFER IN COLLISIONS BETWEEN ALKALI ATOMS.
II. DISSIMILAR PARTNERS -U-

AUTHOR--(04)--DASHEVSKAYA, E.I., NIKITIN, E.E., VORDMIN, A.I., ZEMBEKOV,
A.A.
COUNTRY OF INFO--USSR

SOURCE--CAN. J. PHYS. 1970, 48(8), 981-92

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EXCITATION ENERGY, PULSE EXCITATION, ALKALI, ATOM, DIPOLE
INTERACTION, EXCITATION CROSS SECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1996/1827

STEP NO--CN/0000/70/048/008/0981/0992

CIRC ACCESSION NO--AP0118791

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0118791

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POSSIBLE MECHANISMS ARE CONSIDERED FOR THE TRANSFER OF ELECTRONIC EXCITATION ENERGY IN COLLISIONS BETWEEN AN EXCITED ALKALI ATOM M SUBA SEXTILE (PRIMEZ P SUBJ) AND AN UNEXICITED ATOM M SUBB (PRIMEZ S SUBONE HALF). A DIPOLE DIPOLE INTERACTION WHICH IS RESPONSIBLE FOR THE TRANSFER OF ELECTRONIC EXCITATION ENERGY IN COLLISIONS BETWEEN IDENTICAL PARTNERS (M SUBA EQUALS M SUBB) IS NOT SUFFICIENT TO EXPLAIN THE OBSD. MAGNITUDES OF THE CROSS SECTIONS AND THEREFORE, THE EXCHANGE INTERACTION CAN NO LONGER BE NEGLECTED. IF THE EXCHANGE INTERACTION IS TAKEN INTO ACCOUNT, THERE ARE REGIONS OF NONADIABATICITY IN THE ENERGY DIAGRAM, WHICH ARE PROBABLY RESPONSIBLE FOR THE CHANGE IN THE ELECTRONIC ENERGY STATES OF THE COLLISION PARTNERS. THE CALCD. CROSS SECTIONS ARE COMPARED WITH EXPTL. VALUES.

FACILITY: INST. TERR. MAGN., IONOS. RADIO WAVE PROPAGATION, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 581

KANEVCHEVA, I. S., ~~ZEMLYNA, A. G.~~ YEFREMENKO, YE. A., and LOMATSKAYA, YE. N.,
North Caucasian Scientific Research Institute of Phytopathology, Krasnodar

"Effect of Wheat Streak Mosaic Virus on the Composition of Nucleic Acids in
Wheat Leaves"

Moscow, Fiziologiya Rasteniy, No 1, 1971, pp 186-189

Abstract: Infection of wheat (Bezostaya 1 variety) leaves with streak mosaic virus resulted in destruction of the fraction of high molecular weight nucleic acids. The quantity of nucleic acids extracted from the leaves of diseased plants was only 56 to 79% of that obtained from healthy plants. On columns with methylated albumin, the nucleic acids were separated into several fractions - soluble, DNA, and ribosomal nucleic acid. The infected plants were characterized by a decrease in the content of ribosomal nucleic acids and accumulation of soluble nucleic acids. Virus reproduction is accompanied by the destruction of normal nucleic acids. This seems to be the main reason for the damage done by the disease. None of the fractions studied or even a total extract of nucleic acids proved to be infectious. Competition between normal and viral RNA for the "cell receptors" in the leaves is presumed responsible.

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1/2 022

UNCLASSIFIED

PROCESSING DATE--11DEC70

TITLE--WHEAT STREAK MOSAIC VIRUS AND PROTEIN METABOLISM IN WINTER WHEAT
-U-

AUTHOR--(O+)--KANEVCHEVA, I.S., ALESHIN, YE.P., ZEMLINA, A.G., SARAPULKIN, M.M.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI, 1970, NR 3, PP 27-29

DATE PUBLISHED-----70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WHEAT, PLANT DISEASE, PROTEIN METABOLISM, PLANT VIRUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO--F070/605049/E02 STEP NO--UR/9091/70/000/003/0027/0029

CIRC ACCESSION NO--AP0143384

UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--AP0143384
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--11DEC70

