"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR

UDC 539.3:534.1

MANEVICH, A. I., DEMESHKO, M. F., KRASOVSKIY, V. L., KUCHERENKO, V. M.

"Experimental Study of the Stability of Longitudinally Fastened Cylindrical Shells Under Axial Compression"

V sb. Raschet prostranstv. konstruktsiy (Calculation of Three-Dimensional Structures -- Collection of Works), No. 14, Moscow, Stroyizdat, 1971, pp 87-102 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9V319)

Translation: Tests of 48 cylindrical shell models are reported. The shells were reinforced with stringers of open profile and the purpose of the test was to study the effect of the positioning of the ribs on the stability under axial compression. The shells and stringers were made of Kh18N9-n steel. In the case of shells with high critical stress (small lengths, "strong" ribs) there is noted a considerable deviation from structural-orthotropic theory especially under external positioning of the ribs (up to 40-50%). The effect of the sign of the eccentricity is emphasized, however, quantitatively considerably less than the theoretical effect. It was observed that with internal stringers the deformation curve may have an

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USSR

MANEVICH, A. I., et al, Raschet prostranstv. konstruktsiy, No. 14, Moscow, Stroyizdat, 1971, pp 87-102

ascending character after the bifurcation point. The varying nature of the loss in stability of shells of both types is noted. Analysis of the nature of the bulging and tensometric measurements showed that the deviation between theory and experiment in this range of parameters is basically associated with the characteristics of the mechanism for the loss of stability of shells with ribs of open profile not described by existing theories. To reform the theory it is necessary to take into account the mutual relationship between the bulging of elements of the shells and the entire shell. A computation scheme should include the possibility of bending of the walls of the ribs in the plane of least rigidity and also account for the redistribution of stresses in the skin and stringers after local bulging of the skin. Authors abstract.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR UDC: 621.385.001.5

ZYKOVA, Ye. G., KUCHERENKO, Ye. T., YUDINSKAYA, I. V.

"Operation of Pressed Cathodes in Helium-Neon Lasers"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972, pp 115-117

Abstract: The operation of pressed cathodes based on barium scandate and refractory metal was studied in OKG-11 helium-neon lasers. A comprehensive investigation was made of the variation in gas composition, electron temperature in the discharge plasma, and cathode emission during the service life of the device. It is shown that conditions for laser emission remain unchanged over a period of 1600 hours of operation. In this connection, the cathode can operate at a temperature approximately 100°C lower than what is considered nominal under vacuum conditions (1070°C [brightness temperature]). Two illustrations bibliography of six titles.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR UDC 531.383

KUCHERKOV, S. G., Leningrad Institute of Precision Mechanics and Optics

"Concerning the Influence of the Degree of Perturbation Irregularity Upon the Error of a Physical Pendulum"

Leningrad, Priborostroyeniye, No 1, 1971, pp 85-88

Abstract: The article deals with the influence of the degree of irregularity of a perturbation, which has a rather narrow-band frequency spectrum, upon the standard dispersion of the errors of an oscillatory system such as a physical pendulum. It is shown that the character of this influence is determined by the relationship of the frequency properties of the system and by the spectral characteristics of the perturbation. Under definite conditions, an increase of the error dispersion can take place when the degree of perturbation irregularity increases. 3 figures, 1 bibliographic entry.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR UDC: 621.396.967

KUCHEROV, A. S., KRUCHENETSKIY, V. Z., MOLCHANOV, A. N., ZUEMCHOV, M. A.

"Doppler Shift Imitator on an Intermediate Frequency"

Tr. Novosib. elektrotekhn. in-ta (Works of the Novosibirsk Electrical Engineering Institute), 1970, vyp. 2, kn. 1, pp 39-47 (from RZh-Radiotekhnika, No 6, Jun 70, Abstract No 6G46)

Translation: The authors consider a method of simulating the Doppler shift on intermediate frequencies by means of phase-variable circuits. The signal spectrum at the output of the imitator is determined by the amplitude of the phase shift during the sawtooth voltage period. The minimum phase lead for obtaining a monochromatic signal is equal to 2π. The proposed method permits variation of the Doppler frequency over a broad range without disrupting signal monochromaticity. Five illustrations, bibliography of two titles. A. M.

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USSR

K

KUCHEROV, I. YA., OSTROVSKIY, I. V., Kiev State University imeni T. G. Shevchenko

"The Interaction of Transverse Ultrasonic Waves With Charge Carriers in Piezo Semiconductor Plates"

Leningrad, Fizika Tverdogo Tela, Vol 12, No 6, June 1970, pp 1686-1692

Abstract: A solution is provided to the problem of the interaction of charge carriers with transverse ultrasonic waves which propagate along direction /100/ in a piezo semiconductor of C_{6v} symmetry. Research in this field has up to now not been published; therefore, in the article theoretical and experimental research on the influence of conductivity and drift fields on the propagation of transverse waves in plates of crystals with a symmetry of C_{6v} has been carried out (the problem is solved without account being taken of the diffusion of the charge carriers; the experiment was carried out on the basis of CdS). Dispersion equations are obtained, and from them 1/2

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USSR

KUCHAROV, I. YA., et al, Fizika Tverdogo Tela, Vol 12, No 6, June 1970, pp 1686-1692

the attenuation of the ultrasonic waves in the first approximation is found on the basis of the square of the coefficient of electromechanical coupling. For transverse waves in plates the attenuation may be represented in the form of a product from an analogous expression for a limitless crystal and a value A, which depends on the parameters of the plates, the frequency, and the drift fields. Far from the points of origination of nonzero modes (when the phase velocity of the waves v approaches the velocity of the transverse waves in a boundless crystal v_t) A approaches 1. Close to the point of origination $A \simeq v/v_t$. For a null symmetrical mode A may change from zero to unity. A comparison of the theoretical results with the experimental ones is made. The experiment was performed on CdS plates. The experimental and theoretical details on electron attenuation are in satisfactory agreement, while the data on the dependence of attenuation upon the drift fields agree only qualitatively.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

Measuring, Testing, Calibrating

USSR

KOVALENKO, B. I., KUCHEROV, L. M., and PRONIN, B. N.

"Bench for Comprehensive Testing of Underwater Lifting and Lowering Device for Conducting Oceanographic and Ichthyologic Research"

USSR Authors' Certificate No 356502, Cl. G 01m 1/04, filed 10 Nov 70, published 23 Oct 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, 1972, p 114)

Abstract: The bench contains a mock-up container with clamps, suspended on the arm of a vertical beam, a cargo winch and a loading winch with barrels and pull ropes. In order to make the bench tests approximate marine tests as much as possible, the barrel of the loading winch is supplied with a constant-torque friction clutch with a motor and is made in the form of a truncated cone, and the mock-up container is made with a center opening, through which is passed the pull rope of the cargo winch, which is connected by a quick-release coupling to the pull rope of the loading winch.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR UDC 547.728.2'83.07

KUCHEROV, N. F., AKSANOVA, L. A., SHARKOVA, L. M., and ZAGOREVSKIY, Institute of Pharmacology, USSR Academy of Sciences, at Moscow

"Synthesis of Derivatives of a New Heterocyclic System of 1,2,3,4-Tetrahydrobenzofuro[3,2-c]pyridine"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 11, Nov 71, pp 1469-1472

Abstract: Even though 1,2,3,4-tetrahydro-γ-carboline and its derivatives have been the objects of pharmaceutical research for some years, their oxygenous analogs, the 1,2,3,4-tetrahydro[3,2-c]pyridines, have so far not been synthesized. Using the fairly new method of creating a benzofuran system by cyclization of aryl esters of the ketoximes, the authors synthesized a tricyclic system of thiopyrano[4,3-b]benzofuran. Melting points, empirical formulas, compositions and yields of nine oxime esters and seven of the above-mentioned pyridines were determined.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR UDC 911.3.616.981.452(574)

