USSR

KONYUKHOV, V. K., MATROSOV, I. V., PROKHOROV, A. M., SHALUNOV, D. T., and SHIROKOV, N. N., Physics Institute [ment P. N. Lebedev, Academy of Sciences USSR

"Continuous Gasdynamic Laser With a Mixture of Carbon Dioxide, Nitrogen, and Water"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 12, No 10, 20 Nov 70, pp 461-464

Abstract: This article reports that in a supersonic wind tunnel to which a heated mixture of carbon dioxide and nitrogen with a small quantity of water was blown there was observed an amplification of infrared radiation, and after installation of an optical resonator in the working portion of the tunnel a generation effect was obtained. Studies of the amplification coefficient of a supersonic flow (M = 4-5) were made in a wind tunnel described previously by the authors, with the difference that the gas expanded in a wedge-shaped nozzle with an angle of opening of 13° and a length of the supersonic portion of 5 cm. The stagnation temperature was 1000°K, the stagnation pressure was 5 atm, and the dimensions of the critical cross section were 1.5 x 100 mm. The probing ray of a single-mode, single-frequency CO_2 laser was directed parallel to the greater dimension of the

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KONYUKHOV, V. K., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 12, No 10, 20 Nov 70, pp 461-464

critical cross section and intersected the gas flow at the point of emission from the nozzle. A study of the change in the absorption coefficient and the amplification of the signal of the CO_2 laser with time showed that absorption in the gas flow decreases to zero and then amplification appears. Introduction of water molecules causes accelerated relaxation of the CO_2 molecules from the lower laser level as the gas flows in the supersonic portion of the nozzle. The amplification coefficient was measured as a function of water content in the mixture. Measurement of the amplification coefficient in this gas mixture was made at a frequency of 947.73 cm^{-1} and showed that inversion in the supersonic flow exists for the pair of levels (00°1)-(10°0) but the amplification coefficient amounts to $6 \cdot 10^{-4}$ cm^{-1} for a water concentration of 2.1%.

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USSR UDC: 621.375.826:625

BOGDANOV, V. V., BRYKOV, V. G., MATROSOV, V. I., MOCHALOV, A. V., NYRKOV, D. K., SAYDOV, P. I., SHCHERBAKOV, Yu. A.

"Fundamental Problems in Developing a Laser Gyroscope"

Izv. Leningr. elektrotekhn. in-ta (News of Leningrad Electrical Engineering Institute), 1972, vyp. 101, pp 69-74 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D499 [résumé])

Translation: The principal physical relations which define the working characteristic of a gyroscope are examined. Technical requirements are formulated for the elements and parts of a laser gyroscope as implied by these physical relations. The results of an investigation of the zone of capture of the instrument are presented as well as one of the methods of reducing the threshold sensitivity -- Zeeman effect. Bibliography of 3 titles.

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USSR UDC 547.241

MASTRYUKOVA, T. A., SUYERBAYEV, Kh. A., MATROSOV, Ye. I., PETROVSKIY, P. V., and KABACHNIK, M. I., Institute of Metal Organic Compounds, Academy of Sciences USSR

"Acidity and Tautomerism of β-Ketophosphonium Salts. Salts of 3,3,5,5-Tetraphenyl-3,5-diphosphacyclohexenone"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2613-2619

Abstract: Deprotonation of the salts of 3,3,5,5-tetraphenyl-3,5-diphosphonia-cyclohexanone leading to the formation of respective 3,5-diphosphacyclohexenone salts was studied. On the basis of IR and NMR spectral analysis it was shown that in crystalline state the monochloride of 3,3,5,5-tetraphenyl-3,5-diphos-phacyclohexenone contains an acylphosphinemethylene system of bonds. Tetra-phenyl borate however shows a phosphoniamethylenephosphorane system with a ketone group. In solutions a prototropic tautomerism is observed of the type $CH_2-P:CH \rightleftarrows CH:P-CH_2$ which is similar to the tricarbon tautomerism.

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USSR UDC 547.26'118

MATROSOV, Ye. I., IOFFE, S. T., and KABACHNIK, M. I., Institute of Metal ~~Organic Compounds~~, Academy of Sciences USSR

"IR Spectra and Hydrogen Bonding in Substituted Esters of Formylmethylphosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii Vol 42 (104), No 12, Dec 72, pp 2625-2630

Abstract: Substituted esters of formylmethylphosphonic acids are excellent subjects for the study of hydrogen bonding since they enolize forming compounds with a hydroxymethylene group capable of intra- and intermolecular H-bonding. IR spectra of esters of the type $(EtO)_2P(O)CH(CHO)R$, where R = Cl, Br, Ph or CN have been investigated in solid state and in several solutions with varying concentration of the substrate. In the solid state all are in trans-enolic form with strong intermolecular hydrogen bonding, as reflected by intensive infrared absorption bands at 2700 and 3050-2950 cm^{-1}. In solution an equilibrium exists of all of the tautomatic forms: aldo-, trans-, and cis-enolic forms. The equilibrium shifts, depending on the solvent, on the degree of dilution and on the type of substituent. No absorption maxima were observed indicating the presence of free OH groups.

UDC 547.558.1

USSR

MASTRYUKOVA, T. A., ALADZHEVA, I. M., MATROSOV, YE. I., MARACHNIK, M. I., Institute of Organoelemental Compounds, Academy of Sciences of the USSR

"Acidity and Tautomerism of β-Ketophosphonium Salts. Synthesis and Acid-Base Properties of Triphenyl(Diacylmethyl)phosphonium Salts"

Leningrad, Zhurnal Obshchoy Khimii, Vol 42(104), No 7, Jul 72, pp 1470-1473

Abstract: Diacylphosphinomethylenes (I) and the corresponding phosphonium salts (II) were synthesized, and their acid-base properties were studied. Compounds (I) have been previously described, and the first representative of (II) was reported in Zhurnal Obshchey Khimii in 1971 (Vol 41, p 2336), triphenyl(acetylbenzoylmethyl)-phosphonium chloride. Low members of the series were synthesized by reacting hydrogen halides or trifluoromethanesulfonic acid with the corresponding phosphinomethylenes (I). The resultant salts are completely stable with the exception of triphenyl(diacetylmethyl)phosphonium chloride. The acid-base properties of the compounds were studied by a potentiometric method in water-ethanol solutions and in nitromethane. It was found that phosphinomethylenes are weak bases, and the corresponding phosphonium salts are fairly strong acids.

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UDC 547.241:541.45

USSR

KOVTUN, V. Yu., GILYAROV, V. A., KOROLEV, B. A., MATROSOV, Ya. I., and KABACHNIK, M. I., Institute of Organometallic Compounds, Acad. Sc. USSR and Scientific Research Institute of Intermediates and Dyes

"Basicity and Nucleophilicity of Some Methylenediphosphinediimines"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 772-778

Abstract: A series of substituted tetraphenylmethylenediphosphinedi-(N-phenylimines) was obtained from tetraphenylmethylenediphosphine by treatment with two moles of substituted phenylazides and converted to monomethiodides by refluxing them in benzene in presence of methyl iodide. Equimolar quantities of tetraphenylmethylenediphosphine react with benzyl or p-nitrobenzyl bromide in benzene to give the corresponding benzylphosphonium salts which upon reaction with phenylazides yielded diphenylbenzyl(or p-nitrobenzyl) [diphenyl(N-phenylimino)phosphinylmethyl(or phosphonylmethyl)]phosphonium bromides. The pK_a values were determined in nitromethane for all the compounds obtained. It was determined that the basicity of the nitrogen atom in these compounds depends on the nature of substituents in the phenyl ring bound to the imine nitrogen atom. Hammet's equation applies to these compounds.

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UDC 547.241

USSR

MASTRYUKOVA, T. A., SUYERBAYEV, KH. A., PETROVSKIY, P. V., MATROSOV, YE. I., Academician KABACHNIK, M. I.

"Acidity and Tautomerism of Some β-Ketophosphonium Salts"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 2, 1972, pp 354-357

Abstract: A study of diphenylphosphinyl-substituted β-ketophosphonium salts of the following structure:

$$\left[(C_6H_5)_2\overset{+}{P}(CH_2) - CH_2 - \underset{\underset{O}{\|}}{C} - CH_2 - \underset{\underset{O}{\|}}{P}(C_6H_5)_2\right] X^-,$$

where $X = Cl^-$, ClO_4^-, BF_4^-, BPh_4^- and CF_3COO^- are anions was made to consider the problem of whether introduction of radicals increasing the CH-acidity but capable of the formation of hydrogen bonds with OH-radicals of enol forms into a molecule of acylphosphonium salt must lead to enolization. Paramagnetic resonance spectra and intrared spectra of the investigated salts are presented and analyzed. In contrast to simple β-ketophosphonium salts, their

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MASTRYUKOVA, T. A., et al., Doklady Akademii Nauk SSSR, Vol 202, No 2, 1972, pp 354-357

diphenylphosphinyl-substituted derivatives are capable of enolization in solutions. This property cannot be explained only by the increase in CH-acidity as a result of introducing the diphenylphosphinyl radical. The cause of the enolizability lies in stabilization of the enol form under the effect of the diphenylphosphinyl group. In the case of complex anions enolization does not occur. Thus, for enolization both the P(O)-radical and CF_3COO^- or Cl^- anions must be present.

2/2

UDC 541.18.04:547.1'118

USSR

MATROSOV, YE. I., KULUMBETOVA, K. ZH., AKKHIPOVA, L. I., MEDVED', TA. YA., and KABACHNIK, M. I., Institute of Hetero-Organic Compounds, USSR Academy of Sciences

"Acid-Base Properties of Substituted Tetraphenyl-Methylene-Diphosphine Dioxides"

Moscow, Izvestiya Akad. Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 72, pp 199-201

Abstract: Potentiometric titration with perchloric acid of the dioxides of tetraphenylmethylenediphosphines substituted in the methilene bridge was carried out in nitromethane. The obtained values of the alkalinity constant pK_a (CH_3NO_2) were found to be linearly related to the σ^*-constants of the substitutes.

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USSR

UDC 543.422.4:547.1'118

MATROSOV, YE. I., BARANOV, G. M., PEREKALIN, V. V., KABACHNIK, M. I., and MASTRYUKOVA, T. A., Institute of Heteroorganic Compounds, Academy of Sciences USSR, and Leningrad State Pedagogical Institute imeni A. I. Gertsen

"IR Spectra and Hydrogen Bonds in Some Organophosphorus Derivatives of Nitro Alcohols"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, Nov 71, pp 2572-2575

Abstract: The article describes results of a spectral study of organophosphorus derivatives of nitro alcohols -- 0,0-dialkyl- α -hydroxy- β -nitroalkyl phosphonates of the type: $(RO)_2P(O)-C(OH)CH_3-CHR'NO_2$; R=$C_2H_5$ (I), i-C_3H_7 (II); R'-H (a), CH_3 (b), C_6H_5 (c). The results indicate the formation in the solid state of intermolecular H bonds formed by OH and P=O groups. There is equilibrium of free and associated molecules in solutions of the phosphonates.

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UDC 543.42+541.6:661.718.1

USSR

MATROSOV, Ye. I., GILYAROV, V. A., KOVTUN, V. Yu., and KABACHNIK, M. I., Institute of Heteroorganic Compounds, Academy of Sciences USSR

"Spectra and Structure of Salts of Triphenylphosphine-N-phenylimine and Its Complexes with Phenols"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 71, pp 1162-1168

Abstract: The authors studied IR spectra of halomethylates and the hydrobromide of triphenylphosphine-N-phenylimine and its complexes with phenol, p-bromophenol and pentachlorophenol. On the basis of the resultant spectral data the structure of phosphinimine salts can be characterized as mesomeric with a pronounced phosphonium structure. The interaction of phosphinimine with phenol and p-bromophenol gives complexes with a hydrogen bond of the composition 1:1, isolated in crystalline form. Spectral data on the pentachlorophenol-phosphinimine complex indicate a strong acid-base interaction which apparently results in protonation of the phosphinimine molecule.