ABSTRACT. - PROTEIN METABOLISM IN LEAVES AND
TILLERING NODES OF HEALTHY WINTER WHEAT, VARIETY BEZOSTAYA 1, AND WHEAT
INFECTED WITH WHEAT STREAK MOSAIC, WAS STUDIED. TESTS SHOWED THAT
INFECTION CONSIDERABLY DISRUPTS NITROGEN METABOLISM IN PLANTS; THE
AMOUNT OF PROTEIN NITROGEN DECREASED AND THE AMOUNT OF NONPROTEIN
INCREASED, INDICATING INHIBITION OF PROTEIN SYNTHESIS BY THE VIRUS.
FRACTIONATION OF PROTEINS ON AE CELLULOSE SHOWED THAT THE VIRUS CAUSES
IMPORTANT CHANGES IN PROTEIN METABOLISM: THE NUMBER OF PROTEIN
FRACTIONS IN INFECTED PLANTS DROPPED FROM EIGHT TO SIX, AND TWO NEW
FRACTIONS NOT FOUND IN HEALTHY PLANTS APPEARED. APPARENTLY THE VIRUS
PREVENTS SYNTHESIS OF PLANT PROTEINS IN FAVOR OF ITS OWN.

UNCLASSIFIED

USSR

UDC 635.11+632.9

KANEVCHEVA, I. S., ALESHIN, Ye. P., ZEMLINA, A. G., and SARAPULKIN, M. M.

"Wheat Streak Mosaic Virus and Protein Metabolism in Winter Wheat"

Moscow, Vestnik Sel'skokhozyaystvennoy Nauki, No 3, 1970, pp 27-29

Abstract: Wheat streak mosaic virus causes massive destruction of winter wheat in the epiphytotic period in the Krasnodarsk area. In an attempt to elucidate the mechanism of this infection, the authors studied the effect of the virus on protein content in the leaves of Bezostaya I wheat. They found that virus infection affects plant nitrogen metabolism: infected plants show lower levels of protein nitrogen and increased values of nonprotein nitrogen, indicating depressed protein synthesis. Chromatography of albumin on AE-cellulose A-50 showed that the virus causes extensive changes in protein metabolism. Many fractions disappear, while new ones show up which were absent in healthy plants.

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USSR

UDC: 535.8:535.241.13

ZEMLYACHEV, Ye. Z., PARYGIN, V. N.

"A Light Modulator With Optical Resonator"

Moscow, Radiotekhnika i Elektronika, Vol. 16, No 6, Jun 71, pp 1010-1016

Abstract: An experimental and theoretical study is made of a Fabry-Perot electro-optical modulator. Modulation and frequency characteristics are found with regard to light losses in the crystal. Experimental data obtained on a wavelength of 6328 Å using various cuts of KDP and ADP crystals agree well with the theory. When mirrors having a coefficient of reflection of 0.96 were used with a 45° X-cut of ADP crystals, light losses were 20 percent. The voltage necessary for 65 percent modulation in this case was 15 V_{eff}. The modulation frequency band was 175 MHz. Thus the interference modulator has a considerable advantage over a polarization modulator with respect to power consumption. A disadvantage of the device is the necessity for using a single-frequency laser with frequency stability of the order of $5 \cdot 10^{-8}$. Besides this, the temperature stability of the crystal must be $\sim 10^{-2} - 10^{-3} \text{ } ^\circ\text{C}$, depending on the crystal used.

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1/2 018
 TITLE--ACID BASE PROPERTIES OF COBALT, III, TRANS DIOXIMES --U--
 UNCLASSIFIED
 PROCESSING DATE--27NOV70
 AUTHOR--(03)-ABLOV, A.V., BOVYKIN, B.A., ZEMLYAK, V.YU.
 COUNTRY OF INFO--USSR
 SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 466-9
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--COBALT COMPLEX, OXIME, POTENTIOMETRIC TITRATION,
 SPECTROPHOTOMETRY, DISSOCIATION CONSTANT
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--3007/0819
 STEP NO--UR/0078/70/015/002/0466/0469
 CIRC ACCESSION NO--AP0136253
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 018

CIRC ACCESSION NO--AP0136253

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. ACID DISSOCN. CONSTS. (K SUBA) OF
 (CO(OH) SUB2 A SUB2) PRIMEPOSITIVE, WHERE A EQUALS BETA OR GAMMA SUBSD.
 PYRIDINE (PY) AND OH EQUALS MECl:NONIC (IND PRIMENEGATIVE) ME, HERE
 DETD. POTENTIOMETRICALLY AND SPECTROPHOTOMETRICALLY. THE VALUES OF PK
 SUBA FOR COMPLEXES HAVING A EQUALS GAMMA MEPY, BETA CLPY, BETA CH SUB2
 :CHPY, BETA NH SUB2 PY, BETA ETPY ARE TABULATED. PK SUBA VALUES OF
 FREE A CHANGE WITH SUBSTITUTION FROM 2.84 TO 6.02 WHILE THOSE OF (CO(OH)
 SUB2 A SUB2) PRIMEPOSITIVE ARE WITHIN A VERY NARROW VALUE RANGE OF
 7.15-7.40. FACILITY: KISHINEV. GOS. UNIV., KISHINEV, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--020CT70
 TITLE--THE EFFICIENCY OF KAPRON NUTS IN SCREW COUPLES -U-
 AUTHOR--(G2)-DIDUSEV, B.A., ZEMLYAKOV, I.P.
 COUNTRY OF INFO--USSR
 SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 2, PP 52-53 1970
 DATE PUBLISHED-----70
 SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS
 TOPIC TAGS--NYLON, BRONZE, BRASS, MECHANICAL FASTENER, WEAR RESISTANCE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1993/1755
 STEP NO--UR/0122/70/000/002/0052/0053
 CIRC ACCESSION NO--AP0114254
 UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0114254