LAVROVSKIY, A. A., KUCHEROV, P. M., OPTYAKOVA, A. F., ROZHKOV, A. A., DEREVYANCHENKO, K. I., MATSUGA, V. G., BAKHTIGOZIN, I. A., ROZHKOV, A. A., CHIKRIZOV, F. D., KARUSHIN, P. 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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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR

ALAKSANDROV, V. M. and KUCHEROV, V. A. (Rostov-on-Don)

"Orthogonal Polynomial Method in Plane Combination Problems of Elasticity Theory"

Moscow, Prikladnaya Matematika i Mekhanika, Vol 34, No 4, 1970, pp 643-652

Abstract: The basis of the orthogonal polynomial method, widely used in investigating problems in the theory of elasticity, is the reduction of the combination problem to the solution of an integral equation of the first kind, an examination of the region of variation of the dimensionless parameters in the kernel of the integral equation, and the separation of the chief part of the kernel corresponding to the chosen region of variation of the parameters. Eigenfunctions are found for the integral operator corresponding to the chief part, these functions being a system of classical orthogonal polynomials. The known function in the righthand member of the integral equation and the solution are arranged in series in terms of these polynomials, and the regular part of the kernel is arranged in a double series. The integral equation then reduces easily to an infinite algebraic system of equations. The matrix of the finite system obtained in a shortening of the infinite system, explained in detail in the article, is almost triangular to permit a solution to the problem. The authors express their gratitude to G. Ya. Popov for his assistance.

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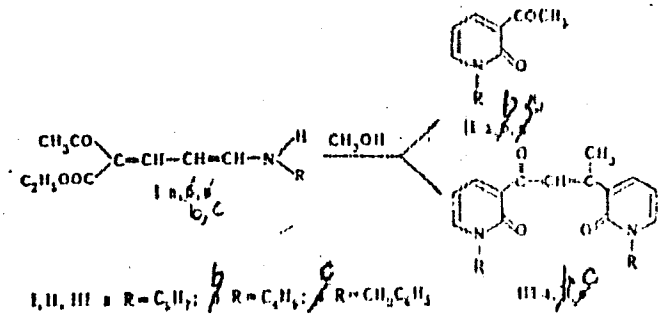
USSR UDC 547.821.2'824.07:543.422.25

KRASNAYA, ZH. A. STYTSENKO, T. S., PROKOF'YEV, YE. P., and KUCHEROV, V. F., Institute of Organic Chemistry imeni N. D. Zelinskogo, Academy of Sciences USSR

"Synthesis of the Derivatives of N-substituted Pyridones Based on Diene Monoalkylaminoketo Esters"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, 5, May 1973 pp 668-675

Abstract: Syntheses are described based on the following reaction:



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USSR

KRASNAYA, ZH. A., et al., Khimiya Geterotsiklicheskikh Soyedineniy, 5, May 1973, pp 668-675

The δ-monoalkylaminoketoesters (I) dissolved in methanol at room temperature react thru ring closure to give an 80% yield of an easily separated mixture of 1-alkyl-3-acetylpyrid-2-one (II) and the dimer 1,3-bis[3-(1-alkylpyrid-2-onyl)]-2-buten-1-one (III). Yields, experimental conditions, UV and extensive NMR data are given. Additional reactions are given, such as IIc + Ib $\rightarrow$ IIIb + dimers where the two R groups are not the same; Ib+$C_6H_5CCCH_3$ $\rightarrow$ mixed -R dimers; and I+II $\rightarrow$ dimers containing IR from each compound. The % water in the methanol changes the ratios of products II & III, II increasing with increasing H_2O.

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Nitrogen Compounds

USSR

UDC 542.91:547.362

M
NAVROV, M. V., VOSKANYAN, E. S., SEVERINA, T. A., and [redacted]
Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences
USSR

"Synthesis of Diacetylenic Hydroxyamines"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, 1971,
pp 1088-1091

Abstract: Several new types of polyfunctionally substituted diacetylenes were synthesized by the condensation of 4-hydroxy-3-alkyl(or dialkyl) amino-butynes-1 with different bromoacetylenes under Kadio-Khodkevich conditions. The highest yields of the desired products (70-90 percent) were obtained when (Ia) was condensed in methanol solution in the presence of catalytic amounts of Cu_2Cl_2, and in an aqueous solution of ethylamine with a 1.5-2 fold excess of the corresponding bromoacetylenic compounds at temperatures not higher than -10°. Infrared spectra of these compounds contain absorption bands in the 2200-2260 cm^{-1} region. They are of moderate intensity corresponding to the conjugated substituted diacetylenic group. Also found in the spectra are absorption bands corresponding to the bond vibrations of the functional groups.
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USSR

MAVROV, M. V., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No'5, 1971, pp 1088-1091

After exhaustive catalytic hydrogenation in alcoholic solution in the presence of a Pt-catalyst, diacetylenic hydroxylamines readily absorb 4 moles of H_2 (forming previously unknown aliphatic hydroxylamines (III). No other synthetic pathways were known for these products.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--MECHANISM OF THE CONVERSION OF ALPHA, BETA UNSATURATED ALDEHYDES INTO ESTERS OF SATURATED ACIDS UNDER THE ACTION OF CYANOHYDRINS IN THE

AUTHOR-(03)-SHAKHIDAYATOV, KH., YANOVSKAYA, L.A., KUCHEROV, V.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 581-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALDEHYDE, CYANIDE, TERTIARY AMINE, DEUTERIUM COMPOUND, MASS SPECTRUM, PROPIONIC ACID, ESTER, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0745 STEP NO--UR/0062/70/000/003/0581/0586

CIRC ACCESSION NO--AP0124415

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

2/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124415

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING ME SUB2 C(CN)OH WITH O SUB2 O 3-5 DAYS GAVE A PRODUCT CONTG. SOME 40PERCENT D AND REPEATED OPERATION GAVE THAT PRODUCT CONTG. SOME 60PERCENT D, WHILE A 3RD OPERATION GAVE PRODUCT (I) WITH SOME 80PERCENT D CONTENT. THIS AND PHCH:CHCHO IN THE PRESENCE OF ST SUB3 N GAVE 55PERCENT DEUTERATED PRODUCTS B SUB0.4 107DEGREES, CONTG. 35PERCENT ALPHA,D, 39PERCENT ALPHA,ALPHA,D SUB2, IS SMALLER THAN 7PERCENT ALPHA,BETA,D SUB2, AND SIMILAR TO 19PERCENT ALPHA,ALPHA,BETA,D SUB3 ANALOGS OF ACETONECYANOHYDRIN ESTER OF 3,PHENYLPROPIONIC ACID, AS DETD. FROM THE MASS SPECTRUM. SIMILAR REACTION WITH PHCH:CMECHO GAVE 50PERCENT MIXED PRODUCT CONTG. 87PERCENT ALPHA,D, 13PERCENT ALPHA,ALPHA AND ALPHA,BETA,D SUB2 ANALOGS OF ACETONECYANOHYDRIN ESTER OF 2,METHYL,3,PHENYLPROPIONIC ACID. REACTION OF I WITH PHENYLPROPARGYL ALDEHYDE SIMILARLY GAVE 35PERCENT MIXED DEUTERATED PRODUCTS CONTG. 46PERCENT A,CIS,D, 45PERCENT ALPHA,TRANS,D, 9PERCENT BETA,D (6PERCENT TRANS AND 3PERCENT CIS) ANALOGS OF ME CINNAMATE. I AND CROTONALDEHYDE GAVE 41PERCENT CROTONALDEHYDE CYANOHYDRIN, B SUB12 85-90DEGREES, N PRIME20 SUBD 1.4442. THE REACTION MECHANISM WAS DISCUSSED. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSXOW, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