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USSR

UDC 543.422.4:661.718.1

MATROSOV, YE. I., MEDVED', T. YA., and KARACHNIK, M. I., Institute of Element-Organic Compounds, Academy of Sciences USSR

"Infrared Spectra of Substituted Tetraphenylmethylenediphosphine Dioxides"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, 1971, pp 1094-1096

Abstract: Infrared spectra of the dioxides of tetraphenylmethylenediphosphine substituted in the methylene brid e $[Ph_2P(O)]_2CHR$ revealed interesting behavior of the bands corresponding to the absorption of the P=O and C-H groups. Evidently, in the compounds investigated the maltiplet status of the vibrational bands of the P=O groups is due mainly to their participation in intermolecular hydrogen bonding with the hydrogen atoms of the methylene bridge of the neighboring molecule. Thus, the ability of C-H bridging groups in methylene dioxides to form hydrogen bonds was discovered. This is in close agreement with the lability of the hydrogen atom in these groups in presence of organic bases. Capability of forming hydrogen bonds is shown by methylene groups of the oxide of diphenylphenacylphosphine $PH_2P(O)CH_2C(O)Ph$ in whose spectra intense vibrational bands of the C-H groups were detected at 2920 and 2800 cm^{-1}.

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UDC 541.454 : 54o : 185

USSR

GENKINA, G. K., GILYAROV, V. A., MATROSOV, YE. I., and KABACHNIK, M. I., Institute of Organoelemental Compounds, Academy of Sciences USSR

"Study of Imide-Amide Rearrangement of Some Phosphorus Acid Imides Under the Action of Alkyl Halides"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 7, Jul 70, pp 1496-1501

Abstract: The authors made a kinetic study of the imide-amide rearrangement of imides of phosphorus acids under the action of ethyl iodide in acetonitrile at 50° and its dependence on the character of the substituents at the phosphorus atom. It was found that the rearrangement rate strongly depends on the substituents. There is a linear correlation between the logarithms of the rearrangement rate constants and $\Sigma \sigma_p$ of the substituents at the phosphorus atom.

Some imides of phosphorus acids of the general type $AB(C_2H_5O)P{=}NC_6H_5$

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USSR

GENKINA, G. K., et al., Zhurnal Obshchey Khimii, Vol 40, No 7, Jul 70, pp 1490-1501

and amides of phosphorus atoms of the general type $ABP(O)N(C_2H_5)C_6H_5$ were synthesized. Chromatographic analysis was performed by S. M. CHESNOKOVA and IR spectra taken by B. S. CHIKIL'DIN and N. I. VOLKOVA.

2/2

USSR UDC: 621.385.6

KAMINSKIY, F. D., KASHIRIN, A. P., LELIOVSKIY, A. F., MATROSOV, Ye. I., RYABININ, V. A., TERRA, K. R.

"An Electronic SHF Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, 1970, Soviet Patent No 270093, Class 21, field 17 Jul 67, pp 215-216

Abstract: This Author's Certificate introduces: 1. An electronic SHF device (such as a triode) containing an electron-optical system which is part of the vacuum input and half-wave short-circuited output (anode) resonators and which is made in the form of individual cells, each consisting of a cathode and grid operating into a common anode. As a distinguishing feature of the patent, the reliability is improved and the output power of the device is increased by making vacuum-tight coupling apertures for energy output in one of the walls of the output resonator located at a high-frequency voltage node symmetric with the axis of the device. 2. A modification of this device in which the distinguishing feature is that control of the width of the frequency passband is provided by installing a rotating disc at the energy output point on the axis of the device with apertures identical in size and shape to the coupling apertures, and in the same position relative to the axis of the device.

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USSR

UDC 547.26'118

NIFANT'YEV, E. Ye., BORISENKO, A. A., NASONOVSKIY, I. S., and MATROSOV, Ye. I., Moscow State University imeni M. V. Lomonsov

"Stereochemistry of 1,3-Butylenephosphites"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 1, Jan-Feb 71, pp 121-123

Abstract: Stereochemical relationships between the isomers of 1,3-butylenephosphite were studied. One isomer -- the more stable -- was obtained by reacting 27.5 g dimethylphosphite, 22.5 g 1,3-butandiol and a small piece of sodium at 130°. When methanol stopped evolving, the product consisting of two isomers, was distilled at 110-130° in a 10^{-3} mm vacuum. After standing this material crystallized with a m.p. 52-52.5°. The labile isomer was obtained by reacting 16.4 g of the dimethylamide of 1,3-butylenephosphorous acid with acetic acid in absolute ether at 35°. Distillation of the material obtained gives a product with b.p. 97-97.5°/1 mm, n_D^{20} 1.4550, d_4^{20} 1.2600. The stable isomer is less soluble in organic solvents and has a lower R_f in thin layer chromatography on alumina. This more stable isomer is evidently associated to a larger extent than the labile material. Conversion of the

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USSR

NIFANT'YEV, E. Ye., et al, Doklady Akademii Nauk SSR, Vol 196, No 1, Jan-Feb 71, pp 121-123

labile isomer to the stable one is not a phenomenon of boat-chair interconversions; these isomers differ by the orientation of their substituents in relationship to the chair skeleton.

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UDC: 547.26'118

USSR

MATROSOV, Ye. I., TSVETKOV, Ye. N., LOBANOV, D. I., MALEVANNAYA, R. A., KABACHNIK, M. I., Institute of Organoelemental Compounds, Academy of Sciences of the USSR

"Association of Substituted Phosphinylbenzoic and Phosphinyl-p-toluic Acids According to the Data of Infrared Spectra"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun '72, pp 1218-1223

Abstract: IR-spectroscopy was used to study the nature of association in carboxylic acids containing the phosphoryl group. The study specimens were chiefly certain phosphinylbenzoic $R_2P(O)C_6H_4COOH$ and α-phosphinyltoluic $R_2P(O)CH_2C_6H_4COOH$ acids with various substituents at the phosphorus atom. It was shown that in the crystalline state association takes place principally through the formation of strong intermolecular H bonds with participation of the phosphoryl groups. A reduction in the basicity of the phosphorus substituent in the case of diphenylthiophosphinyl-substituted acids leads to dimerization on the carboxylic acid pattern. In chloroform, the polymer associates formed through the participation of phosphoryl groups in the H bonds are destroyed, and dimer association becomes a predominant type. In proton-acceptor solvents (tetrahydrofuran, acetonitrile), molecules of free acids bound to the solvent by H bonds are observed in addition to the polymer associates.

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USSR

UDC 661.718.1:541.133

KABACHNIK, M. I., MATROSOV, Ye. I., MEDVED', T. Ya., PISAREVA, S. A., and ROMANOVA, I. B.; Institute of Organoelemental Compounds, Academy of Sciences USSR, Moscow

"Acid-Base Properties of Tetraalkyl(Aryl)alkylenediphosphine Dioxides"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 8, No 3, 1972, pp 361-365

Abstract: Potentiometric titration was carried out with perchloric acid in nitromethane of three series of alkylene-diphosphine dioxides with different numbers of methylene links in a bridge of a general formula $R_2P(O)-(CH_2)_n-P(O)R_2$ (where: n = 1-4, R = C_6H_5, C_4H_9, C_2H_5). Protonation proceeds in all cases through a stage of ring formation with an intramolecular hydrogen bond and participation of the both phosphoryl groups. On the curves of potentiometric titration of the phosphine dioxides with propylene and butylene bridges (n = 3, 4) there appears in the acidic region the second potential jump, which, apparently, corresponds to a process connected with ring cleavage and protonation of the second phosphoryl group. The values of pKa (CH_3NO_2) of the second stages substantially differ from the first ones. In this respect the investigated phosphine dioxides exhibit a definite similarity to the

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KABACHNIK, M. I., et al., Teoreticheskaya i Eksperimental'naya Khimiya, Vol 8, No 3, 1972, pp 361-365

behavior of dibasic carboxylic acids in which the formation in monoanions of intramolecular hydrogen bonds leads to a considerable difference of K_1 and K_2.

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USSR

UDC 547.241

MASTRYUKOVA, T. A., SUYERBAYEV, Kh. A., PETROVSKIY, P. V., MATROSOV, Ye. I., and KABACHNIK, M. I., Institute of Metal Organic Compounds, Acad. Sc., USSR

"Acidity and Tautomerism of β-Ketophosphonium Salts of 3,3,5,5-Tetraphenyl-3,5-diphosphoniumcyclohexanone"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2620-2625

Abstract: Synthetic methods have been developed for 3,3,5,5-tetraphenyl-3,5-disphosphoniumcyclohexanone (I) salts. Solutions of 1.52 g tetraphenylmethylenediphosphine and 0.86 g symm-dibromoacetone in 30 ml tetrahydrofuran were slowly added to 90 ml of boiling THF with stirring. A finely crystalline material was obtained and reprecipitated from hexane-ethanol to yield the dibromide of (I), m.p. 230-255°C. To obtain the dichloride of (I), m.p. 264-266, 4.69 g of symm-dichloroacetone in 150 ml acetonitrile was added to 14.19 g tetraphenylmethylenediphosphine in 950 ml acetonitrile, refluxed for 1.5 hr and cooled to precipitate the product. Sodium tetraphenylborate in absolute ethanol added to the dibromide of (I) in absolute ethanol at room temperature with stirring yields the tetraphenylborate of (I), m.p. 182-185°C. To obtain the diperchlorate of (I),

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MASTRYUKOVA, T. A., et al., Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2620-2625

m.p. 202-204°C, an aqueous solution of sodium perchlorate was added to an aqueous solution of the dichloride of (I). The salts obtained have an enolic structure in the crystalline state; in solutions an enol-ketone equilibrium is established.

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USSR

UDC 547.241

MATROSOV, YE. I., TSVETKOV, YE. N., MALEVANNAYA, R. A., and KABACHNIK, M. I., Institute of Element Organic Compounds, Academy of Sciences USSR

"Infrared Spectra and the Association of Phosphinylacetic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 8, 1972, pp 1695-1700

Abstract: Acids of the type $\begin{matrix} A \\ B \end{matrix}\!\!>\!P\text{-}CH_2COOH$ -- for the compounds A = B = Bu, Ph, p-$CH_3C_6H_4$, p-ClC_6H_4, EtO, and PhO; A=Ph, B=Et; A=iSO Bu, A=Ph; A=EtO, B=Ph and A=OCH_3, B=Ph -- were studied. Ir spectra were taken, using solid KBR pellets to examine the following types of associations which normally occur in solution:

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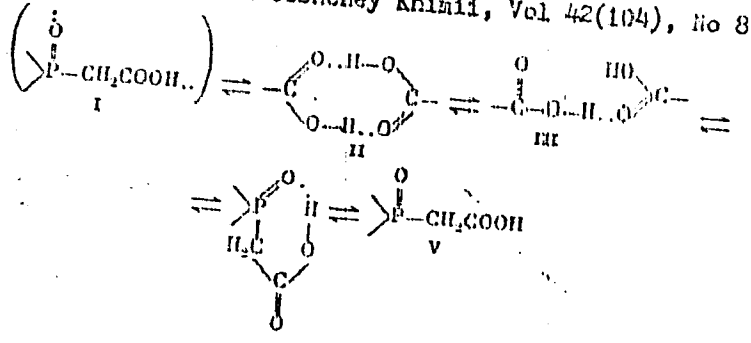
MATROSOV, YE. I., et al., Zhurnal Obshchey Khimii, Vol 42(104), No 8, 1972, pp 1695-1700



In solution the dominant form depends on the groups attached to the P atom and on the solvent. In proton-acceptor solvents, the acid forms H bonds with the solvent. Forms (II) and (V) predominate in inert solvents. In the solids the acids associate due to the formation of intermolecular hydrogen bonds involving parts of the phosphoryl group.