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN AN ATTEMPT TO FIND MORE HIGHLY WEAR RESISTANT MATERIALS THAN THE CURRENTLY USED SCARCE BRONZES AND BRASSES FOR THE PRODUCTION OF SLIDING NUTS, RESEARCH WAS CARRIED OUT ON THE ANTIFRICTION PROPERTIES AND WEAR RESISTANCE OF COARSE THREAD NUTS MADE OF KAPRON. IT WAS FOUND THAT WHEN USED IN SCREW COUPLES FOR LIGHT AND MEDIUM OPERATING CONDITIONS, USE MAY BE RECOMMENDED ONLY WITH A PRESSURE UPON THE THREAD SURFACE NOT IN EXCESS OF 50-75 KG (FORCE)-CM². DUE TO THE HIGH MOISTURE ABSORPTION PROPERTIES OF KAPRON, A SCREW PAIR WITH A KAPRON NUT SHOULD BE PROTECTED AGAINST DAMPNES.

UNCLASSIFIED

I/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ADAPTIVE VARIABLE PARAMETER CONTROL OF VEHICLES -U-
AUTHOR--(02)--RUTKOVSKIY, V.IU., ZEMLIAKOV, S.D.
COUNTRY OF INFO--USSR, FRANCE
SOURCE--INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, SYMPOSIUM ON
AUTOMATIC CONTROL, 3RD, TOULOUSE, FRANCE, MAR. 2-6, 1970, PAPER. 12 P.
DATE PUBLISHED-----70
SUBJECT AREAS--SPACE TECHNOLOGY
TOPIC TAGS--SPACECRAFT TRAJECTORY, FLIGHT CONTROL SYSTEM, MODEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0007 STEP NO--FR/0000/70/000/000/0012/0012
CIRC ACCESSION NO--AY0117307
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--ATO117307

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DERIVATION OF A THEORETICAL BASIS FOR ADAPTIVE SPACECRAFT TRAJECTORY CONTROL SYSTEMS WITH VARIABLE PARAMETERS. PROCEDURES ARE DERIVED FOR SYNTHETIZING BASIC AND ADAPTIVE LOOPS OF SUCH SYSTEMS. THE STABILITY AND DYNAMIC ACCURACY OF AN ADAPTIVE MODEL REFERENCE CONTROL SYSTEM ARE ANALYZED.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ADAPTIVE VARIABLE PARAMETER CONTROL OF VEHICLES --U-
AUTHOR--(03)-PETROV, R.N., RUTHKOVSKY, V.YU., ZEMLYAKOV, S.O.
COUNTRY OF INFO--USSR, FRANCE
SOURCE--3RD IFAC SYMPOSIUM ON SPACE CONTROL, TOULOUSE, FRANCE, MARCH 1970
DATE PUBLISHED-----70
SUBJECT AREAS--MATHEMATICAL SCIENCES, SPACE TECHNOLOGY, NAVIGATION
TOPIC TAGS--LINEAR EQUATION, MATHEMATIC MODEL, SPACECRAFT, SATELLITE CONTROL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1876 STEP NO--FR/0000/70/000/000/0000/0000
GIRC ACCESSION NO--AT0138768
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0138768