1/2 012 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--CONSTRUCTION OF A GAS LIQUID CHROMATOGRAPH FOR ANALYZING LOW STABILITY AND DIFFICULTLY SOLATILIZABLE COMPOUNDS -U-

AUTHOR--RUDENKO, B.A., KUCHEROV, V.F., YUFIT, S..S

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(1), 109-11

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GAS CHROMATOGRAPHY, ACETAL, ACETYLENE HYDROCARBON, CHEMICAL LABORATORY APPARATUS, ESTER, CHEMICAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0240 STEP NO--UR/0032/70/036/001/0109/0111

CIRC ACCESSION NO--AP0106896

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

2/2 012 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106896

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GAS LIQ. CHROMATOGRAPH, CONSTRUCTED FOR THE ANAL. OF LOW STABILITY AND HIGH,B.P. COMPDS. SUCH AS ACETALS, ORTHOESTERS, POLYALKOXY, POLYENIC, AND POLYACETYLENIC COMPDS., IS DESCRIBED. THE VAPORIZER, THE COLUMN, AND THE COMMUNICATION SYSTEM IS MADE OF GLASS. THE LENGTH OF THE COLUMN CAN BE VARIED FROM 20 TO 350 CM. THE APP. IS EQUIPPED WITH A FLAME IONIZATION DETECTOR MADE ALSO OF GLASS WITH THE ELECTRODES MADE OF PT OR NI. THE DETECTOR SENSITIVITY WAS 10 PRIME4 TO 10 PRIME5 MV ML-MG.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--REACTION OF CYANOHYDRINS WITH POLYENE AND ENYNE ALDEHYDES IN THE PRESENCE OF TRIETHYLAMINE -U-

AUTHOR-(03)-SHAKHIDAYATOV, KH., YANOVSKAYA, L.A., KUCHEROV, V.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 665-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALDEHYDE, CARBOXYLIC ACID ESTER, ACETONE, CYANIDE, TRIETHYLAMINE, EXOTHERMIC REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1786 STEP NO--UR/0062/70/000/003/0665/0667

CIRC ACCESSION NO--AP0123583

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

2/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123583

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SORBALDEHYDE AND ME SUB2 C(CN)OH IN THE PRESENCE OF ET SUB3 N 1 HR GAVE 53PERCENT ACETONE CYANOHYDRIN ESTER OF 3,PENTENECARBOXYLIC ACID, B SUB0.4 80-2DEGREES, AND 21PERCENT 1,CYANO,3,5,HEPTADIEN,2,YL 3,PENTENECARBOXYLATE, B SUB0.4 98-100DEGREES. THE FORMER AND 5N KOH GAVE 70PERCENT 3,PENTENECARBOXYLIC ACID, B SUB30 115DEGREES. 5,PHENYL,2,4,PENTADIEN,1,AL AND ME SUB2 C(CN)OH IN THE PRESENCE OF ET SUB3 N GAVE AFTER AN EXOTHERMIC REACTION 11PERCENT ACETONE CYANOHYDRIN ESTER OF 3,STYRYLPROPANOIC ACID, M. 35.5-6.5DEGREES. THE SAME REACTION RUN IN ETOH GAVE 55PERCENT ET 3,STYRYL,PROPANOATE, B SUB0.7 103-5DEGREES; FREE ACID M. 87.5-89DEGREES. SIMILARLY, 5,CARBETHOXY,2,4,PENTADIEN,1.AL AND ME SUB2 C(CN)OH GAVE 56PERCENT DI ET DELTA PRIME1,2 DIHYDROMUCATE, B SUB0.5 88-90DEGREES; SIMILARLY WAS PREPD. 83PERCENT DELTA PRIME1,2 DIHYDROMUCONIC ACID, M. 167.5-8.5DEGREES. 2,4,6,OCTATRIEN,1,AL AND ME SUB2 C(CN)OH WITH ET SUB3 N IN ETOH GAVE 41PERCENT ET 4,6,OCTADIENOATE, B SUB0.85 90-1DEGREES; 7,PHENYL,2,4,6,HEPTATRIEN,1,AL GAVE 40PERCENT ET 7,PHENYL,4,6,HEPTADIENOATE, B SUB0.04 130-5DEGREES; 4MIXED ET 2,3,CIS AND 2,3,TRANS,4,METHYL,2,4,PENTADIENOATES, B SUB17 68-70DEGREES.

FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

UNCLASSIFIED PROCESSING DATE--11DEC70

1/2 006

TITLE--THIOCYANATION OF DELTA PRIME4 CYCLENE,1,2,DICARBOXYLIC ACIDS AND THEIR DIESTERS: NATURE OF THE SUPRAANNULAR EFFECT -U-

AUTHOR-(02)-SEREBRYAKOV, E.P., KULCHEROV, V.F.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 950-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DICARBOXYLIC ACID, ESTER, THIOL, LACTONE, ISOMER, MOLECULAR STRUCTURE, CYANATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1329 STEP NO--UR/0366/70/006/005/0950/0955

CIRC ACCESSION NO--AP0135003

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

2/2 008 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0135003

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF SYN,CIS DELTA PRIME4 OCTALIN,1,2,DICARBOXYLIC ACID (I) WITH (SCN) SUB2 (FORMED BY THE ACTION OF BR CN PN(SCN) SUB2) GAVE IN 20 MIN 43PERCENT 4 ALPHA THIOCYANATO,10 BETA HYDROXY,(9 ALPHA H),DECALIN,1 BETA,2 BETA,DICARBOXYLIC ACID 1,10,LACTONE (II). THE SYN,TRANS AND ANTI TRANS ISOMERS OF I DID NOT REACT. THE REACTION OF DI,ME ESTER OF I WITH (SCN) SUB2 GAVE 2 ISOMERS OF DI,ME 4,10,DICYANATO,DECALIN,1,2,DICARBOXYLATE AND THE ME ESTER OF II. THE SYN,TRANS AND ANTI,TRANS DIESTER ISOMERS OF I DID NOT REACT WITH (SCN) SUB2. THESE REACTIONS DO NOT REQUIRE THE EXISTANCE OF SUPRAANNULAR EFFECT. (G. P. KAGATOVA SHEMIAKINA, ET AL. 1967). FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

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USSR UDC: 661.143

TVERDOKHLEB, I. G., SAMINSKIY, L. A., ZAYDEL', I. N., KUCHEROV, V. G.

"A Photochemical Method of Making Fine-Structured Screens With the Use of Centrifuging"

Sb. nauch. tr. VNII lyuminoforov i osobo chist. veshchestv (Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Extra Pure Materials), 1971, vyp. 5, pp 119-124 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7L179)

Translation: The paper presents the results of a study of fine-structured screens made by photographic exposure of coatings deposited by centrifuging from a suspension of a luminescent composition in a solution of surface-active agent with subsequent application of an organic film on acrylate lacquer by using centrifugal forces before aluminizing. The surface-active agent and organic film are removed from the screen by heating in air. The method [illegible] a higher technological yield and improves the resolution of the [illegible] compared with the conventional method of making screens. [illegible] mechanized and shortens the duration of the technological process. [illegible] can be recommended for use in serial production. [illegible]

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USSR UDC 632.95

BABINA, Yu. K., KUCHEROVA, A. I.