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USSR

UDC 547.241 + 547.62 + 547.442

MASTRYUKOVA, T. A., ALADZHEVA, I. M., PETROVSKIY, P. V., MATROSOV, YE. I., and KABACHNIK, M. I., Institute of Organometallic Compounds

"Acidity and Tautomerism of beta-Ketophosphonium Salts. Tautomerism of Triphenyl(diacylmethyl)phosphonium Salts"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 991-997

Abstract: According to the IR- and NMR-Spectroscopic data the salts of triphenyl(acetylbenzoylmethyl)-, triphenyl(acetylcarboethoxymethyl) and triphenyl(diacetylmethyl)phosphonium exist in the enole form; they are in the trans-enolic orientation with the protons of the hydroxyl groups being involved in intermolecular hydrogen bonding with the anions or the oxygen of the carbonyl groups. Triphenyl(dicarboethoxymethyl)phosphonium chloride exists in the dicarbonyl form.

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USSR

UDC 547.558.1

MASTRYUKOVA, T. A., SUYERBAYEV, KH. A., FEDIN, E. I., PETROVSKIY, P. V., MATROSOV, YE. I., and KABACHNIK, M. I., Institute of Metal Organic Compounds, Acad. Sc. USSR

"Diphosphacyclohexadienone"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, p 1195

Abstract: 3,3,5,5-Tetraphenyl-3,5-diphosphacyclohexadienone, m.p. 168.5-169°, was synthesized by the reaction of 3,3,5,5-tetraphenyl-3,5-diphosphonacyclohexanone with triethylamine. On the basis of IR and NMR 31P data it appeared that the new compound exists as diphosphacyclodienone substituted at the phosphorus atom; there were no indications of the existence of diphosphaphenolic structure.

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1/2 036 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--THERMALLY IMPROVED STEEL 17G2SF FOR GAS PIPELINE PIPES OF LARGE DIAMETER -U-

AUTHOR--LEYKIN, I.M., LITVINENKO, D.A., MATROSOV, YU.I., SITNOVA, N.V.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2) 9-12

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALLOY DESIGNATION, LOW ALLOY STEEL, STEEL PIPE, SHEET METAL, IMPACT STRENGTH, METAL CRACKING, CRACK PROPAGATION, METAL AGING, STRAIN/(U)17G2SF LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1309 STEP NO--UR/0129/70/000/002/0009/0012

CIRC ACCESSION NO--AP0106086

UNCLASSIFIED

2/2 036 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106086

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMPROVED SHEET STEEL 17G2SF, FOLLOWING ANNEAL AT 500-50DEGREES, RESULTS IN LIMITS OF STRENGTH UP TO 80 KG-MM PRIME2, YIELD 65-70 KG-MM PRIME2 WITH HIGH PLASTICITY, IMPACT STRENGTH ALPHA SUBN PRIME NEGATIVE40 LARGER THAN OR EQUAL TO 10 KG,M-CM PRIME2, ALPHA SUBN PRIME NEGATIVE80 LARGER THAN OR EQUAL TO 9 KG,M-CM PRIME2, AND CRACK DEVELOPMENT FUNCTION SIMILAR TO 2.5 KG,M-CM PRIME2. RAISING THE ANNEALING TEMP. TO 600-30DEGREES INCREASES THE CRACK GROWTH FUNCTION FROM 3.5 KG,M-CM PRIME2 AND PRESERVES THE LIMITS OF STRENGTH LARGER THAN 70 KG-MM PRIME2. STEEL 17G2SF, IN THE THERMALLY IMPROVED CONDITION, HAS LITTLE SUSCEPTIBILITY TO STRAIN AGING. STEEL 17G2SF IS RECOMMENDED FOR THE PRODUCTION OF THERMALLY STRONG PIPES WITH A BREAKING POINT OF 70 KG-MM PRIME2 FOR USE AS GAS LINES IN NORTHERN REGIONS AS WELL AS A QUALITY HIGH STRENGTH STEEL WITH YIELD OF LARGER THAN 50-60 KG-MM PRIME2 FOR USE IN METAL CONSTRUCTION.

UNCLASSIFIED

USSR

UDC 577.4

MATROSOVA, A. YA.

"Constructing Inspection Tests for Cascade Circuits"

V sb. Tekhn. diagnostika (Technical Diagnostics -- collection of works), Moscow, Nauka Press, 1972, pp 161-164 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V427)

No abstract

1/1

USSR

UDC: 51:330.115

IVANOV, V. V., MATRYASHYN, M. P., MOTORNYY, L. T.

"On a Procedure for Setting up a Production Program for Enterprises With Small-Series or One-of-a-Kind Production"

Visnyk Kharkiv. un-tu (Khar'kov University Herald), 1971, No 61, Ekonomika (Economics), vyp. 6, pp 26-37 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V532)

Translation: A whole-number programming problem is set up. As a method of solution, the authors propose that the linearized problem be solved with subsequent rounding-off.

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USSR

UDC 519.24

MALITSKIY, A. A., MATS, A. D., and RASKIN, L. G. (Khar'kov)

"On Selection of Measurements Times in a Problem of Parameters Evaluation"

Novosibirsk, Avtometriya No 3, May-Jun 72, pp 36-41

Abstract: The problem of evaluating the a_0 and a_1 parameters of a signal $s(t)=a_0+a_1t+\xi(t)$ measured at times $t_1,\ldots,t_n$ is considered assuming that $\xi(t)$ is the measurement error and that measurements taken at different times are independent, while the error is distributed according to normal law $N(o,\sigma(t))$ where $\sigma(t)$ is the known time function. A system of equations is derived the solutions of which determine the optimal distribution of measurement times, under condition that a nonstationary Gauss interference is superposed additionally on the results of measurements. An exhaustive solution of the problem is obtained for the case of equally accurate measurements. The cases of small and large α are considered at the exponential variation of interference distribution ($\sigma(t) = \sigma_0 e^{\alpha t}$, $\alpha>0$).

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USSR

UDC 615.373.612.112].015.4:612.014.3-085.2

PROTASOVA, O. V., PEREPECHKINA, N. P., and MATS, A. N., Institute of Vaccines and Sera imeni Mechnikov

"The Action of Antileukocyte Sera on Heterogeneous Cell Populations"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971, pp 132-136

Abstract: Suspensions of mouse spleen cells were drawn into capillary tubes, these were placed in nutrient media without serum (control) and with antileukocyte sera obtained from rabbits and, 24 hrs later, the extent of migration of the cells through the medium was determined. Approximately similar inhibition of migration was induced by sera specific to thymocytes, lymphocytes, and macrophages, while sera containing antibodies to myeloid cells inhibited the migration of the spleen cells to the greatest degree. Since administration of antimyeloid serum to mice receiving skin grafts did not prolong the survival of the grafts, it is concluded that the beneficial effects exerted by antileukocyte sera on transplants are due to the action of antilymphocyte, antithymocyte, and antimacrophage antibodies present in those sera.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010004-0"

Acc. Nr: AP0044473 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code: NE0000

70980e Investigation of germanium surface properties under successive adsorption of gold and silver. Matsas, M. P.; Dyner, L. L.; Primachenko, V. E.; Snitko, O. V. (Inst. Semicond., Kiev, USSR). *Surface Sci.* 1970, 19(1), 109–10 (Eng). Field effect and surface recombination velocity have been studied on real Ge surfaces under adsorption of Au and Ag from aq. solns. Adsorption of Au changes the properties of the Ge surface radically. The effect of Ag deposition was insignificant. The most essential result of the work is that subsequent adsorption of Ag on a Au-covered Ge surface leads to the neutralization of the peculiar properties caused by Au itself. The absence of mutual influence of Ag and Au on the magnitudes of adsorption was established by the radioactive method. RCBD

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REEL/FRAME 19771096

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1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--FACTOR ANALYSIS OF THE MECHANICAL CHARACTERISTICS OF STEELS -U-

AUTHOR-(02)-MATSEGORIN, I.V., RUMYANTSEV, V.P.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB., 1970, 26, (1), 55-60

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MEASUREMENT, STEEL PROPERTY, IMPACT STRENGTH, HARDNESS, DUCTILITY, ELONGATION, YOUNG MODULUS, TENSILE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0244 STEP NO--UR/0032/70/026/001/0055/0060

CIRC ACCESSION NO--AP0124006

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124006

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE QUESTION OF IMPROVING THE EFFICIENCY OF EXPERIMENTS DESIGNED TO DETERMINED THE PHYSICAL AND MECHANICAL PROPERTIES OF STEELS AND OTHER METALS BY MEASURING A RESTRICTED NUMBER OF COMPOSITE PARAMETERS CONTG. THE SAME INFORMATION AS THAT CONTAINED BY THE WIDE SET OF PARAMETERS CONVENTIONALLY MEASURED IS DISCUSSED. THUS, FOR EXAMPLE, THE SIX MECHANICAL PARAMETERS OF STEEL USUALLY MEASURED (UTS, YS, HARDNESS, IMPACT STRENGTH, RELATIVE ELONGATION, RELATIVE TRANSVERSE CONTRACTION) MAY BE REDUCED TO TWO 'EFFECTIVE' STRENGTH AND DUCTILITY CHARACTERISTICS. THE EFFECT OF THIS IS THAT ALL THE REQUIRED INFORMATION MAY BE SECURED BY MEASURING TWO PARAMETERS ONLY.

UNCLASSIFIED

USSR UDC: 551.596:534.143

SHEV'YEV, Yu. P., MATSEVICH, E. V., PUGACHEV, A. D.

"Using the Method of Electroacoustic Analogies in Measuring the Accustic Transparency of Material Specimens"

Tr. Taganrog. radiotekhn. in-ta (Works of Taganrog Radio Engineering Institute), 1973, vyp. 34, pp 180-184 (from RZh-Fizika, No 5, May 73, abstract No 5Zh631 by Ye. B. Kudashev)

Translation: A new method is proposed for measuring the coefficient of acoustic transparency of material specimens and structural elements in water on an installation of the "shock tube" type. The direct system of electroacoustic analogies is considered, enabling representation of the specimen as a two-terminal pair network. It is shown that the voltage ratio at the input and output of the network determines the acoustic transparency of a specimen characterized in the logarithmic scale by the difference in levels of the acoustic pressure measured in a hydroacoustic tube behind and in front of the specimen. A relation is derived for calculating the coefficient of acoustic transparency from the input impedances of the investigated specimen in the open-circuit and short-circuit modes. The

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USSR

SHEV'YEV, Yu. P. et al., Tr. Taganrog. radiotekhn. in-ta, 1973, vyp. 34, pp 180-184

paper gives the results of measurement of the variation, with frequency, of acoustic transparency of metal plates 1.4 and 0.4 cm thick. Some discrepancy between the experimental and theoretical results is attributed to the error in phase measurements. It is shown that the experimentally determined values of input impedances may also be used for calculating the modulus of normal elasticity and the density of experimental specimens of new sound-absorbing materials. The proposed method holds promise for studying the acoustic transparency of materials and structural elements at high hydrostatic pressures.