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

ABSTRACT. USUALLY THE METHOD OF

LINEARIZATION ALLOWS TO GET A MATHEMATICAL MODEL OF A VEHICLE AS A LINEAR EQUATION (1, 2) SHOWN ON MICROFICHE. IT IS OBVIOUS FROM (1) THAT THE ORDER OF THE PLANT EQUATION IS CONSTANT. THE SYNTHESIS OF A CONTROL SYSTEM MAY BE REPRESENTED AS A MINIMIZATION OR RESTRICTION PROBLEM OF A FUNCTIONAL, Q, (3) SHOWN ON MICROFICHE. AT PRESENT THE METHOD WHICH IS WIDELY APPLIED FOR THE CONSTRUCTION OF A CONTROL SYSTEM IS TO MAKE THE VARIABLE MOVE SO AS TO PROVIDE THE DESIRED MOTION OF THE CONTROL VARIABLE. WE SHALL NAME THIS METHOD OF PLANT CONTROL AS THE VARIABLE METHOD. USUALLY THERE IS A SERVOMECHANISM IN THE STRUCTURE OF A CONTROL SYSTEM TO MOVE THE FINAL CONTROL ELEMENT (4) (SHOWN ON MICROFICHE). OFTEN A CONTROL SYSTEM IS DESIGNED AS A COMBINED SYSTEM WHERE BOTH CLOSE LOOP CONTROL AND OPEN LOOP CONTROL ARE APPLIED. IF DYNAMIC PROPERTIES VARY WIDELY OVER ONE FLIGHT REGIME OR FROM ONE REGIME TO ANOTHER, A REGULATOR ALSO HAS TO BE ADJUSTABLE TO PROVIDE MINIMIZATION OR RESTRICTION OF FUNCTIONAL (3). AS A RESULT WE OBTAIN ADAPTIVE VARIABLE CONTROL OF A PLANT. SOMETIMES ADAPTIVE VARIABLE CONTROL DOES NOT PROVIDE RESTRICTION OF FUNCTIONAL (3) WITHOUT SPECIAL CHANGING THE PLANT DYNAMIC PROPERTIES. PURPOSEFUL CHANGE OF PLANT PARAMETERS WILL BE TERMED AS THE PARAMETER CONTROL METHOD.

UNCLASSIFIED

USSR

UDC 629.7.05.001.2(082)

Petrov, B. N., Rutkovskiy, V. Yu., Krutova, I. N., Zemlyakov, S. D.

PRINTSIFY I OSTROYENIYA I PROEKTIROVANIYA SAMONASTRAIVAYUSHCHIKHSYA SISTEM UPRAVLENIYA (Principles of Building and Planning Adaptive Control Systems) Moscow, "Mashinostroyeniye" 1972, 260 pp, illus, biblio, 5,300 copies printed

The book presents a brief analysis of the principles of building, the fundamentals of planning, methods of synthesizing and computing model-reference ("nontracking") adaptive control systems, which are most widely used in flight control of aircraft.

The book is intended for use by engineers and scientific workers engaged in the planning of automatic control systems, and can also be of use to students in the advanced courses at the VUZ level.

No mention is made of any particular ACS for any specific aircraft or missile system. The various types of adaptive systems are illustrated by block diagram only.

The first 99 items in the 124-item bibliography are Russian-language sources, the remaining 25 items are English-language sources.

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USSR

PRINTSIY I OSTROBNAYA I PROYECTIROVANIYA SAMONASTRAIVAYUSHONIKHNSYA SISTEM
UPRAVLENIYA (Principles of Building and Planning Adaptive Control Systems),
Petrov, Rutkovskiy, Krutova and Zemlyakov, Moscow, 1972, 260 pp

Contents

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Introduction 7
Chapter I. The Basic Circuit and Information In Model-Reference (Nontracking)
Adaptive Control Systems 16
Chapter II. Adaptive Systems With Information On Frequency Characteristics 63
Chapter III. Model-Reference Adaptive Control Systems 103
Chapter IV. Nontracking Adaptive Control Systems With Time-Characteristic
Monitoring 188
Chapter V. The Adaptive Properties of Certain Adaptive Systems.. . . . 225
Bibliography 251

2/2

USSR

UDC 632.95

PAVLENKO, A. F., AKKERMAN, V. P., MOSHCHITSKIY, S. D., and ZENILYAKOVA, N. G.

"Alkoxylation of 2,3,5,6-Tetrachloro, 2-Trichloromethyl-3,5-dichloro- and 2-Trichloromethyl-3,5,6-trichloropyridyl-4-amidophosphoric Acid Dichlorides with Higher Alcohols"

Alkoksilirovaniye diklorangidridov 2,3,5,6-tetrakhlora, 2-triklorometil-3,5-dikhlora i 2-trikhlormetil-3,5,6-trikhlorpiridil-4-amidofosfornoy kisloty vysshimi spirtami (Cf. English above), Institute of Organic Chemistry, Academy of Sciences Ukrainina SSR, Kiev, 1972, 4 pp, ill., bibliography with one title, Manuscript No 4383-72 of 5 May 72 deposited at All-Union Institute of Scientific and Technical Information (from RZh-Khimiya, No 20, 25 Oct 72, Abstract No 20N594 Dep from Authors' summary)

Translation: For the purpose of finding new plant growth regulators, 2,3,5,6-tetrachloro-, 2-trichloromethyl-3,5-dichloro- and 2-trichloromethyl-3,5,6-trichloropyridyl-4-amidophosphoric acid dichlorides were alkoxyated with hexyl, heptyl, octyl, nonyl, decyl and cetyl alcohols. In biological tests the strongest herbicidal properties were exhibited by the dioctyl ester of 2-trichloromethyl-3,5-dichloropyridyl-4-amidophosphoric acid.