"Methods of Determination of Chlorofos and DDVP in Technical Products"

Probl. analit. khimii [Problems of Analytic Chemistry -- Collection of Works], Vol 2, Moscow, Nauka Press, 1972, pp 14-17 Translated from Referativnyy Zhurnal Khimiya, No 24(II), 1972, Abstract No 24N580, by T. A. Belyayeva)

Translation: A potentiometric method is suggested for determination of chlorofos (I) and impurities in technical products and a conbined method is suggested for determination of the composition of technical DDVP, including potentiometric determination of I and spectrophotometric determination of the sum of I plus DDVP. Potentiometric determination of I and its impurities in technical products is performed in alcohol, the titrant is a 0.5 N solution of KOH in ethanol or a 0.5 N aqueous solution of NaOH. The sum of I plus DDVP is determined using their capability to stain complexes with acetone in an alkaline medium (λ(max) 370 mμ). The maximum stain is developed after two hours standing at 25°. To confirm the qualitative composition of technical I and DDVP, the method of TLC on SG in the $CHCl_3$-MeOH system (9:1) is used.

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USSR UDC 547.582+546.185

RUDAVSKIY, V. P., and KUCHEROVA, M. N.

"Phosphorylized Derivatives of Trichloroacetic Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 4, 1972, pp 797-801

Abstract: The title compounds were prepared in order to study these new physiologically active compounds which are being used as herbicides. Compounds of the general types $CCl_3CON = PX_3$ and $CCl_3CONHPOX_2$ were obtained where X was a substituted phenyl group linked to the P through O, S, or N. The compounds were readily soluble in alcohol, acetone, dioxane, and benzene; and slightly soluble in ether and petroleum ether.

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USSR UDC 632.95

RUDAVSKIY, V. P., KUCHEROVA, M. N., KONDRATENKO, V. I., LITOSHENKO, N. A., and BABIN, Ye. P.

"Synthesis of Acylphosphazo Compounds"

USSR Author's Certificate No 316694, filed 10 Jun 68, published 27 Jan 72 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom (I, L-S), No 1(II), 1973, Abstract No 1N505P by T. A. Belyayeva)

Translation: Compounds RC(X)N = P(OOCR')YZ (I) (R = alkyl, alkyl halide, phenyl halide; X = O, NPh, NEt, NC_6H_4Me; R' = alkyl, alkyl halide, phenyl halide; Y and Z = Cl or OOCR') and (R'''COO)$_3$P = NOCR''CON = P(OOCR''')$_3$ (II) (R'' = alkylene halide; R''' = alkyl, alkyl halide, phenyl halide) are synthesized in reaction of corresponding trichloro- and bistrichlorophosphazo compounds (III) with carbonate in organic solvent. The reaction is terminated by boiling of the reaction mixture. Example. To 0.03, 0.06, or 0.09 mole R'COOM (M = Na or K) in 30 ml of organic solvent 0.03 mole RCON = PCl_3 is added during continuous stirring and cooling with ice water. The reaction mixture is boiled for 8-10 hrs on water bath, kept at 20°C for 6 hrs, MCl is removed by filtration and the remained mass is concentrated by evaporation. The obtained viscous liquid (I) (X = O) is purified by multiple precipitation from C_6H_6 or PhMe with petroleum ether. Using III, compounds II are prepared in a similar way. I and II can be used as herbicides.

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UDC 547.582:546.185

RUDAVSKIY, V. P., SEDLOVA, L. N., and KUCHEROVA, M. N.

"Phosphorylated Derivatives of Fluobenzoic Acid Amides"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 5, May 72, pp 972-976

Abstract: It was found that: 1. Trichlorphosphazofluoroacyls react with phenols and thiophenols in the presence of triethylamine, to form triamido- and triphenoxy (trithiophenoxy) phosphazofluoroacyls; 2. Fluorobenzoylamidophosphoryl dichlorides react with amines, alcohols and phenols in the presence of triethylamine to form diamides and diesters of fluorobenzoylamidophosphoric acids; 3. Phosphorus pentachloride reacts with fluorobenzoylamidophosphoryl dichlorides, to form N-dichlorphosphonyliminofluorobenzoyl chlorides which form N-diamidophosphonyl-N'-arylfluorobenzamidines with amines.

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UDC: 546.185

RUDAVSKIY, V. P., KUCHEROVA, M. N.

"Trichlorophosphazo-N-Aryl Iminotrichloroalkoyls"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1288-1290

Abstract: It was found that N-aryltrichloroalkylamidines react with phosphorus pentachloride or with phosphorus trichloride and chlorine to form trichlorophosphazo-N-aryliminotrichloroalkoyls.

$$RC(=NAr)NH_2 \xrightarrow[PCl_3 + Cl_2]{PCl_5} 2HCl + RC(=NAr)N=PCl_3$$

$$R = CCl_3,\ CH_2ClCCl_2.$$

When three moles of phosphorus pentachloride was reacted with N-1-p-nitrophenyl-1,3-propanediol trichloroacetamidine, trichlorophosphazo-N-1-p-nitrophenyl-1,3 dichloropropane iminotrichloroacetyl was formed.

$$CCl_3C[=NCH(CH_2OH)CHOHC_6H_4NO_2\text{-}n]NH_2 \xrightarrow{3PCl_5} 4HCl + 2POCl_3 +$$
$$+ CCl_3C[=NCH(CH_2Cl)CHClC_6H_4NO_2\text{-}n]N=PCl_3$$

Trichlorophosphazo-N-aryl iminotrichloroalkyls readily react with anhydrous formic acid or water to give N-dichlorophosphonyl N'-aryl trichloroalkylamidines which, upon subsequent hydrolysis, yield N-phosphono-N'-aryl trichloroalkylamidines.

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RUDAVSKIY, V. P. and KUCHEROVA, M. N., Zhurnal Obshchey Khimii, Vol 42(104) No 6, Jun 72, pp 1288-1290

$$RC(=NAr)N=PCl_3 \xrightarrow[\text{или } H_2O]{HCOOH} RC(=NAr)NHPOCl_2 \xrightarrow{H_2O} RC(=NAr)NHPO(OH)_2$$

Trichlorophosphazo-N-aryl iminotrichloroalkoyls, N-dichlorophosphonyl N'-aryl trichloroalkylamidines and N-phosphono-N'-aryl trichloroalkoyl amidines are crystals or thick liquids which dissolve readily in acetone, dioxane and benzene, and dissolve with difficulty in ether and petroleum ether.

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USSR UDC 547.26.118.07

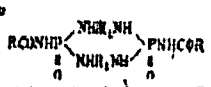
RUDAVSKIY, V. P., KUCHEROVA, M. N., and SEDLOVA, L. N.

"A Method of Synthesizing Derivatives of Cyclic Amides of Phosphoric Acid"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 17, 1971, Author's Certificate No 304256, Division C, filed 8 Dec 1969, published 25 May 1971, pp 85-86

Translation: This Author's Certificate introduces: 1. A method of synthesizing derivatives of cyclic amides of phosphoric acid of the general formulas

or



where R is a halogen-substituted phenyl or alkyl, and R_1 is an alkylene or phenylene. As a distinguishing feature of the patent, a diamine is interacted with a phosphoric acid chloride of the formula:

$$RCON{=}PCl_3 \text{ или } RCONHP(O)Cl.$$

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RUDAVSKIY, V. P., et al., Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 17, 1971,

in the presence of an organic base in an organic solvent with subsequent isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that the process is carried out in the presence of an axcess of amino.