2/2

USSR UDC 616.912-085.371-039.71-06:616.831-002

MARENNIKOVA, S. S., and MATSEVICH, G. R., Moscow Institute of Viral Preparations

"Neurological Complications After Smallpox Vaccination"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 3-7

Abstract: Neurological complications, chiefly encephalitis, occur in approximately one child per 1,500,000 vaccinated: one complication per 250,000 vaccinated once and one per 10,000,000 revaccinated. In children under 1 it occurs in one case per 325,000 children after the first vaccination, increasing in children over 1 to one case per 100,000 vaccinated. The greater frequency of neurological complications among those vaccinated once compared with the revaccinated (40 times) and the threefold increase among those over 1 indicates that the vaccinal status and age when the initial vaccination is made are the most important factors in the frequency with which cerebral complications occur. Data from foreign sources show that the frequency of neurological complications in the USSR is considerably lower than in most Western European countries. Vaccines made from highly reactive strains produce the most complications. The course of the disease is particularly

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010004-0"

USSR

MARENNIKOVA, S. S., and MATSEVICH, G. R., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 3-7

severe and the death rate very high (50%) when the children are vaccinated despite contraindications. The complications are much milder and the death rate lower (about 22%) in revaccinated children.

2/2

USSR

UDC 615.371:576.858.13

MATSEVICH, G. R., and SVET-MOLDAVSKAYA, I. A., Moscow Scientific Institute of Virus Preparations

"Smallpox Vaccine Inactivated With Gamma-Rays, and Its Antigenic and Immunogenic Properties"

Moscow, Voprosy Virusologii, No 3, May/Jun 70, pp 316-322

Abstract: To prevent infrequent but rather serious postvaccinal complications vaccin virus was inactivated with heat, phenol, alcohol. But inactivation by these methods was of little value: it lowered the antigenic and immunogenic properties of the vaccine. Even inactivation of vaccinal virus with formalin, the commonly used method, lowers the efficiency of the vaccine.

Vaccinal virus was inactivated with gamma-rays in various strengths. Irradiation with 1.75 Mrad was best when inactivated specimens were compared with live vaccine in animal experiments, the antigenic and immunogenic properties were found to be well preserved; the virus was inactivated, and the toxic properties of the vaccine reduced.

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1/2 033 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SMALLPOX VACCINE INACTIVATED WITH GAMMA RAYS, ITS ANTIGENIC AND IMMUNOGENIC PROPERTIES -U-

AUTHOR-(02)-MATSEVICH, G.R., SVETMOLDAVSKAYA, I.A.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 3, PP 316-322

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SMALLPOX, VACCINE, GAMMA RADIATION, RADIATION EFFECT, COBALT ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1846 STEP NO--UR/0402/70/000/003/0316/0322

CIRC ACCESSION NO--AP0125457

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010004-0"

2/2 033 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125457

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILTIY OF PREPARING CO PRIME06 GAMMA RAYS INACTIVATED LYOPHILIZED STERILLE SMALLPOX VACCINE WITH SUFFICIENTLY HIGH ANTIGENIC AND IMMUNOGENIC PHOPERTIES. THE PREPARATION IRRADIATED WITH A MINIMAL INACTIVATING DOSE OF GAMMA RAYS POSSESSES OPTIMAL PROPERTIES. FACILITY: NOSKOVSKIY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT VIRUSNYKH PREPARATOV.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--A METHOD FOR DETERMINATION OF SMALLPOX VACCINE IMMUNOGENICITY IN WHITE MICE -U-

AUTHOR-(03)-CHIMISHKYAN, K.L., SVETNOLDAVSKAYA, I.A., MATSEVICH, G.R.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 2, PP 244-246

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SMALLPOX, VACCINE, WHITE MOUSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0742 STEP NO--UR/0402/70/000/002/0244/0246

CIRC ACCESSION NO--AP0108948

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0108948

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS THE RESULTS OF USING THE SO CALLED "VACCINATION DISEASE" IN IRRADIATED WHITE MICE FOR DETERMINATION OF IMMUNOGENICITY OF SMALLPOX VACCINES. BY THIS METHOD, DIFFERENCES IN IMMUNOGENICITY OF VACCINES PREPARED FROM DIFFERENT STRAINS COULD BE DETECTED. THE METHOD MAY BE USED AS AN ADDITIONAL CRITERION FOR EVALUATION OF IMMUNOGENICITY OF SMALLPOX VACCINE.

UNCLASSIFIED

USSR UDC 613.68(98)

SERGEYEV, Ye. P., MATSEVICH, L. M., and REZINA, Yu. I., Institute of Water Transport Hygiene, USSR Ministry of Health, Moscow

"Current Problems in the Work Hygiene of Seamen Under Arctic Conditions and Some Ways of Solving Them"

Moscow, Gigiyena i Sanitariya, No 7, 1973, pp 12-16

Abstract: A variety of factors are stressful and a threat to the health of seamen and officers on ice breakers and merchant ships plying Arctic waters. These include insufficient ultraviolet light (due to cloudiness, frequent fogs, and cold which keeps the men indoors much of the time), constant high noise and vibration levels, excessive heat and inadequate ventilation in some work areas, high-frequency and ultrahigh-frequency electromagnetic fields produced by radionavigation apparatus, need for constant alertness to avoid colliding with other ships in a convoy or hitting an iceberg, and disruption of circadian rhythms because of changing work shifts. Rearranging work and rest routines, installation of air conditioning equipment, redesign of portions of the ship's interior, and shortening the duration of cruises are some of the measures recommended to improve the situation.

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MATSEVICH, L. M.

JPRS 56004

10 May 1972

UDC 656.6.071.6:658.387

BETTER CONDITIONS FOR SHIP MEDICAL PERSONNEL

[Article by Candidate of Medical Sciences L. M. Matsevich, of the Scientific Research Institute for Water Transport Hygiene; "The Scientific Organization of Labor for Ship Medical Workers and Medical Services for Sailors", Moscow, Zdravookhraneniye Rossiyskoy Federatsii, Russian, No 3, 1972, pp 19-21]

In the system of the scientific organization of labor, organizing the working and off-duty conditions of the employees holds a special place. In this regard, the necessity arises of considering not only the technical and economic, but also the physiological, hygienic, psychological and sociological factors which influence the life and activities of the people.

In the merchant marine these questions are extremely urgent. The work of sailors has specific features. These include, above all, the fact that the sailors must work and rest in one place. This also determines the nature of activities for ship medical workers.

A ship as a whole must be viewed as a particular production object on which the crew, in performing the general ship tasks, remains for a long period of time (the duration of one trip can be two-six months and more). During a trip, a sailor is simultaneously influenced by a complex of unfavorable factors which often differ greatly in their pathophysiologic significance (microclimate and static electricity, chemical substances, noise, and so forth). Here it must not be forgotten that they [the factors?] operate constantly, around the clock against a background of shift work (night and day watches), time changes (the time zones change), and in cruising in various climatic zones.

On a ship, watch duty is the basic form of labor. Around 60 percent of the crew stand it (R. S. Rez). All operations of a preventive character which provide for the proper technical state of the ship as well as minor repairs the execution of which is entrusted to the crew determine the extent of ship jobs. Their execution is provided for by the members of the deck crew (the captains, navigators and sailors) and the engineroom crew (mechanics, motormen, electricians and machinists). In addition, the crew performs a large amount of ship jobs which are not part of their duties. This leads to an upsetting of the ordered labor and time off of the sailors. The members

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USSR

UDC: 681.332.6.001.57

MATSEVITYY, Yu. M., Khar'kov Polytechnical Institute imeni V. I. Lenin

"A Device for Modeling Nonlinear Problems"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 22, 1970, Soviet Patent No 275539, Class 42, Filed 15 Apr 69, p 121

Abstract: This Author's Certificate introduces a device for modeling nonlinear problems such as contact heat exchange. The unit contains models of the contacting bodies, functional converters, and an adjustable resistor. As a distinguishing feature of the patent, precision is improved and the process of modeling is simplified by including a differential amplifier with each output connected through a functional converter to the edge points of the corresponding model of the contacting bodies, as well as a motor connected to the amplifier output. The motor shaft is connected to the slide wire of the adjustable resistor. The device also incorporates a power supply connected between the center tap of the adjustable resistor and one of its ends. The other end of the resistor and the center tap are connected to the edge points of the corresponding model of the bodies.

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1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--RETUNING OF THE FREQUENCY OF COHERENT RADIATION OF INDIUM ANTIMONIDE USING A MAGNETIC FIELD -U-

AUTHOR-(03)-ZASAVITSKIY, I.I., MATSIONASHVILI, B.N., SHOTOV, A.P.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 337-40

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTROMAGNET, INDIUM ANTIMONIDE, ELECTROMAGNETIC RADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1717 STEP NO--UR/0449/70/004/002/0337/0340

CIRC ACCESSION NO--AP0120429

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010004-0"

2/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120429

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WITH THE HELP OF A SPECIALLY CONSTRUCTED SUPERCONDUCTING ELECTROMAGNET THE RETURNING FREQUENCY OF COHERENT RADIATION OF IN ANTIMONIDE WAS STUDIED AT 4.2-LODEGREESK. ON INCREASING THE FIELD FROM 8.6 TO 50 KOE, A CHANGE IN THE WAVELENGTH OF RADIATION FROM 5.243 TO 5.000 MU, WHICH CORRESPONDS TO A RELATIVE SHIFT IN THE FREQUENCY OF SIMILAR TO 4.5PERCENT, WAS EFFECTED.

FACILITY: FIZ. INST. IM. LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 771.537.61

PRUSS, P. Kh., Candidate of Sciences, MATSIYEVICH, L. V., IVANOV, A. M., MODEL', N. M., MUZYCHENKOV, M. S., and SKACHKOVA, Ye. V.

"The Interference Resolvometer 'LIR-1'"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 9, Sep 72, pp 30-34

Abstract: The technical characteristics, operating principle, and design of the first industrial sample of a displayed automatic device, the laser interference resolvometer LIR-1, are described by reference to its optical schema and photographs of the control desk and principal blocks. The resolvometer was developed according to the technical assignment of the State Optical Institute by the Krasnogorsk Mechanical Plant for the determination of resolutions of photographic materials in the 440--2960 mm^{-1} range. A laser of the LG-36A type (λ =6328 Å) is used as light source. The LIR-1 is a two-beam interferometer in which interference bands with sinusoidal distribution of brightness develop by interaction of two flat waves. It is designed for operation under laboratory conditions. Visual or diffraction methods can be used for the evaluation of exposed and processed resolvograms. Tests of a series of high-resolution photofilms yielded a value of the resolving ability which can be characterized as R > 2700 mm^{-1}, because all frequency groups up to the limiting, were reproduced. Values of R for high-resolution films are presented. Four illustr., one table, twelve biblio. refs.
1/1

USSR UDC 612.13-088.2:621.398

MATSIYEVSKIY, D. D., Laboratory of Physiological Electronics, Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow

"Telemetric Measurement of Blood Circulation With Ultrasound"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 9, Sep 70, pp 119-121

Abstract: A radiotelemetry system for measuring blood circulation in dogs is described. The system comprises a master oscillator, a detector and amplifier, and a radio-frequency generator. The animals retain freedom of movement during the determination. Operation of the system is based on the Doppler effect, since the rate of blood flow is proportional to the difference between the transmitted and received ultrasound. The instrument measures 50x95x25 mm and weighs 200 g; it can be placed on the dog's back.

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USSR

UDC 616.981.48-022.38-036.22

MATSIYEVSKIY, V. A., LOGACHEV, A. V., FEDORINA, A. P., and PISKLOVA, A. S., Ivano-Frankovsk Medical Institute and Ivano-Frankovskaya Oblast Sanitary-Epidemiological Station

"An Outbreak of Food Poisoning Caused by E. coli 0124:K72 (B17)

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 3, 1971, pp 137-139

Abstract: An acute dysentery-like disease broke out among children and adult attendants in a children's sanatorium. The disease, caused by E. coli 0124:K72(B17), was characterized by an explosive onset, elevated temperature, gastrointestinal disturbances (abdominal pain, liquid stools sometimes admixed with mucus and blood), and brief course. All the cultures isolated from the patients produced a positive methyl red reaction and a negative Foges-Proskauer reaction. They were lacking in fibrinolytic and plasma-coagulating or hemolytic properties. All were sensitive to standard colicins but insensitive to penicillin and furacillin. They formed indole and hydrogen sulfide and fermented glucose, mannite, maltose, arabinose, xylose, sorbite, dulcite, glycerine, lactose, and rhamnose with the formation of gas and acid. However, they did not ferment sucrose, inositol, salicin, urea, or milk.