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- 62 -

USSR

UDC 57.085.23:576.851.55.097.29

YERMAKOVA, M. P., SHAMRAYEVA, S. A., ZEMLYANITSKAYA, Ye. P., and VLASOVA, Ye. V., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Morphological and Histochemical Changes Produced by Clostridium sordelli and Clostridium oedematiens Toxins in Cultures of Fibroblasts, Kidney Epithelium, and Macrophages"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 23-28

Abstract: C. sordelli and C. oedematiens toxins had a marked cytotoxic effect on cultures of chick fibroblasts, transplanted human fetal kidney epithelium, and macrophages from a guinea pig peritoneal exudate. C. sordelli toxin caused vacuolar degeneration of the cytoplasm; while C. oedematiens toxin produced karyorrhexis, karyopyknosis, karyolysis, karyorrhesis, and marked fatty degeneration of the cytoplasm. Histochemical analysis showed that both toxins intensified acid phosphatase activity in the cytoplasm of the fibroblasts and macrophages, decreased the RNA content of the kidney epithelial cells, and stimulated the formation of lumps of glycogen. The cytotoxic effect was not manifested when the various cultures

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USSR

YERMAKOVA, M. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 23-28

were grown on a nutrient medium containing a mixture of one of the toxins and the corresponding antitoxic serum. A comparative morphological and histochemical study of the effect of *C. sordelli* and *C. oedematiens* exotoxins on sensitive cultures revealed sharp changes in cell structure, lipid content, and acid phosphatase activity characteristic of the particular toxin.

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- 8 -

USSR

UDC 576.851.555.097.2.083.3

SHAMRAYEVA, S. A., ~~ZEMLYANITSKAYA, Ye. P.~~, and MATVEYEV, K. I., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Study of Soluble Antigens of *Cl. perfringens* Types D and E in Tissue Cultures"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971, pp 58-63

Abstract: The effect of activated Σ toxin of *Cl. perfringens* type D on animals and in 11 tissue cultures (KB, PH, HK, HeLa, HEP-2, and others) was studied and an attempt was made to determine whether the tissue cultures can be used to identify strains of *Cl. perfringens* type E. Activated *Cl. perfringens* type D toxin caused necrotic changes in the skin of mice and guinea pigs, but was nontoxic with respect to the 11 types of tissue cultures investigated. The heteroploid cell lines HK, KB, PH, HeLa, and HEP-2 could be used to identify *Cl. perfringens* type E strains in the reaction of neutralization of soluble type E antigens with dry type E antitoxic diagnostic serum. *Cl. perfringens* type E toxin killed the experimental mice and produced cytotoxic changes in the KB, PH, HeLa, and HEP-2 tissue cultures.

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- 13 -

USSR

UDC 576.851.555.083.3.07

ZEMIYANITSKAYA, YE. P., SHAMRAYEVA, S. A., and MATVEYEV, K. I., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Identification of Clostridium perfringens Types B, C, and F in Tissue Culture"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 3, 1971, pp 89-93

Abstract: To test the possibility of identifying the B, C, and F types of *C. perfringens* in tissue cultures, experiments were performed with five strains of each type and six kinds of tissue cultures - 5 heteroploid cell lines (KB, Rh, L, HeLa, HK) and primary trypsinized cultures of chick embryo cells. Study of the spectrum of action of soluble antigens of the three types of *C. perfringens* in tissue culture and examination of the antigens in the neutralization reaction with antitoxic sera of the corresponding three types revealed that the cytotoxic effect of the soluble antigens was caused not by the activity of the main lethal and necrotic beta toxin alone, but by a complex of toxins. The B and C strains elaborated soluble antigens that induced cytotoxic changes in primary trypsinized embryonic cells and were toxic to some of the heteroploid lines. In tissue cultures the soluble antigens exhibited cross neutralization with the antitoxic sera of *C. perfringens*

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USSR

ZEMLYANITSKAYA, YE. P., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
No 3; 1971, pp 89-93

types B, C, and F. However, neutralization of the toxins required the less active sera of the B and C types and the more active type F serum. The type F strains synthesized soluble antigens which had a cytotoxic effect on the heteroploid cell lines and did not induce cytotoxic changes in the primary trypsinized chick embryonic cells. The soluble type F antigens were neutralized in the tissue cultures only by homologous serum.