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USSR

UDC 632.954

RUDAVSKIY, V. G., KUCHEROVA, M. M., SHIRANKOV, D. F., and MAKOVETSKIY, P. S.
Ukrainian Agricultural Academy

"Herbicidal Activity of Some Halocarboxylic Acid Derivatives (Brief Communication)"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 6, 1971, p 53

Abstract: The authors prepared some halocarboxylic acid derivatives and studied their herbicidal activity under hothouse conditions. The herbicidal activity of the compounds are graded visually according to a 10-point system (0: no inhibition; 1-2: very weak inhibition; 3-4: weak inhibition; 5: medium inhibition; 6-7: strong inhibition; 8-9: very strong inhibition; 10: total plant destruction). The article tabulates the results.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR UDC 547.759.3'853.5

BORISOVA, L. N., KUCHEROVA, N. F., KARTASHOVA, T. A., and ZAGOREVSKIY, V. A., Institute of Pharmacology, Academy of Medical Sciences USSR, Moscow

"Indole Derivatives. 39. Fischer Cyclization of 3-Methylpiperidone-4-arylhydrazones"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 5, May 1972, pp 645-647

Abstract: Previous investigations have shown that Fischer cyclization of 3-substituted N-methylpiperidone-4-arylhydrazones follows an unusual course and results in the formation of 1,2,3,4-tetrahydropyrimido[3,4-a]indoles. The present study was initiated to determine the products formed by the condensation of 3-methylpiperidone-4 with arylhydrazines (containing -H, $-CH_3$, $-OCH_3$, or $-COOC_2H_5$ in the para position) in alcoholic HCl. On the basis of UV, IR, and PMR spectra the four products of the reactions were characterized as 5-methyl-1,2,3,4-tetrahydropyrimido[3,4-a]indole (I), 5,7-dimethyl-1,2,3,4-tetrahydropyrimido[3,4-a]indole (II), 5-methyl-7-methoxy-1,2,3,4-tetrahydropyrimido[3,4-a]indole (III), and 5-methyl-7-carbethoxy-1,2,3,4-tetrahydropyrimido[3,4-a]indole (IV). The structure of II was further confirmed through its conversion into 2,5,7-trimethyl-1,2,3,4-tetrahydropyrimido[3,4-a]indole via the intermediate 2-formyl-5,7-dimethyl-1,2,3,4-tetrahydropyrimido[3,4-a]indole. Furthermore, I, II, III, and IV may be dehydrogenated over palladium black to

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BORISOVA, L. N., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 5, 1972, pp 645-647

5-methylpyrimido[3,4-a]indole and 5,7-dimethylpyrimido[3,4-a]indole, i.e., forming a new heterocyclic system of pyrimido[3,4-a]indoles.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR UDC 547.759.3:543.422.25

NOVIKOVA, N. N., SILENKO, I. D., KUCHEROVA, N. F., and [illegible], [illegible] A., Institute of Pharmacology, USSR Academy of Medical Sciences, Moscow

"Indole Derivatives. XII. Cyclization of 1-R-2-(β-aminoisobutyl)indole With Cyclic Ketones"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 7, 1975, pp 942-944

Abstract: Experiments were conducted on the cyclization of 2-(β-aminoisobutyl)indole and 1-methyl-2-(β-aminoisobutyl)indole with several alicyclic and heterocyclic ketones in a mixture of absolute ethanol and benzene containing catalytic amounts of HCl. These reactions yielded imines or spirans of the 1,2,3,4-tetrahydro-γ-phenolic series.

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USSR UDC 547.759.3'728.2'821.07

SHARKOVA, N. M., KUCHEROVA, N. F., and ZAGOREVSKIY, V. A., Institute of Pharmacology, Academy of Medical Sciences USSR, Moscow

"Indole Derivatives. XL. Synthesis of Novel Condensed Indole Systems"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 8, Aug 72, pp 1075-1078

Abstract: Fisher reaction of 2-methyl-5-hydrazinobenzofurane, m.p. 187-188°, 2,3-dimethyl-5-hydrazinobenzofurane, m.p. 179.5-180°, and 2-methyl-8-hydrazinobenzofuro/3,2-c/pyridine, m.p. 121-122° with methylethyl ketone, methylpropyl ketone, cyclohexanone, 1-methylpiperidone-4, and tetrahydropyrone-4 yielded a series of novel condensed indoles. Following compounds were actually synthesized: 2-methyl-6,7,8,10-tetrahydrofuro/3,2-e/thiopyrano/4,3-b/indole, m.p. 188-190°; 2-methyl-6H-7,8,9,10-tetrahydrofuro/2,3-c/carbazole, m.p. 142-143°; 2,7,8-trimethyl-6H-furo/3,2-e/indole, m.p. 132-134°; 2,9-dimethyl-6H-7,8,9,10-tetrahydrofuro/3,2-e/pyrido/4,3-b/indole, m.p. 213-215°; 1,2-dimethyl-6,7,8,10-tetrahydrofuro/3,2-e/thiopyrano/4,3-b/indole, m.p. 230-232°; 2,11-dimethyl-8H-1,2,3,4,9,10,11, 12-octahydropyrido/3',4':4,5/furo/3,2-c/pyrido/4,3-b/indole, m.p. 255-257°; 2-methyl-1,2,3,4,9,10,11,12-octahydropyrido/3',4':4,5/furo/2,3-g/carbazole, m.p. 1/2

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SHARKOVA, N. M., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 8, Aug 72, pp 1075-1078

242-244°; 11-methyl-1,3,4,5,9,10,11,12-octahydropyrido[3',4',:4,5]furo[3,2-e]thiopyrano[4,3-b]indole, m.p. 250-252°; and 1,2,9-trimethyl-3H-7,8,9,10-tetrahydropyrido[3',4',:4,5]furo[3,2-e]indole hydrochloride, m.p. 290-292°.

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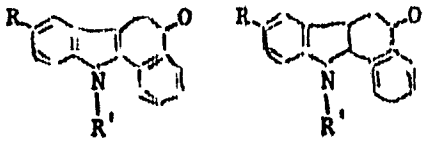
USSR UDC 615.31.547.75

AKSANOVA, L. A., SHARKOVA, L. M., KUCHEROVA, N. F., ARTEMENKO, G. N., and FEDOROVA, I. B., Scientific Research Institute of Pharmacology of the Academy of Medical Sciences of USSR, Moscow

"Indole Derivatives. XXXVI. Synthesis and Pharmacological Investigation of Some Benzoxepinoindole Derivatives"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 11, 1971, pp 3-5

Abstract: In searching for psychotropic agents several N-substituted dihydro- and tetrahydrobenzoxepinoindoles with sedative and antidepressant properties were synthesized.



I-II III

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AKSANOVA, L. A., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 11, 1971, pp 3-5

I $R' = H$; Ia $R = H$; Ib $R = CH_3$; Ic $R = Cl$; Id $R = Br$.

IIa $R = H$, $R' = (CH_2)_2N(CH_3)_2$; IIb $R = H$, $R' = (CH_2)_3N(CH_3)_2$;

IIc $R = CH_3$, $R' = (CH_2)_2N(CH_3)_2$; IId $R = CH_3$, $R' = (CH_2)_3N(CH_3)_2$;

IIe $R = Cl$, $R' = (CH_2)_2N(CH_3)_2$; IIf $R = Cl$, $R' = (CH_2)_2N(CH_3)_2$;

IIg $R = Br$, $R' = (CH_2)_2N(CH_3)_2$; IIh $R = Br$, $R' = (CH_2)_3N(CH_3)_2$.

IIIa $R = R' = H$; IIIb $R = CH_3$, $R' = H$; IIIc $R = H$, $R' = CO(CH_2)_2Cl$;

IIId $R = H$, $R' = COCH_2CH_2N(CH_2)_4CH_2$; IIIe $R = H$, $R' = CO(CH_2)_2N(C_2H_5)_2$.

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AKSANOVA, L. A., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 11, 1971, pp 3-5

Some compounds were prepared by the cyclization of corresponding arylhydrozons of homochroman-5-one (Ia-Id); others (IIa-IIh), by the reaction of dialkylaminoalkyl chlorides with Na derivatives of oxepinoindoles (Ia-Id). The latter were synthesized by treating oxepinoindoles (Ia-Id) with NaH in dimethylformamide. Reduction of oxepinoindoles Ia and Ib with Zn dust in HCl, in the presence of $HgCl_2$ yielded corresponding IIIa and IIIb. Reaction of IIIa with chloropropionyl chloride yielded IIIc which in turn formed IIId and IIIe on reaction with piperidine and diethylamine. Pharmacological tests for cholinolytic, antiserotouine and spasmolytic activity were carried out with white mice. Empirical formulas and melting points for IIb-IIh compounds are given, as well as detailed descriptions of some reactions.