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UDC 612.58:612.13:[illegible]

USSR

[illegible], M. I., [illegible], V. N., [illegible], V. [illegible], [illegible]
KAVLOVA, L. N., [illegible], I. N., [illegible], L. [illegible]

"Differential (Complex) Hypothermia and Its [illegible] and Theoretical Basis"

Minsk, Vestsi Akad [illegible] Nauk BSSR, Seryya [illegible]
No 1, 1970, pp 60-66

Abstract: A broad review of the applications of [illegible] is presented and various biological functions involved, including EKG, biochemistry, hemodynamics, central and peripheral [illegible] etc. are discussed. An original construction of a [illegible] chamber is shown, consisting of two chambers, one for the head and one for the body, in which the temperatures differ. The effect of two-chamber hypothermia, occurring under different degrees of [illegible] on various reflexes in dogs, hemodynamics, hormones, [illegible], and blood proteins is discussed. Various clinical possibilities are discussed and the use of this apparatus in cardiac surgery is suggested.

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UDC: 681.327.66:621.317.757

USSR

OFENGENDEN, R. G., RATMANSKIY, R. Yu., ANDREYEV, O. M., [redacted] F. A., DYSENKO, B. N., MATSKEVICH, G. G., ODLNETS, G. S., SHALEYKO, K. A.

"A Pulse Analyzer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, 1970, Author's Certificate No 265951, filed 25 Jan 68, p 41

Abstract: This author's certificate introduces: 1. A pulse analyzer with memory device of the periodic type, based for instance on a magnetic drum. The analyzer contains an analog-to-code converter, memory unit record and playback amplifiers, a data output module, and a control unit. As a distinguishing feature of the patent, the analyzer is simplified by incorporation of a device which records tags for the beginning and end of isolated segments on an auxiliary field of the periodic memory, a unit which codes these tags with its output connected to the recording amplifier, a tag playback amplifier, a device for decoding the reproduced tags, and a unit which passes pulses located in the isolated segments and which is controlled by the decoding device. 2. A modification of this pulse analyzer which has the distinguishing feature of automatic generation of control signals when predetermined number values are accumulated in selected channels. The analyzer contains a device for recording the indicated numbers on an auxiliary field of the periodic memory in phase with the arrangement of the data

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USSR

OFENGENDEN, R. G., et al, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, 1970

accumulated in the corresponding channels. Also incorporated in this pulse analyzer is a comparison unit with its inputs connected to the circuit for playback of signals recorded on this field and to the playback amplifier for the information field, while its output is connected to the circuit which shapes the control signals when the accumulated information is equal to or greater than the predetermined numbers. 3. A modification of this analyzer which has the distinguishing feature of numerical integration of the data accumulated in the isolated segments of the band being measured. The output of the pulse pass unit is connected to the input of the comparison unit. 4. A modification of this analyzer which is distinguished by its ability to record additional information in the memory device during data accumulation. The unit contains a commutator whose control input is connected to the track of a synchropulse field on which a signal is recorded which divides the zones where the measured and auxiliary information are recorded on the memory unit of the analyzer.

2/2

USSR

UDC 627.8:626-33:532.59

MATSKEVICH, I. K.

"Wave Oscillations of the Flow Level and Velocity in the Tailrace of Kama Hydroelectric Power Plant"

Uch. Zap. Perm. un-t (Scientific Notes of Perm University), No 246, 1970, pp 48-61 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D67)

Translation: This article contains an investigation of the characteristic features of wave oscillations of water levels and flow velocities in the tailrace of Kama Hydroelectric Power Plant. Some parameters (height, period, velocity) of the longwave transmissions in the nonsteady state motion zone are presented on the basis of natural observations. There are 2 tables and a 35-entry bibliography.

1/1

USSR

UDC: 621.374.5(088.8)

MATSKEVICH, O. N.

"An Isolated Pulse Pickup"

USSR Author's Certificate No 269615, filed 20 May 67, published 7 Aug 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G239 P)

Translation: The proposed pickup contains a shaper and reacting elements such as pushbuttons. To simplify the circuit, the pushbutton contacts are connected through capacitors to the shaper input, and directly connected to the potential inputs of pulse-potential coincidence circuits whose pulse inputs are connected to the shaper output.

1/1

USSR

UDC: 656.25-50

MITYUSHEV, S. I., Chairman of the Department of Communications of UEMIIT,
FILIMONOV, B. M., Chief Engineer, Computing Center of the Sverdlovsk Road,
SUKHORUKOV, V. G., Engineer, MATSKEVICH, S. N., Engineer, PLOTITSIN, R. I., Engineer

"A System for Continuously Checking the Reliability of Transmitted Information"

Moscow, Avtomatika, Telemekhanika i Svyaz', No 6, Jun 72, pp 12-14

Abstract: A system is described for continuously checking the reliability of data transmission in railway communications systems. The system covers the entire communication channel from the primary document to the computer storage unit. The basis of the procedure is guarding against errors in the primary document by introducing a mod 10 check. A check digit is computed and entered in the primary coded documentation. The check digits give the information of the primary document a certain immunity to interference inasmuch as they make error detection possible. Three versions of the mod 10 check system are examined on the basis of a digital message made up of six digits. A block diagram for data transmission with continuous reliability check is presented and described in detail.

1/1

USSR

UDC 541.183.24

MATSKEVICH, YE. S., KUZEVANOVA, L. V., and KUL'SKIY, L. A., Academician of the Academy of Sciences Ukrainian SSR, Institute of Colloidal Chemistry and the Chemistry of Water, Academy of Sciences Ukrainian SSR, Kiev

"Effect of Electron Density Displacement in Surface Layer of Active Carbons on Their Adsorption Properties in Electrolyte Solutions"

Moscow, Doklady Akademii Nauk SSSR, Vol 194, No 2, 1970, pp 363-366

Abstract: Based on the idea of the nonequipotentiality of the surface of oxidized active carbon, the authors assumed that changes in the dipole potential jump φ_d can be judged not so much from a decrease in cation adsorption as a change in the magnitude of anion adsorption. The purpose of the article was to study this question. The adsorption was studied on specimens of ashless coarse-pore carbon from phenol-aldehyde resin. It was found that methylation of oxidized carbon decreases the magnitude of the dipole potential jump due to the presence

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USSR

MATSKEVICH, YE. S., et al., Doklady Akademii Nauk SSSR, Vol 194, No 2, 1970, pp 363-366

of different oxygen-containing groups on the surface. The value of $\Delta\varphi_d$ can be found from variations in the magnitude of anion adsorption (a_{A^-}). Variations in $\Delta\varphi_d$ in the transition from oxidized carbons to methylated oxidized carbons can also be judged from displacement of the point of zero ion adsorption on these carbons, which tends towards less positive potentials.

2/2

USSR UDC: 621.378.325

BYKOVSKIY, N. Ye., ILIN, V., KRYUKOV, P. G., LATUSHKO, Ya. A., NI, N. L., SENATSKIY, Yu. V., and CHEKALIN, S. V.

"Increasing the Energy Ratio of Ultrashort Laser Pulses to Noise"

Moscow, Kvantovaya elektronika, No 7, 1972, pp 68-70

Abstract: The purpose of this paper is to investigate the contrast, i.e., the ratio of the basic pulse energy to the background noise radiation energy, of a laser generating ultrashort pulses. The laser considered uses neodymium glass. In real lasers, the limiting contrast is reached not because of the nonlinear losses in the interaction of the radiation with the optical material of the laser equipment, as some researchers insist, but for other reasons. These losses weaken the most intense of the pulses, and consequently reduce the contrast. This brief communication demonstrates how these losses can be reduced in exchange for a reduction in the energy density of the resonator. The theory behind this procedure is presented, and the schematic of an amplifier for the laser in a stable two-component medium is reproduced. Estimates, made from oscillograms, indicated that the contrast was at least doubled by this device.

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USSR UDC: 621.396.4(088.8)

MATSKOV, A. A., MUSAYELYAN, S. A., DANIELYAN, S. A., LEBEDEV, V. F.

"A Modulation Device for a Radio Relay Station With Unilateral Phase--Pulse Modulation"

USSR Author's Certificate No 278777, filed 14 Jan 69, published 26 Nov 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D399 P)

Translation: A modulation device is proposed for a radio relay station with unilateral phase-pulse modulation. The device contains a low-frequency amplifier, envelope restitution circuit, comparator and output pulse shaper connected in series, and also a sawtooth reference voltage generator connected to the comparator. To reduce nonlinear distortions of the modulating signal, connected to the input of the low-frequency amplifier is a series circuit comprised of a buffer amplifier and a compensation signal shaper which may be made in the form of a modulating signal detector whose output is connected through a coupling circuit to one of the comparator outputs. V. P.

1/1

USSR UDC: 621.374.4(088.8)

DANIELYAN, S. A., MATSKOV, A. A., NESTERUK, V. V.

"A Device for Obtaining the Difference Frequency of Two Pulse Trains"

USSR Author's Certificate No 262164, filed 29 Dec 67, published 1 Jun 70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G216 P)

Translation: This Author's Certificate introduces a device for obtaining the difference frequency of two pulse trains. The unit contains a flip-flop whose inputs are connected through coincidence circuits to the pulse shapers of the initial pulse trains. The output of one of these pulse shapers is connected to the input of one of the coincidence circuits through a phase inverter. To eliminate fragmentation of the output signal in the case of interference, a unit for modulating the relative position of the shaper output pulses, such as a pulse time modulator, is connected in series with the output of one of the pulse shapers. The controlling input of this modulator is connected to the flip-flop output.

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USSR UDC 621.386.662

DANIELYAN, S. A., MATSKOV, A. A., SUPER, Yu. M.

"A Device for Phase Automatic Frequency Control"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 8, Mar 71, Author's Certificate No 296212, division H, filed 2 Jun 69, published 12 Feb 71, p 179

Translation: This Author's Certificate introduces a device for phase automatic frequency control which contains cophased and quadrature channels with phase detectors, and a tunable oscillator. The frequency control input of the tunable oscillator is connected through a low-frequency filter to the output of the phase detector in the cophased channel. As a distinguishing feature of the patent, in order to reduce the phase error in the steady-state mode and to make the locking band close to the holding band, the device is equipped with a coincidence stage whose inputs are connected to the outputs of the phase detectors in the cophased and quadrature channels through a pulse shaper for voltage polarity reversal, and through a limiting bilateral clipper respectively. The voltage of the tunable oscillator is fed to the reference inputs of the phase detectors in both channels through a 180° phase keyer controlled by pulses from a counting flip-flop whose input is connected to the output of the coincidence stage.

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USSR

UDC: 621.396.43

MATSKOV, A. A., MUSAYELYAN, S. A., DANIELYAN, S. A., LEBEDEV, V. F.

"A Modulation Device for a Radio Relay Station With Unilateral Pulse Position Modulation"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26, 1970, Soviet Patent No 278777, Class 21, filed 14 Jan 69, p 43

Abstract: This Author's Certificate introduces a modulation device for a radio relay station with unilateral pulse position modulation. The unit contains a low frequency amplifier, envelope restoration circuit, comparator and output pulse shaper all connected in series, and also a reference sawtooth voltage oscillator connected to the comparator. As a distinguishing feature of the patent, nonlinear distortions of the modulating signal are reduced by connecting a series circuit at the output of the low frequency amplifier consisting of a buffer amplifier and a compensation signal shaper which may be made in the form of a modulating signal detector whose output is connected in addition to one of the comparator outputs through a coupling circuit.