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USSR

UDC 576.851.55.083.31

ZEMLYANITSKAYA Ye. P., VINOGRADOVA, I. N., and IVANOVA, L. G., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"The Use of Dry Media in the Diagnosis of Diseases Produced by *Cl. oedematiens*, *Cl. septicum*, *Cl. histolyticum*, and *Cl. sordellii*"

Moscow, *Laboratornoye Delo*, No 11, 1970, pp 681-683

Abstract: The effectiveness of bacteriological diagnosis of anaerobic infections is clearly dependent on the media used for culturing these microorganisms. Dry media which are suitable for transport and long-term storage and which are sufficiently simple to prepare appear to be most promising for this purpose. Dry acidic casein hydrolysate has been used for protein separation and for the preparation of anaerobic media. A nutrient broth of the casein hydrolysate was prepared and sterilized and, with other media, was used for culturing various bacteria. The activity of clostridial toxins was determined; specificity was monitored by neutralization with antitoxic specific standard sera. Comparative results of more than 200 tests are presented in tabular form, showing the toxin activity of the different bacterial strains in the various dry media tested.

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USSR

MOROZOV, A. I. and ZEMLYANITSYN, M. A., Institute of Radiotechnology and Electronics Academy of Sciences USSR

"Electroacoustic Interaction of CdS with Pure Surface Shear Waves"

Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (Letters to the Journal of Experimental and Theoretical Physics, Vol 12, No 8, 20 Oct 1970, pp 396-399)

Abstract: Electron absorption and amplification of surface shear waves (ssw) as well as electroacoustic (EA) surface wave effects are studied with CdS monocrystals. Two sets of electrodes were attached to two sides of a long (50 mm), etched, photosensitive CdS crystal: one on the [1010] plane for excitation and detection of ssw and one on the [0001] plane for measuring Rayleigh waves for purposes of comparison. A parallel beam of light falls normal to the [1010] or [0001] planes between a pair of pickup electrodes. The remainder of the crystals is shielded from light. The length of the crystal provided the necessary time delay for the pulse. When the crystal was illuminated, a strong electroacoustic effect and electron absorption was observed for both types of waves. A drop of water between the pickup electrodes produced Rayleigh wave attenuation of 10 to

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MOROZOV, A. I., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 12, No. 8, 20 Oct 1970, p 396-399

15 db, and the EA emf fell by a factor of 6 to 10, depending on interelectrode conductivity. No attenuation effects were observed for shear waves lacking longitudinal components. Application of indium, resin, and other materials capable of shear deformation did have an effect. For example, liquid salol had no effect but, on hardening, damped the ssw by 4 db. At the same time, both liquid and solid forms damped the Rayleigh waves by 12 db. The surface shear waves penetrate deeper into the surface layer. The effective constants of electro-mechanical coupling, Rayleigh and shear wave velocities, and the dependence of the ssw on the drift field are calculated. The authors thank Prof. S. G. Kalashnikov for his interest in the work.

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USSR

UDC: 621.396.6-181.5

YEFIMOV, V. G. and ZEMLYANOV, G. L.

"Method of Determining Geometrical Dimensions of Film Resistors Using Nomograms"

Elektron. tekhnika, Nauchno-tekhn. sb. Mikroelektronika (Electronic Engineering, Scientific-Technical Collection, Microelectronics) 1970, No. 2(23), pp 42-46 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3V348)

Translation: A nomogram is constructed which represents the width and length of resistors as functions of the resistance and dissipated power. A technique of computation using the nomogram is explained; the computation errors are estimated. One illustration, one table, bibliography of one.

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USSR

UDC: 632.954:631.911

ZEMLYANOV, V. N., Gor'kiy Experimental Station

"Effect of Various Doses of Simazine on Fruit Seedlings"

Moscow, Khimiya v Sel'skom Khozyaystve, no. 11, Nov 70, pp 47-48

Abstract: Experiments were set up at the first nursery plot (for graft plants) of the Gor'kiy Experimental Station to determine the optimum dose of simazine. The study covered the yearly botanical composition, quantity and weight of the weed and the condition of the fruit plants, including the growth intensity and the yield of the seedlings. Simazine was applied manually with an Automax sprayer covering both the soil and the plant. The experiments have shown that simazine applied in doses of 4-6 kg/ha caused the loss of 7.3 to 19.4% of the plants (the higher the dosage, the greater the percentage of loss). Despite this percentage of loss the average yield of

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ZEMLYANOV, V. N., Khimiya v Sel'skcm Khozyaystve, no 11, Nov 70, pp 47-48

the seedlings for a period of two years was higher than that in the control plot. Based on the experiments, the optimum simazine dose was established at 3.5-4 kg/ha of active ingredients with a norm of liquid of 800-1000 l/ha. To lower the adverse effect of the compound on fruit seedlings, it is suggested that simazine be applied at 2-2.5 kg/ha in the first and second nursery fields.