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USSR UDC 547.751'891.1.07

SHARKOVA, L. M., AKSANOVA, L. A., and KUCHEROVA, N. F., Institute of Pharmacology, Academy Medicinal Sciences USSR, Moscow

"Indole Derivatives. XXXV. Synthesis of 12H-6,7-Hihydrobenz[2',3'] oxepino-[4,5-b]-indoles"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 71, pp 65-67

Abstract: Fisher condensation of 4,5-dihydro-1-benzoxepinone-5 (I) with various arylhydrazines was studied. It was determined that cyclization of (I) arylhydrazones is facilitated by introduction of electron donating substituents into the para position, the electron accepting substituents having the opposite effect. A mixture of 3 g of (I) and 2.7 g of p-tolylhydrazine hydrochloride was refluxed for 15 min in 30 ml of 15% alcoholic HCl, then poured into 120 ml water. The separated oil was triturated and recrystallized to give 9-methyl-12H-6,7-dihydrobenz[2,3']-oxepino-[4,5-b]-indole, m.p. 135--137°. A series of derivatives with varying substituents at 9 (and 8-9) position was obtained analogously. 9-(β-diethylaminoethoxycarbonyl)-12H-6,7-dihydrobenz-[2',3']-oxepino-[4,5-b]-indole and its 12H-benzyl analogue were tested for and found to be devoid of antiserotonin activity.

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1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--3,METHYL,9,BENZYL,1,2,3,4,TETRAHYDRO GAMMA CARBOLINE -U-

AUTHOR-(03)-KUCHEROVA, N.F., SHARKOVA, N.H., ZAGOREVSKIY, V.A.

COUNTRY OF INFO--USSR

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SOURCE--USSR 261,386

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--13JAN70

SUBJECT AREAS--CHEMISTRY, MISSILE TECHNOLOGY

TOPIC TAGS--ORGANIC SYNTHESIS, CHEMICAL PATENT, BENZENE DERIVATIVE, PHENOL, BENZYL CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1462 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128861

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2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0128861

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPD. IS PREPD. BY TREATING A SUSPENSION OF AN ALKALI METAL HYDRIDE, E. G. NA HYDRIDE, WITH A SOLN. OF 1,2,3,4,TETRAHYDRO-GAMMA-CARBOLINE IN HCONME SUB2. BENZYL CHLORIDE IS THEN ADDED TO THE REACTION MASS. FACILITY: INSTITUTE OF PHARMACOLOGY AND CHEMOTHERAPY, ACADEMY OF MEDICAL SCIENCES, USSR.

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USSR

UDC 616.932-08-036.8:612.013.1

NIKIFOROV, V. N., POKROVSKIY, V. I., BULYCHEV, V. V., MALEYEV, V. V., KUPRIYCHUK, A. B., KUCHEROVA, T. P., BALASHEV, V. I., KOL'YAKOVA, T. A., and VEVYUR, N. A., Scientific Research Institute of Epidemiology, Ministry of Health USSR

"Restoration of Homeostasis in Cholera Patients Receiving Rehydration Therapy"

Moscow, Sovetskaya Meditsina, No 9, 1971, pp 114-120

Abstract: Normalization of disturbances of homeostasis in cholera patients is achieved by careful monitoring of the effects of rehydration therapy. Various indices of homeostasis -- physicochemical properties of the blood, acid-base equilibrium of arterial and venous blood, clotting, etc. -- were investigated in 58 patients with Asiatic cholera before and during rehydration with the standard No 1 solution (5 g NaCl, 4 g $NaHCO_3$, and 1 g KCl per liter of apyrogenic water). The disturbance of homeostasis before treatment was marked by increased specific gravity of plasma, viscosity, and hematocrit and decreased volume of circulating plasma. Changes in the acid-base equilibrium and blood gases were manifested by signs of compensated respiratory alkalosis, metabolic compensated acidosis, and stagnant hypoxemia. Disruption of the movement of blood electrolytes was accompanied by decreased concentration of potassium,

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NIKIFOROV, V. N., et al., Sovetskaya Meditsina, No 9, 1971, pp 114-120

sodium, and chlorine. Fibrinolysis, clotting, recalcification, and heparin time increased while the prothrombin index and fibrinogen increased.

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UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 036

TITLE--LOW TEMPERATURE RELAXATION PHENOMENA IN RUBBER LIKE POLYMERS AT L DEFORMATION -U-

AUTHOR-(02)-BARTENEV, G.M., KUCHERSKIY, A.M.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 794-801

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL BONDING, LOW TEMPERATURE EFFECT, ACTIVATION ENERGY, RELAXATION PROCESS, DEFORMATION RATE/(U)SKMS30 RUBBER, (U)SKN26 RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1365 STEP NO--UR/0494/70/012/004/0794/0801

CIRC ACCESSION NO--AP0135969

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

2/2 036 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135659

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRESS STRAIN DIAGRAMS OF SKN 3[illegible] AND SKN 26 RUBBERS REVEALED A RELAXATION PROCESS CHARACTERIZED BY A LOW ACTIVATION ENERGY AND A DEPENDENCE OF RELAXATION TIME ON STRESS. THE KINETIC STRESS WAS A FUNCTION OF TEMP. AND APPROACHED 0 AT 40-60DEGREES. THE EFFECT WAS ATTRIBUTED TO ORDERED SUPRAMOL. DOMAINS WHICH FORMED AUXILIARY NONCHEM. BONDS THAT BROKE AT A CRIT. STRESS. FACILITY: MOSK. GOS. PEDAGOG. INST. IM. LENINA, MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

UNCLASSIFIED PROCESSING DATE--16OCT70

1/2 021

TITLE--HYSTERESIS LOSSES OF CARBON BLACK REINFORCED VULCANIZATES, AT LOW STRAINS -U-

AUTHOR-(02)-BARTENEV, G.M., KUCHERSKIY, A.M.

K

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 171-176

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CARBON BLACK, VULCANIZATE, MECHANICAL STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0393 STEP NO--UR/0069/70/032/002/0171/0176

CIRC ACCESSION NO--AP0113311

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 021

CIRC ACCESSION NO--AP0113311

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MECHANICAL LOSSES, RELATIVE RESIDUAL STRAIN AND STRESS OF CARBON BLACK REINFORCED BUTADIENE STYRENE VULCANIZATES PASS THROUGH A MAXIMUM WHEN PLOTTED VERSUS STRESS. THIS MAXIMUM IS ASSOCIATED WITH THE BREAKDOWN OF THE CARBON BLACK STRUCTURES AND AGGREGATES. THE KELVIN VOIGT MODEL CAN BE USED FOR A QUALITATIVE DESCRIPTION OF SOME STRAIN AND HYSTERESIS PROPERTIES OF CARBON BLACK REINFORCED VULCANIZATES AT CONSTANT STRAIN RATE.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

1/2 039 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--USE OF A TENSILE TESTING MACHINE WITH A PENDULUM FORCE MEASURING DEVICE FOR STUDYING CREEP IN RUBBER FABRIC COMPOSITE MATERIALS -U-

AUTHOR-(02)-KUCHERSKIY, A.P., GERKE, V.M.