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USSR UDC 621.376.6

MATSKOV, A. A., MUSAYELYAN, S. A., LEBEDEV, V. F., DANIELYAN, S. A.

"A Modulation Device for a Radio Relay Station"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288062, class 21, filed 4 Aug 69, published 3 Dec 70, p 61

Translation: This Author's Certificate introduces a modulation device for a radio relay station with unilateral pulse-time modulation. The device contains a series hook-up comprised of a low-frequency module, an envelope restitution circuit and a comparator connected to an output pulse shaper and a sawtooth voltage generator which includes a charging capacitor and a master current stage. As a distinguishing feature of the patent, mutual interference between channels is eliminated by making the comparator with two transistors of the same conductivity type. The emitters of these transistors are tied together and connected to the charging capacitor, and the collectors are also tied together and connected to the output pulse shaper, e. g. through a trigger winding. The base of one of the transistors is connected to the output of the envelope restitution circuit, while the base of the other is connected to a blanking voltage source, e. g. through a resistive divider.
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USSR

UDC 621.383.73

RATNER, YE. S. and MATSKOVSKAYA, YU. Z.

"The Spatial Filtering of Noise in Image Brightness Amplifiers"

Leningrad, Optiko-Mechanicheskaya Promyshlennost', No 2, Feb 73, pp 3-6

Abstract: A mathematical demonstration of a maximum in the signal to noise ratio for an electro-optical image brightness amplifier with spatial noise filtration, occurring on widening the dispersion function, is presented. Without spatial noise filtration the ratio is said to monotonually decrease. The maximum ratio is greater than that of an ideal system with a dispersion function close to the lambda function. In this case the dispersion function is approximated by a bell-curve. It is also concluded that the dispersion function should be minimal for some optimal portion of the test object.

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USSR

MATSKYAVICHYUS, V.

"Limit Transfer in Problems of Optimal Stopping of Markov Processes"

Lit. mat. sb. [Lithuanian Mathematics Collection], 1973, 13, No 1, pp 115-128 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 10 V75 by the author)

Translation: Let $X^n=(x_t^n, \mathcal{F}_t^n, P_t^n)$, $n=1,2,\ldots,\infty$, be a sequence of right continuous, strictly markov processes in the semicompact (E,d), $g^n(x)$, $n=1,2,\ldots,\infty$, be a sequence of real measurable functions in E, such that processes $g^n(x_t^n)$, $t\geq 0$ are separable. Let $\mathcal{M}^n$ be the class of all moments of stopping for X^n, while $\mathcal{M}_T^n \subset \mathcal{M}^n$ is the class of all moments of stopping of τ^n such that $P_x^n\{\tau_n^n \leq T\}=1$ for $x \in T$. We define the values of the game for the process X^n

$$s_T^n(x) = \sup_{\tau \in \mathcal{M}_T^n} E_x^n g^n(x_\tau^n), \quad x \in E,$$

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MATSKYAVICHYUS, V., Lit. mat. sb., 1973, 13, No 1, pp 115-128

$$s^n(x) = \sup_{\tau} E_x^n g^n(x_\tau^n), \quad x \in E.$$

This work presents sufficient conditions for convergence of $s_T^n(x)$ to $s_T^\infty(x)$ and $s^n(x)$ to $s^\infty(x)$ (theorems 1, 2). The results produced are used to prove the asymptote connection of the optimal moments of stopping for one class of win functions from sums of independent identically distributed random quantities and stable processes (theorem 3).

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UDC: 519.2

USSR

MATSKYAVICHYUS, V.

"Concerning Some Problems of Optimum Stopping of Stable Random Processes"

Lit. mat. sb. (Lithuanian Mathematics Collection), 1972, 12, No 1, pp 173-180 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V100)

Translation: Optimum termination rules are considered when

$$M\frac{u+\zeta(\tau)}{b+\tau} \text{ and } M\frac{u+S_N}{b+N},$$

are being maximized, where $\zeta(t)$, $t \geq 0$ is a stable process with exponent α,

$$1<\alpha<2,\ S_n=\sum_{k=1}^{n} X_k,\ n\geq 1.$$

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MATSKYAVICHYUS, V., Lit. mat. sb., 1972, 12, No 1, pp 173-180

the X_k are independent random quantities with common distribution belonging to the region of normal gravitation of a stable law with exponent α, $1 < \alpha \leq 2$, $MX_k = 0$, $-\infty < u < \infty$, $b > 0$. The existence and form of optimum stopping rules is established: 1) in the discrete case $N = \min\{k : u + S_k \geq \beta(b + k)\}$, where $\beta(b)$ is a unique solution of the equation

$$\frac{\beta(b)}{\beta} = \sup M \frac{\beta(b) + S_N}{b + N}$$

where the least upper bound is taken with respect to all stopping times N; 2) in the continuous case

$$\tau = \inf\left\{t : u + \zeta(t) \geq \gamma (b+t)^{\frac{1}{\alpha}}\right\},$$

where γ is a constant independent of u, and b, $\beta(b)$ and γ are related by the expression

$$\lim_{b \to \infty} \frac{\beta(b)}{b^{\frac{1}{\alpha}}} = \gamma.$$

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USSR UDC 519.24

MATSKYAVICHYUS, V.

"Optimal Stopping of a Markov Chain with Overestimation"

Liet. mat. sb. [Lithuanian Mathematics Collection], Vol 11, No 1, 1971, pp 153-157, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V305 by the author).

Translation: Suppose we are given a two dimensional Markov chain $Y=((\beta^n, x_n), \mathcal{F}_n, P_{0,x})$ in phase space $((0, 1] \times E, \mathcal{B}_1 \times \mathcal{B})$, where $(E, \mathcal{B})$ is any phase space, $\mathcal{B}_1$ is the σ algebra of Borel subsets in the in the interval $(0, 1]$, $\beta^n=\beta_0\beta_1 \ldots \beta_n$, $\beta^n - \mathcal{F}_n$-measurable ransom quantities, $0<\beta\leq 1$ for all $n \geq 0$, and with any $A \in \mathcal{B}_1 \times \mathcal{B}$ $P(x, A)=P_{0,x}((\beta_1, x_1) \in A)$ is a $\mathcal{B}$-measurable function of x (independent of 0). Suppose, stopping the chain at moment n, we produce gain $\beta^n g(x_n)$. It is proven that with certain assumptions concerning process Y and function g, the optimal and ε-optimal rules for stopping chain Y can be found by analyzing the chain $(x_n, \sigma(x_0, x_1, \ldots, x_n), P_n)$.

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UDC 612.858.73-07

USSR

MATSNEV, E. I.

"The Effect of Transverse Acceleration on Man's Acoustic Analysor"

Kiev, Zhurnal Ushnykh, Nosovykh i Gorlovykh Bolezney, No 2, Mar/Apr 72, pp 12-17

Abstract: Experiments were carried out with 30 men (24-35 years of age) subjected to transverse accelerations (back to chest) at 4-6 g for 120 sec.; at 8 g for 60 sec.; and at 10 g for 20 sec. on a large centrifuge. The acceleration rate in all cases was 0.2 g/sec. Audimetric analysis indicated that the hearing threshold in all subjects increased immediately after the experiments. It was 20-23, 14, 2.5-5.0 db for frequencies of 125-4000, 6000, and 8000-10,000 Hz for the 4-6 g acceleration; 22-24, 12-18, and 4-5 db for 125-1000, 1500-6000, and 8000-10,000 Hz for the 8 g acceleration; and 22, 12-19 db for 250 and 125-6000 Hz for the 10 g acceleration, respectively. In 10-15 min. after experiments the hearing threshold did not return to normal, and it was 8-16 db for 125-6000 Hz for the 4-6 and 8 g acceleration, only 4-13 db for the same frequencies for the 10 g acceleration. A complete restoration of hearing took place 20-25 min. after the termination of experiments for the 4-6 and 8 g acceleration. However, it took 30-35 min. for the 10 g

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MATSNEV, E. I., Zhurnal Ushnykh, Nosovykh i Gorlovykh Bolezney, No 2, Mar/ Apr 72, pp 12-17

acceleration. The effect was identical for the left and right ears. A combination of many factors, such as noise, vibration, irritation of the vestibular apparatus, hemodynamic changes, hypoxia, changes in the central nervous system could contribute to the mechanism of the hearing threshold shifts. The obtained results can be useful in aviation and astronautics.

WELDING

USSR UDC 621.791.052.011:669.15-194.:2+669.786+669.292

MATSNEV, E. P., Engineer, ASTAF'YEV, A. S., Candidate of Technical Sciences, STRUKOVA, N. S., Engineer (Central Scientific Research Institute for Ferrous Metallurgy imeni I. P. Bardin), CHECHEKIN, YU. F., Engineer (Plant imeni Lenin), and NABATOVA, K. A., Candidate of Technical Sciences (Central Scientific Research Automobile and Auto Engine Institute)

"Properties of Welded Joints of Commercial 12G2 Steel Alloyed With Nitrogen and Vanadium"

Moscow, Svarochnoye Proizvodstvo, No 11, Nov 70, pp 27-29

Abstract: Results are presented from a study of the properties of welded joints made under conditions similar to those used for side members of motor vehicle frames from a 100-ton commercial melt of steel produced in an open hearth furnace at the Chelyabinsk Metallurgical Plant. The chemical composition of the metal was: 0.13% C, 1.19% Mn, 0.12% Cr, 0.10% Ni, 0.12% V, 0.02% N, 0.09% Cu, 0.018% S, 0.008% P. Welded joints produced

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MATSNEV, E. P., et al., Svarochnoye Proizvodstvo, No 11, Nov 70, pp 27-29

in the sheet steel by manual arc welding were equal in strength to the base metal. The fatigue strength of the welded joints was 15-20% higher than the fatigue strength of welded joints in 30T steel.

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1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--THE REACTION OF AROUND THE WELD ZONE OF THE HEAT RESISTANT MARTENSITIC STEEL 1KH7MVFBR EP505 TO THE THERMAL CYCLE OF WELDING -U-

AUTHOR--MATSNEV, E.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SVAROCHNOYE PROIZVODSTVO, NO 1, 70, PP 23-24

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--HEAT RESISTANT STEEL, MARTENSITIC STEEL, ALLOY DESIGNATION, WELDING/(U)EP505 LOW ALLOY STEEL, (U)1KH7MVFBR LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/2031 STEP NO--UR/0135/70/000/001/0023/0024

CIRC ACCESSION NO--AP0118985
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 023

CIRC ACCESSION NO--AP0118985

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE EFFECT OF THE THERMAL CYCLE OF WELDING ON THE PROPERTIES OF THE AROUND THE WELD ZONE OF THE HEAT RESISTANT MARTENSITIC STEEL EP505. THE EVALUATION WAS MADE OF ITS RESISTANCE TO THE FORMATION OF COLD CRACKS IN THE AROUND THE WELD ZONE DURING WELDING. FACILITY: CENTRAL SCIENTIFIC RESEARCH INSTITUTE OF FERROUS METALLURGY IMENI I. P. BARDIN.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--PREVENTION AND TREATMENT OF PARONYCHIA UNDER CHAST' CONDITIONS -U-

AUTHOR--MATSNEV, V.V.