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USSR

ZEMLYANSKIY, A., SHURAKOV, V.

"Automatic Distribution of Memory in Data Processing Systems"

Elektronno-Vychisl. Tekhn. i Programmir. [Electronic Computer Equipment and Programming -- Collection of Works], No 5, Moscow, Statistika Press, 1972, pp 36-42 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V643, by the authors).

Translation: The version of automatic distribution of memory suggested is recommended for information processing systems using the Minsk-23 computer.

USSR

ZEMLYANSKIY, A. A.

"Some Problems of Generation of Computer Software"

Materialy Mezhevuz. Konf. po Mat. Obespecheniyu Avtomatizir. Sistem Upr. [Materials of Inter-University Conference on Control System Automation Software], Moscow, 1973, pp 231-238 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V671)

Translation: Problems of the generation of a compiler and operational system (OS) are studied, meaning generation of a version of the compiler or OS from the corresponding components of the basic compiler (BC) or basic OS. Generation can be performed in three modes: static, dynamic and mixed. The static mode of generation assumes generation of permissible version and their placement in the system carrier before operation of the system, i. e. before the moment when the task is to be performed using these versions. This mode places a priori limitations on the packet of assignments, since in each case, each assignment can be identified with an available (generated) version of the system. The static mode of generation of system versions, like all versions, requires single time flow. It is noted that if a sufficiently well-developed set of generated system versions is available, it is possible to run almost all jobs through the system.

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USSR

ZEMLYANSKIY, A. A.

"Software for Linguistic Information Processing Subsystem"

Materialy mezhvuz. konf. po mat. obespecheniyu avtomatizir. sistem upr. [Materials of Inter-University Conference on Control System Software -- Collection of Works], Moscow, 1973, pp 182-195 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8. V741 by V. Gushchin)

Translation: Problems of development of practical realization of algorithms for construction of word lists with expanded indicator spectra are studied. In addition to the traditional indicators (absolute and relative frequency), grammatical and syntactical-morphological word-form characteristics are introduced. A mathematical model of the problem studied is presented. Algorithms are given for production of frequency and rank words lists and a statification word list.

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USSR

ZEMLYANSKIY, B. A.

"Hypersonic Flow about Segmentally Conical Bodies under a Large Angle of Attack"

Moscow, Mekhanika Zhidkosti i Gaza, No 3, 1970, pp 33-39

Abstract: The stream in the vicinity of the windward plane beside the lateral surface of a blunt cone in a hypersonic flow of gas under a large angle of attack is investigated. It is assumed that the windward generatrix of the cone is inclined toward the flow at a small positive angle. On the basis of hypersonic theory, the problem is reduced to the study of a two-dimensional stream in the vicinity of an equivalent local blunted cone with a passage in a region which is external with respect to the passage. The obtained analogy permits calculation of the initial three-dimensional stream by means of numerical methods developed for two-dimensional problems. The results are found to compare favorably with numerical data on the three-dimensional flow of a perfect gas about segmentally conical bodies. Also presented are results dealing with the effect of physicochemical conversions of air (equilibrium and nonequilibrium) on the investigated streams. These results testify to the considerable effect of such conversions on the stream (including the pressure) in the vicinity of the windward plane of segmentally conical bodies. This fact must be taken into account in determination of the heat exchange and the ballistic characteristics of aircraft of this shape.

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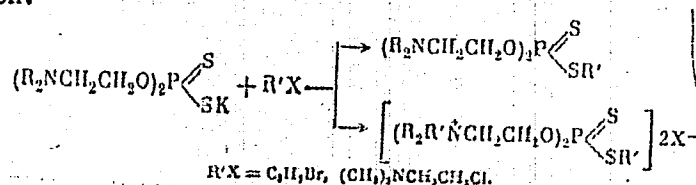
UDC 547.26'118

GUPALO, A. P. and ZENLYANSKIY, N. I., L'vov State University imeni Ivana Franko

"Amino Esters of Thiophosphoric Acids. Part V. Alkylation of the Potassium Salts of Amino Esters of Dithiophosphoric Acids by Alkyl Halides"

Leningrad, Zhurnal Obshchy khimii, Vol 42(104), Vyp 8, 1972, pp 1720-1724

Abstract: The potassium salts of O,O-di(tert-aminoalkyl)dithiophosphoric acids were reacted with alkyl chlorides and bromides under mild conditions in order to prepare neutral esters of dithiophosphoric acids, according to the following reaction:



The product was purified under vacuum and by chromatography. As the neutral amino ester is unstable, it undergoes thion-thiol isomerization. It goes

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GUPALO, A. P., and ZEMLYANSKIY, N. I., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 8, 1972, pp 1720-1724

through a stage in which an imnone salt is formed, which may be converted into the thiol isomer of the original ester or dimerized into the stable piperazine salt.