K

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(2) 46-8

DATE PUBLISHED--------70

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

TOPIC TAGS--CREEP, MATERIAL TESTING EQUIPMENT, TENSILE STRENGTH, RUBBER, COMPOSITE MATERIAL, NATURAL FIBER, NYLON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1499 STEP NO--UR/0138/70/029/002/0046/0048

CIRC ACCESSION NO--AP0112493

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

UNCLASSIFIED PROCESSING DATE--02OCT70

2/2 039

CIRC ACCESSION NO--AP0112493

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A 5 TON TENSILE STRENGTH TESTER WAS EQUIPPED WITH AN ELECTRONIC TENSION REGULATOR AND USED IN CREEP (DELTA L) (L IS THE SAMPLE LENGTH) DETS. OF RUBBER CONVEYOR BELTS AND TRANSMISSION BELTS REINFORCED WITH COTTON (I) OR NYLON (II) WEBBING. THE SAMPLES WERE 1ST STRETCHED WITH A LOAD INCREASING AT 150-200 KG-MIN RATE TO A PREDETD. VALUE. THEREAFTER THE LOAD WAS MAINTAINED CONST. WHILE DELTA L WAS MEASURED WITH PLUS OR MINUS 1PERCENT RELATIVE ERROR. DELTA L OF I BELTING WAS APPROX. 0.5 TIMES DELTA L OF II BELTING AND THIS DIFFERENCE WAS ESTABLISHED AFTER SIMILAR TO 30 MIN TESTING AT CONST. LOAD.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

Acc. Nr: AP0036521

Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1, pp3-9

EFFECT OF AN ACTIVE FILLER ON THE STRAIN PROPERTIES OF BUTADIENE-STYRENE RUBBER VULCANIZATES

Bartenev, G. M.; Kucherskiy, A. M.

Summary

The effect of a filler on the shape of the strain curves of rubber upon elongation up to 30 % has been studied. The strain curve consists of an initial curvelinear section followed by a rectilinear one. The shape of the rectilinear section is almost independent of the filler nature, being determined by its volume fraction. The location level of the rectilinear section is determined by the carbon black bonds and structures, rising sharply when continuous carbon black structures are formed.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

Water Treatment

USSR UDC 541.083.2

MANK, V. V., KUCHERUK, D. D., Institute of Colloid Chemistry and Water Chemistry, Ukrainian Academy of Sciences, Kiev

"NMR Study of the State of Water in Cellulose-Acetate Semipermeable Membranes"

Moscow, Kolloidnyi Zhurnal, Vol 35, No 6, November-December 73, pp 1073-1077

Abstract: The location and form of the nuclear magnetic resonance (NMR) spectrum of the protons of water in cellulose acetate semipermeable membranes used for demineralizing water by reverse osmosis were shown to depend on the orientation of the membrane (parallel or perpendicular) in the magnetic field and the nature of the surrounding medium (air, C 7 H1 6, CCl 4, water). Ions of dissolved salts penetrate the pores of the membrane and exert an effect on the shift of the water in them. With an increase in the hydrating capacity of the cations (Mg, Ba, Li, Na, Al) and anions (Cl, F, CH_3COO), the NMR signal of water is more strongly displaced in a weak field. The ions K^+, Na^+, Rb^+, and Ba^{2+} increase and Ca^{2+}, Mg^{2+}, and Al^{3+} decrease the structural temperature of the solution in the pores. Since membranes have high selectivity for the latter group of ions, simple hydrate shells forming around these ions hinder their movement through the pores.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR UDC 616.988.25-022.395.42-084.4(470.51)

KUCHERUK, V. V., KORENBERG, YE. I., PANFILOVA, S. S., SHULEPOVA, T. G., SHIRNOV, A. V., and LEBEDEV, I. P., Laboratory of Medical Zoology, Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Sciences USSR, Moscow, and Republic Sanitary Epidemiological Station, Udmurt ASSR, Izhevsk

"Recent Results in the Control of Tickborne Encephalitis in the Udmurt ASSR"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 3, May/Jun 71, pp 275-283

Abstract: The annual incidence of tickborne encephalitis is high in the Udmurt ASSR. In some years, it was 18% of all recorded diseases. Data on the disease as it occurred from 1956 to 1965 were studied. The results of these studies led to a sharp reduction in incidence of the disease in the Udmurt ASSR. Statistical data on the disease level are presented in bar graphs for various regions over the 10-year period. Various forests in the area were characterized by their degree of epidemic danger, based on preliminary mapping of the occurrence and recurrence of infections. Subsequently, tick-extermination areas (amounting to 7% of the entire forest lands) were set aside and ticks eliminated by aerial spraying. Gamma-globulin prophylaxis and vaccination are recommended for the population living in areas in which tick eradication is difficult to achieve or impractical.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR UDC 595.323.4 Rhombomys: 591:9

DUBROVSKIY, YU. A., and KUCHERUK, V. V., Laboratory of Medical Zoology, Institute of Epidemiology and Microbiology, Academy of Medical Sciences USSR

"Spatial Distribution of the Great Gerbil Rhombomys opimus in Central Asia and Kazakhstan"

Moscow, Zoologicheskiy Zhurnal, No 2, 1971, pp 259-273

Abstract: An animal population is regarded as a grouping of the individuals of a single species capable of independent reproduction for an indefinite period of time. Associations of neighboring populations as well as parts of a single population lose some of the typical features of a population. Associations of great gerbil populations are of 5 kinds: (i) elementary parts of populations, i.e., animals mostly associated with a well-delineated area, (ii) populations, (iii) autonomous groups of populations, (iv) regional complexes of autonomous groups of populations, and (v) geographical units of species. The great gerbil's range is divided into Mongolian-Chinese, Iranian, and Central Asian-Kazakh. The latter, the most studied, consists of 11 regional complexes of autonomous population groups: Iliy, Balkhash, Betpakdalin-Muyunkum, Aral, Northeastern Caspian, Mangyshlak, Ustyurt, Turkmen, South-

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USSR

DUBROVSKIY, YU. A., and KUCHERUK, V. V., Zoologicheskiy Zhurnal, No 2, 1971, pp 259-273

eastern Karakum, Kyzyl Kum, and Karshin. The great gerbil typically inhabits the southern deserts and the transitional zone between the Southern and northern deserts.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR

UDC 621.777.07.001.5

GUN, G. Ya., POLUKHIN, P. I., YAKOVLEV, V. I., YUROV, Yu. V., KORITSKIY, G. M., PRUDKOVSKIY, B. A., and KUCHERYAYEV, B. V.

"Experimental Investigation of Speed Distribution During Pressing in Multi-channel Matrices"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 177-184

Translation: Results are given of experimental studies to determine the speeds of metal flow into a matrix with several channels, which form an established profile divided by crosspieces. Six figures and three tables.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

Heat Treatment

USSR

UDC 669.14.018.298:
:621.78:621.17

DOLOTOVA, T. S., KUCHERYAVYY, V. I., REVYAKINA, O. K., RYZHAK, S. S., SACHKOV, V. V., and UL'YANOVA, N. V., Moscow Higher Technical School imeni N. E. Bauman, All-Union Scientific Research Institute of Aviation Materials

"Influence of the Conditions of Heat Treatment on the Properties of 000Kh11N10M2T Steel"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 12, 1973, pp 9-13

Abstract: The conditions developed for the heat treatment of 000Kh11N10M2T steel make it possible to produce on the initial large-grained metal properties close to those of semi-finished goods of small section with low temperature at the end of hot deformation and possessing small grains and sufficient high plasticity and viscosity at up to -70°C temperatures. After the heat treatment according to the schedule 1220°C for

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR

DOLOTOVA, T. S., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 12, 1973, pp 9-13

2 hr, water + threefold austenitization at 1010±10°C for 1-3 hr, water + 600°C for 15 hr, air + 850°C for 1 hr, air + 500°C for 2 hr, the following satisfactory complex of mechanical properties could be obtained: at 20°C - tensile strength σ_t=155 kg/mm^2, specification yield point $\sigma_{0,2}$=149.5 kg/mm^2, residual relative elongation δ=12%, relative narrowing ψ=56.5%, impact ductility a=5.5 kg·m/cm^2, and at -70°C - σ_t=179 kg/mm^2, ψ=43%, a=3.5 kg·m/cm^2. Six figures, three bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