COUNTRY OF INFO--USSR

SOURCE--VOYENNO-MEDITSINSKIY ZHURNAL, NO 3, 1970, PP 79-80

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SKIN DISEASE, MILITARY MEDICINE, MILITARY HOSPITAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0403 STEP NO--UR/0177/70/000/003/0079/0080

CIRC ACCESSION NO--AP0134171

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134171

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE STRUCTURE OF SUPPURATIVE DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE SHOWS THAT A CONSIDERABLE PERCENTAGE CONSISTS OF PARONYCHIA. OF ALL PATIENTS WITH PARONYCHIA ABOUT 25PERCENT ARE TREATED IN THE MEDICAL BATTALION AND HOSPITALS 19 DAYS ON THE AVERAGE. THOSE PERIODS ARE INCREASED WHEN THE FORMS ARE COMPLICATED. CONSEQUENTLY, THE PROBLEM OF PREVENTION AND TREATMENT OF PARONYCHIA IS A VERY URGENT ONE AND REQUIRES FROM THE MILITARY MEDICAL SERVICE SERIOUS ATTENTION TO THE WORKING OUT AND SYSTEMATIC IMPLEMENTATION OF EFFECTIVE MEASURES DIRECTED TOWARD THE PREVENTION OF MICROTRAUMAS, ONE OF THE MAIN CAUSES OF SUPPURATIVE INFLAMMATION OF THE FINGERS.

UNCLASSIFIED

USSR

UDC 632.954:631.445.4

MATSNEVA, N. G., Voronezh Agricultural Institute

"Effect of Eptam, Prometrin and Mixtures of Herbicides on the Nutritive Regime of Leached Chernozem"

Moscow, Agrokhimiya, No 8, 1972, pp 133-135

Abstract: The dynamics of accumulation of nitrate nitrogen and free phosphoric acid in the soil were made in 1964-1966 at the experimental station of Voronezh Agricultural Institute. In the field experiment with sunflowers, eptam (4 and 5 kg/hectare), prometrin (2 and 2.5 kg/hectare) and mixtures of eptam with prometrin (5 + 2 kg/hectare) and eptam with alipur (5 + 1.2 kg/hectare) improved the nutritive regime of the soil when injected during preplant cultivation. In the flowering stage and before harvesting the sunflowers, the nitritate nitrogen content increased by 1.2-4.2 times and the avialable phosphates by 1.1-1.8 times. The pregermination application of herbicides in years with an insufficient amount of precipitation had a weak effect on the nutritive content on the soil.

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USSR

KALUGINA, G. N., MATSNEVA, N. M., IBRAGIMOVA, F. I., MOSKOVA, V. A., ARONOVA, Ye.R. and YEVSTIGNEYEVA, O. F. Uzbek Scientific Research Institute of Hematology and Blood Transfusion

"The Effect of Certain Solutions of Synthetic Polymers on Formed Elements in Preserved Blood"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 6, 1970, pp 36-38

Abstract: The suitability of three synthetic polymers -- polyvinyl alcohol, carboxymethyl cellulose, and polyvinyl pyrrolidone -- for the preservation of donor blood was investigated. The results indicate that these substances prolong the life span and maintain a perfect physiological state of erythrocytes for up to 40-45 days, of leukocytes up to 20-25 days, and of thrombocytes up to 5-7 days. These synthetic colloids also speed up the sedimentation rate of blood and thus make it possible to separate formed elements from plasma without undue trauma.

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USSR

UDC 669.017.1:539.56.001.5

GULYAYEV, A. P., VOLKOVA, M. A., VYSHVANYUK, I. M., KOZLOV, N. P., and MATSNEVA, YE. G.

"Mechanical Properties of 10GT Steel at Negative Temperatures and Influence of Imitated Welding Cycle on the Cold Brittleness Threshold"

Spetsial'nyye Stali i Splavy (Special Steels and Alloys -- Collection of Works), No 77, Metallurgiya Press, 1970, pp 181-187

Translation: It is established that the mechanical properties of all melts and shapes of 10GT steel studied, tested at -60°C, satisfy the requirements of All-Union State Standard GOST 5781-61, while the impact toughness in the hot-rolled state at -60°C is 1,000-2,200 kJ/m^2 (10-22 kg·m/cm^2).

The cold brittleness threshold of periodic profile No 16-32 of 10GT steel lies in the interval from -80 to -100°C. Fully viscous fracture of the steel occurs at room temperature.

The cold brittleness threshold of 10GT and St5 steels after a welding cycle is practically independent of preliminary heat treatment. The use of heat treatment for welded products is undesirable, since welding reduces its effectiveness. 2 figures; 1 table.

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USSR UDC: 621.382.2

ZASAVITSKIY, I. I., MATSONASHVILI, B. N., and SHOTOV, A. P., P. N. Lebedev Physics Institute, Moscow

"Effect of a Magnetic Field on Spontaneous and Coherent p-n Junction Radiation in PbSe"

Leningrad, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp 1288-1291

Abstract: The use of a quantizing magnetic field for investigating the recombination radiation spectrum of semiconductors yields information regarding the energy structure near the spectrum edges. Hence the reason for this paper studying the effect of the magnetic field on radiation from PbSe p-n junctions. For the measurements, the junctions were made of n and p-type material with carrier concentrations of $(1.2\text{-}5.0)\cdot10^{18}$/cc and a mobility of $(1\text{-}3)\cdot10^4$ cm^2 per V·sec at 77° K. The p-n junctions were made by diffusing the Se or Pb from PbSe powder into sealed quartz ampoules. Measurements were made at 4.2° K in magnetic fields of up to 10 kOe in a helium optical cryostat placed in the gap of an ordinary electromagnet. It was found, from the shifts in the radiation lines due

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ZASAVITSKIY, I. I., et al, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp 1288-1291

to the magnetic field, that the radiation junctions occur between the Landau split spin levels. At the temperature of liquid helium, junctions were observed with the electron spin both maintained and reoriented. For laser diodes, shifts of different types caused by the dependence of the refraction index on the magnetic field were also observed. The authors thank Ye. G. Chizhevskiy for preparing the specimens, and A. K. Kupriyanov and V. I. Pogodin for their assistance with the work.

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USSR

UDC: 632.95

AVETYAN, M. G., NIKOGOSYAN, L. L., MATSOYAN, S. G., Institute of Organic Chemistry, Academy of Sciences of the Armenian SSR

"A Method of Making 2-Chloroethyl-2-thiocyanoethylamine"

USSR Author's Certificate No 345142, filed 27 May 70, published 15 Aug 72 (from RZh-Khimiya, No 10, May 73, abstract No 10N560P by T. Ya. Ogibina)

Translation: A method is proposed for synthesizing 2-chloroethyl-2-thiocyanoethylamine (I). The compound is used as a biologically active material in agriculture because of the presence of the β-chloroethyl and β'-thiocyanoethyl groups in the molecule. Example: 0.1 mole of N-(2-chloroethyl)-ethylenimine in 100 ml of C_6H_6 is added over a 30 minute period to 20 ml of dry ethyl solution containing 0.3 mole of HSCN with cooling by ice water, the mixture is agitated for one hour at about 20°C, and the product is isolated from the organic solution and washed in absolute ether yielding 19.7 g of thiocyanide of compound I, $C_6H_{10}ClN_3S_2$, melting point 78-9°C (Acetone).

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1/2 009 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--UNSATURATED LACTONES. I. SYNTHESIS OF SUBSTITUTED UNSATURATED GAMMA LACTONES BY CONDENSING TERTIARY ALPHA GXD ALCOHOLS WITH MALONIC ESTER

AUTHOR-(05)-AVETISYAN, A.A., TATEVOSYAN, G.E., MANGASARYAN, T.S.,
MATSOYAN, S.G., GANGYAN, M.T.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 962-4 (RUSS)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ESTERIFICATION, CHEMICAL SYNTHESIS, LACTONE, ALCOHOL, CONDENSATION REACTION, MOLECULAR STRUCTURE, TERTIARY ALCOHOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1316 STEP NO--UR/0366/70/006/005/0962/0964

CIRC ACCESSION NO--AP0134990
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--11DEC70

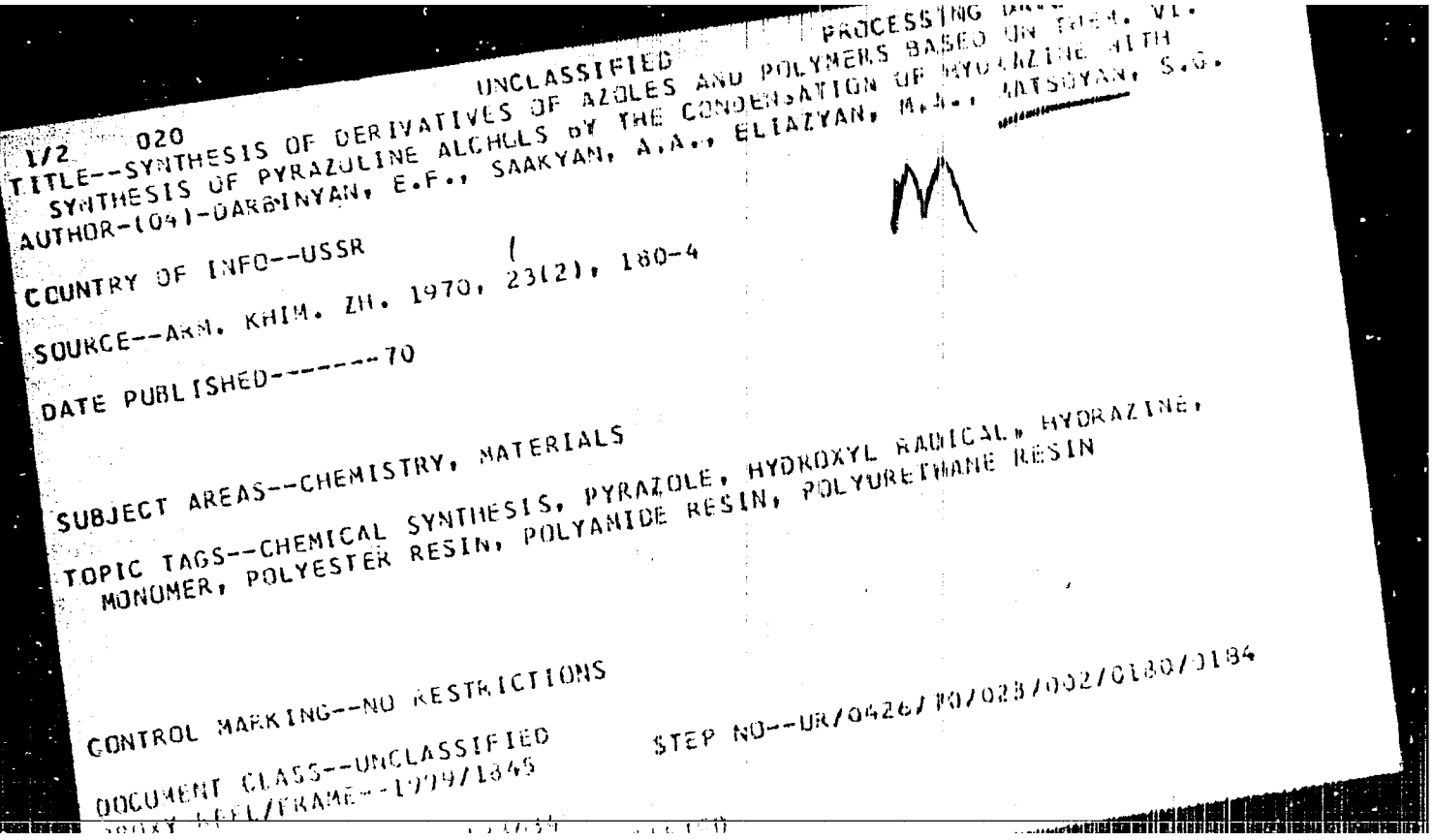
2/2 C09

CIRC ACCESSION NO--AP0134990

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF RR C(OH)COME WITH CH SUB2 (CO SUB2 ET) IN ABS. ETOH CONTG. NA GAVE 5,R, 5,R PRIME DISTRIBUTED 4,METHYL,DELTA ALPHA,BETA,BUTENOLIDES (R AND R PRIME ARE ME AND ME, ME AND ET OR (CH SUB2) SUB5). THE REACTION INVOLVES TRANSESTERIFICATION. THE INTERMEDIATE ESTER MECOCME SUB2 O SUB2 CO SUB2 ET WAS ISOLATED AND ITS STRUCTURE ESTABLISHED BY SYNTHESIS.