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USSR

UDC 547.26⁰118

ZEMLYANSKIY, N. I., BELOUS, G. F., MURAV'YEV, I. V., L'vov State University
Imeni I. Franko

"Concerning the Synthesis and Some Properties of Heterocyclic Tetrathio-
phosphates"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul 72, pp 1647-1648

Abstract: Phosphorus pentasulfide reacted with alkanedithiols in the presence of triethylamine to give triethylammonium salts of alkylene-tetra-thiophosphoric acids (I) in which the heteroring consists of methylene groups, sulfur atoms and phosphorus. Reaction of potassium alkoxide with compounds (I) gave the corresponding potassium salts. Alkylation of compounds (I) with alkyl halides or alkyl esters of benzenesulfonic acids produced neutral esters of cyclic tetrathio-phosphoric acids.

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USSR

UDC 547.1'118'122,621.892.009.6

GORDASH, YU. T., KHARCHENKO, I. S., RABINOVICH, I. L., BACHINSKIY, T. P.,
GUPALO, A. P., ZENLYANSKIY, N. I., KOTOVICH, B. P., and MURAV'YEV, I. V.,
All-Union Scientific Research and Project and Design Institute of the
Petroleum Conversion and Petrochemical Industry, Kiev

"Investigation of Sulfur-Containing Organophosphorus Compounds as Additives
to Lubricating Oils"

Moscow, Neftekhimiya, Vol 11, No 1, Jan-Feb 71, pp 135-140

Abstract: The effectiveness of derivatives of thiophosphoric acid as addi-
tives to lubricating oil was studied. Fifteen compounds of this type
including O,O-dialkyl-S-alkyl dithiophosphates, O-diethylaminoethyl-S,S-dipro-
pyl trithiophosphate, bis(O,O-diethyldithiophosphate)-benzylidene, bis(O-
methyl-O-butylthiophosphone)disulfide, O-alkyl-S,S-dialkyl trithiophosphates,
and S,S-tetraethyl tetrathiothiophosphate were synthesized for this purpose.
The formulas and characteristics of these compounds are listed in a table.
The effects of addition of the 15 compounds to oil DS-11 on the thermal
oxidation stability of the oil, the corrosion of Pb plates, the over-all
index of wear, the critical load of seizing, and the critical load of welding
were determined and compared with those of additive DF-11 (Zn butyloctyl-
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GORDASH, YU. T., et al., *Neftekhimiya*, Vol 11, No 1, Jan-Feb 71, pp 135-140

dithiophosphate). The results of the tests showed that use of trialkyl tetrathiophosphates, bis(O,O-dialkylthiophosphone)disulfides, and O-dialkyl-aminoalkyl-S,S-dialkyl trithiophosphates as multifunctional additives to lubricating oils would be of advantage. The effects of the CCl_3 group in reducing wear and seizing of friction surfaces were confirmed by the results of tests on dithiophosphates containing an $-\text{SC}(=\text{O})\text{CCl}_3$ group. The tests with O,O-difurfuryl-S-trichloroacetyl dithiophosphate indicated that this compound would be a good all-around additive for lubricating oils.

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USSR

UDC 547.26'118

ZEMLYANSKIY, N. I., and GORAK, R. D., L'vov State University imeni Ivan Franko

"Transesterification and Reaction With Hydrogen Chloride of 0,0'-Dialkyl Diselenophosphates"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,446-2,448

Abstract: This study is a continuation on the authors' earlier (1969) work on the reaction between 0,0'-dialkyl diselenophosphonic acids and the higher alcohols, which produces those same acids with various different radicals. Potassium 0,0'-dialkyl selenophosphates with mixed radicals were obtained, thus demonstrating the possibility of transesterification in those phosphates. The anhydrides of several 0,0'-dialkyl selenodiphosphonate esters, and also some bis(0,0'-dialkyldiselenophosphates) were obtained instead of the expected corresponding acids. Physical properties of these phosphates and acid anhydrides are given, along with laboratory procedures.

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