FACILITY: EREVAN. GOS. UNIV., EREVAN, USSR.

UNCLASSIFIED



UNCLASSIFIED PROCESSING [illegible]

1/2 020

TITLE--SYNTHESIS OF DERIVATIVES OF AZOLES AND POLYMERS BASED ON THEM. VI. SYNTHESIS OF PYRAZOLINE ALCHOLS BY THE CONDENSATION OF HYDRAZINE WITH

AUTHOR-(04)-DARBINYAN, E.F., SAAKYAN, A.A., ELIAZYAN, M.A., ARTSOYAN, S.G.

COUNTRY OF INFO--USSR

SOURCE--ARM. KHIM. ZH. 1970, 23(2), 180-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL SYNTHESIS, PYRAZOLE, HYDROXYL RADICAL, HYDRAZINE, MONOMER, POLYESTER RESIN, POLYAMIDE RESIN, POLYURETHANE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0426/70/023/002/0180/0184

[illegible] REEL/FRAME--1979/1849

2/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123634

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HEATING OF H SUB2 C:CHC TRIPLE BOND CC(OH)RR PRIME1 WITH H SUB2 NNH SUB2.H SUB2 O AT 120-30DEGREES GAVE 65-90PERCENT I (R AND R PRIME1 GIVEN): H, H; H, ME; ME, ME; ME, ET; ME, PH; (CRR PRIME1 EQUALS) CYCLOHEXYL; (CRR PRIME1 EQUALS) 1,2,5,TRIMETHYL,4,PIPERIDYL; (CRR PRIME1 EQUALS) 2,2,DIMETHYL,4,PYRANYL. THE ALK. HYDROLYSIS OF I GAVE 3,METHYL,2,PYRAZOLINE AND THE CORRESPONDING RR PRIME1 CO. I ARE POTENTIAL MONOMERS FOR THE PREPN. OF POLYESTER-POLYAMIDES AND (OR) POLYURETHANES. FACILITY: INST. ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--SYNTHESIS OF AZOLE DERIVATIVES AND POLYMERS BASED ON THEM. IX. SYNTHESIS OF N,ALKYL,3,VINYLPYRAZOLINE -U-

AUTHOR-(04)-DARBINYAN, E.G., SAAKYAN, A.A., ELIAZYAN, M.A., MATSOYAN, S.G.

COUNTRY OF INFO--USSR

SOURCE--ARM. KHIM. ZH. 1970, 23(4), 290-1

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC AZOLE COMPOUND, PYRAZOLE, VINYL COMPOUND, ALKYL RADICAL, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0805

STEP NO--UR/0426/70/023/004/0290/0291

CIRC ACCESSION NO--AP0136239

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2/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136239

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 1,ALKYL,3,VINYL,2,PYRAZOLINES (I) WERE PREPD. FROM CH SUB2:CHC TRIPLE BOND CCH SUB2 OHE AND N SUB2 H SUB4 .H SUB2 O VIA 3-(BETA, METHOXYETHYL)PYRAZOLINE (II). II WAS ALKYLATED WITH AN ALKYL HALIDE IN THE PRESENCE OF K SUB2 CO SUB3 AND THEN HEATED IN VACUO WITH KOH TO ELIMINATE MEOH. I WERE OBTAINED IN 35-73PERCENT YIELD (ALKYL EQUALS ME, ET, PR, AND BU); THEIR PHYS. CONSTS. WERE TABULATED. FACILITY: INST. ORG. KHIM., EREVAN, USSR.

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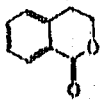
Acc. Nr. AP0041531 Abstracting Service: CHEMICAL ABST. 4/70 Ref. Code UR0366

M

89985g Styrene derivatives. XV. Synthesis of 2-vinylbenzoic acid and its derivatives. Porosyan, G. M.; Karapetyan, T. G.; Matsoyan, S. G. (Inst. Org. Khim., Erevan, USSR). *Zh. Org. Khim.* 1970, 6(1), 139–41 (Russ). The condensation of $PhCH_2CH_2OH$ with HCHO in the presence of HCl, followed by oxidn. gives isochroman-1-one (P. Hiaitte, 1961) (I). Heating I with KOH powder at 175–80° gave o-H_2C:CH-



(I)

C_6H_4COX (X = OK) (II), which was converted to II (X is OH). Std. reactions applied to II (X is OH or Cl) gave other II (X is OMe, OPh, NH_2, NHMe, NMe_2, or NHPh). CPJR

REEL/FRAME
19751399

UDC 911.3.616.981.452(574)

USSR

LAVROVSKIY, A. A., KUCHEROV, P. N., OPTYAKOVA, A. F., ROZHKOV, A. A., DEREVYANCHENKO, K. I., MATSUGA, V. G., BAKHTIGOZIN, I. A., ROZHKOV, A. A., CHIKRIZOV, F. D., KARUSHIN, F. A., and DUBYAGIN, P. S.

"Survival of Plague Bacteria During Interepizootic Years in the Sands Focus Area Between the Volga and Ural River"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections — collection of works) Vyp. 4 (14). Saratov, 1970, pp 94-104 (from RZh-Meditsinskaya Geografiya, Separate Issue, No 4, Abstract No 4.36.93)

Translation: A list is presented of reasons for the abrupt decrease in epizootic activity in the sands plague focus between the Volga and Ural Rivers. Plague bacteria, however, did not disappear from the biocenotic focus system, as evidenced by the epizootics of 1962-1963 and 1966 and the isolated cases of isolation of bacterial cultures from gerbils during depressed phases of focus life. It becomes more and more evident that the phenomenon of microfocality is an indispensible attribute of existence of plague bacteria in the biocenosis. Materials on landscape adjustment of particularly stable plague epizootics facilitate the definition, in the

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LAVROVSKIY, A. A., et al., Probl. osobo opash. infektsiy (Problems of Especially Dangerous Infections -- collection of Works) Vyp. 4 (14). Saratov, 1970, pp 94-104 (from RZh-Meditsinskaya Geografiya, Separate Issue, No 4, Abstract No 4.36.93)

Volga-Ural sands area, of several more significant regions where the plague pathogen apparently survives even during depressed phases of focus activity.

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1/2 028 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--FUNCTIONAL AND STRUCTURAL PECULIARITIES OF TRANSPORT RNA IN BIOSYNTHESIS OF PROTEIN WITH SOME PHYSIOLOGICAL STATES OF ANIMALS -U-

AUTHOR-(05)-MATSUKA, H.KH., BABIY, T.P., SKVIRSKA, YE.B., KOVALENKO, M.Y., ELSKA, A.V.

COUNTRY OF INFO--USSR

SOURCE--UKRAYNS'KIY BIOKHIMICHNIY ZHURNAL, 1970, VOL 42, NR 2, PP 217-226

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RNA, PROTEIN SYNTHESIS, PHENYLALANINE, GLAND, HIBERNATION, LIVER, RABBIT, RAT, AMINO ACID, MANGANESE, CALCIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1529 STEP NO--UR/0430/70/042/002/0217/0226

CIRC ACCESSION NO--AP0106283

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--020CT70

2/2 028

CIRC ACCESSION NO--AP0106283

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TRANSPORT RNA MANIFEST FUNCTIONAL AND STRUCTURAL PECULIARITIES AT THE CORRESPONDING PHYSIOLOGICAL STATES OF AN ORGANISM WHEN CONSIDERABLE QUALITATIVE AND QUANTITATIVE CHANGES OCCUR IN PROTEIN BIOSYNTHESIS. THESE PECULIARITIES ARE MANIFESTED IN THE FOLLOWING. THE AMOUNT OF ISOACCEPTOR LEUCIN T-RNA CHANGES IN THE MAMMARY GLAND. ONE FRACTION OF LEUCIN T-RNA REMAINS ISTEAD OF TWO WITH TRANSITION FROM THE LACTATE STATE INTO THE INVOLUTION. BESIDES, THE QUANTITATIVE RATIOS OF SUCH RNA AS GLUTAMINIC AND PHENYL ALANINE IS CHANGED IN THE LACTIC GLAND WITH THE BEGINNING OF THE SYNTHESIS OF MILK PROTEINS. GOPHERS, BEING AT THE STATE OF HIBERNATION, THE AMOUND OF GLYZINE ISOACCEPTOR T-RNA OF LIVER DECREASES FROM THREE UP TO TWO IN COMPARISON WITH THE ANIMALS AT THE STATE OF VIGIL. IN RABBITS UNDER CONDITIONS OF STARVATION SUCH T-RNA AS PHENYL ALANINE, GLYCINE, METHIONINE, LYSINE, LEUCINE AND TYROSINE IS CONSIDERABLY LOWER THE ABILITY TO ACCEPTATE AMINO ACIDS. THE SAME IS SHOWN IN EXPERIMENTS WITH METHIONINE T-RNA OF RAT LIVER. THE RESULTS OBTAINED TESTIFYING IN FAVOUR OF THE FACT THAT DECREASE OF ACCEPTOR ACTIVITY OF T-RNA WITH STARVATION IS A RESULT OF POSSIBLE CONFORMATION CHANGES IN MOLECULE OF T-RNA. IT IS ESTABLISHED THAT THE LOST ACCEPTOR ABILITY OF T-RNA OF FASTENED RABBITS AND RATS IS ALMOST COMPLETELY RESTORED AFTER HEATING OF T-RNA IN THE PRESENCE OF MAGNESIUM IONS. BESIDES, TYROSINE T-RNA OF RABBIT LIVER RESTORES ITS ACCEPTOR PROPERTIES WITH HEATING OF T-RNA IN THE PRESENCE OF MANGANESE AND CALCIUM IONS.

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Acc. Nr: AP0047314 Ref. Code: UR 0300

PRIMARY SOURCE: Ukrayns'kiy Biokhimichniy Zhurnal, 1970, Vol 42, Nr 1, pp 24-27

ON POSSIBILITY OF EXISTENCE IN ANIMAL TISSUES OF DIFFERENT CONFORMATION FORMS OF t-RNA DIFFERING BY ABILITY TO ACCEPT AMINO ACIDS

G. Kh. Matsuka, T. P. Baby, E. B. Skvirskaya, M. I. Kovalenko, V. I. Semenikhin

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Summary

The transfer RNA of the liver of fastened rabbits loose partially the ability to accept such amino acids as tyrosine, leucine, methionine and glycine. A momentary heating of t-RNA in the presence of magnesium ions favours to a considerable extent the reduction of the lost ability of t-RNA to accept the mentioned amino acids. The analogous results are obtained when studying t-RNA of the rat liver in the experiments with menthionine. It is possible to suppose that tyrosine, methionine, leucine and glycine t-RNA and, probably, other, during the fasting of animals, are available in the liver in a changed conformation form, to which a low biological activity is peculiar.

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USSR

UDC 577.1:547.963.3:542.91

MATSUKA, G. Kh.

"The Participation of Transport Ribonucleic Acids in the Processes of Regulation of Protein Biosynthesis"

Abstract: This article gives a review of the literature on the participation of RNA in the processes of regulation of protein biosynthesis on the level of transcription and translation.

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