AA0040714 Kucheryavyy, V.I. UR 0482 1-70

Soviet Inventions Illustrated, Section I Chemical, Derwent,

240702 UREA PRODUCTION from NH_3 & CO_2, using converted natural gas as CO_2 source, and as H_2 source for NH_3 synthesis, is intensified and energy losses reduced, by total or partial injection of the converted natural gas feed at 30 kg/cm^2 with ammonium carbonate solution and liquid ammonia at 600-1000 kg/cm^2 to absorb CO_2 from the feed. Part of the converted natural gas is compressed and introduced at the base of the urea synthesis tower, at a temp. higher than the temp. of synthesis, and assists concentration of the urea melt. 6.7.67. as 1171649/23-26, GORLOVSKII, D.M. et al. (12.8.69) Bul. 13/1.4.69. Class 12o, Int. Cl. C 07c.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

AA0040714

AUTHORS: Gorlovskiy, D. M.; Kucheryavyy, V. L.; Lebedev, V. V.; Al'tshuler, L. N.; Levenkova, N. I.; Mel'nikov, B. F.; and Gumenyuk, V. P.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

1/2 C13 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--EQUATIONS FOR CALCULATING THE EQUILIBRIUM OF UREA SYNTHESIZED FROM AMMONIA AND CARBON DIOXIDE -U-

AUTHOR-(02)-KUCHERYAVYY, V.I., GORLOVSKIY, D.M.

K

COUNTRY OF INFO--USSR

SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(3), 355-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--UREA SYNTHESIS, AMMONIA, CARBON DIOXIDE, CALCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/1504 STEP NO--UR/0063/70/015/003/0355/0356

CIRC ACCESSION NO--AP0138505

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

2/2 013 UNCLASSIFIED PROCESSING DATE--11 [illegible] 70

CIRC ACCESSION NO--AP0138595

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EMPIRICAL EQUATIONS WERE DERIVED FOR THE SYNTHESIS OF UREA FROM CO SUB2 AND NH SUB3 IN TERMS OF MOLAR AMOUNTS OF REACTANTS PRESENT IN THE REACTOR. THEIR VALIDITY WAS CONFIRMED BY EXPTL. DATA ON THE EQUIL. OF THE SYSTEM. THE EQUATIONS ARE SUITABLE FOR STATIC CONDITIONS AS WELL AS FOR FLOW REACTORS IN WHICH NEARLY EQUIL. CONDITIONS ARE ATTAINED. FACILITY: FILIAL GIAP, DZERZHINSK, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR

UDC 621.376.9

BASALOV, F. A., KUCHERYAVYY, V. YA.

"Ultrasonic Modelling Of Radar Bearing"

Izv. VUZ SSSR: Radioelektronika, Kiyev, Vol XV, No 11, Nov 1972, pp 1587-1590

Abstract: This brief report discusses the over-all functional diagram of an ultrasonic simulator which makes it possible to perform phase (bearing) measurements. The simulator which operates in a pulse regime contains: 1) A water bath; 2) Model of a target with suspension filaments; 3) Receiving antennas; 4) Transmitting antenna made of piezoceramic 12.55 mm in diameter for λ = 1 mm; 5) IF amplifier; 6) Phase shifter; 7) Phase discriminator; 8) Differential amplifier; 9) Oscillograph; 10) Power amplifier; 11) Pulse modulator; 12) data forming circuit; and 13) Standard signal generator. 4 fig. 1 ref. Received, 11 October 1971.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR UDC: 518.5:681.3.06

ZLATKIS, V. M., KUCHGANOV, V. N.

"On a Method of Precognition of Complex Images"

V sb. Avtomat. ustroystva ucheta i kontrolya (Automatic Devices for Computation and Checking--collection of works), vyp. 6, Izhevsk, 1970, pp 89-101 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V782)

Translation: This paper deals with one method of preprocessing and rough recognition of complex images. The essence of the method is illustrated by analyzing portraits of people. The problem is to indicate on the portrait the region of the eyebrows, eyes, nose and mouth, and to find certain characteristic points on these features. Knowledge of the location of such points enables speeding up the following stage -- final recognition and improvement of accuracy. An algorithm for isolating a skeleton silhouette is described in detail. V. Mikheyev.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

Mechanical and Optical

USSR UDC 666.189.2:535.8

KUCHIKYAN, L. M., Candidate of Sciences

"Coherent Emission Rate Distribution at the Output End of Rectangular Light Guide"

Leningrad, Optiko-mekhanicheskaya promyshlennost' No 11, Nov 71, pp 10-12

Abstract: Calculations of coherent emission rate distribution at the output end of a rectangular light guide are presented. It is shown that at small emission divergence, the interference pattern at the output end appears in the form of points disposed at intersections of normal to each other straight lines, equidistant along the end plate generating lines. An experimental investigation carried out for the purpose of checking the correctness of theoretical conclusions is described. A schematic diagram of the experimental setup, as well as the photomicrographs of interference patterns are presented. It is stated that the use of a square light guide whose geometrical dimensions correspond to those obtained by calculations, makes it possible to obtain a maximum concentration of light energy on a small surface of the light guide output end.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR UDC 535.822:531.717.8

KUCHIN, A. A.

"Use of the Raster Method When Investigating the Roughness of Surfaces"

Trudy Metrologicheskikh Institutov SSSR (Works of the Metrological Institutes of the USSR), No 1, 114 (174), 1970, pp 104-112 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 1, 1971, Abstract No 1.32.353)

Translation: Works of the Metrological Institutes of the USSR. Research in the fields of optical and light measurements, No 114 (174), 1970, pp 104-112. In recent years, raster methods have been finding extensive application in precise-measurement technique, as well as in many branches of science and technology. A brief survey is given of the basic trends in the use of rasters, the basic characteristics of the method are presented, and consideration is given to the question of the use of moire stripes for the investigation of surface unevenesses. The results of comparative measurements of the depths of standard strokes of the eighth and ninth classes of cleanness according to GOST (State Standard) 2789-59 on a microinterferometer and a raster microscope agree well with the rating-plate data: their relative error does not exceed 5 - 10%. 1 table. 7 figures. 16 bibliographic entries.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR UDC: 51.155.001.57:681.3.06

KOSAREV, Yu. G., KUCHIN, N. V.

"A Parallel Algorithm for Solving a Problem in Taxonomy"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 42, Novosibirsk, 1970, pp 3-11 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V881)

Translation: A so-called parallel algorithm is proposed which permits the use of parallel computation on several machines connected in a system of the "Minsk-222" type for solving a problem in taxonomy, simplifies computation by substituting a hypercube for the hypersphere, and enables the use of a denser, and at the same time more computationally convenient form of arrangement of the initial data and parallel processing of many points in a single computer. It is noted that the solution process is appreciably accelerated if hyperplanes perpendicular to the coordinate axes are used as the resolving functions. This makes it possible to cut off computation at the first coordinate for which the assumed condition is not satisfied, and to effecitvely carry out computation simultaneously for many points with the aid of logic operations. For this purpose the initial data are recorded vertically by digital places rather than by words. V. Mikheyev.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--STRUCTURE OF MANGANESE VANADIUM ALLOYS CLOSE TO EQUIATOMIC COMPOSITION, IN RELATION TO THE MAGNETIC PROPERTIES -U-

AUTHOR-(03)-KUCHIN, V.M., SOMENKOV, V.A., SHILSHTEYN, S.SH.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29, (2), 404-406

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALLOY STRUCTURE, MANGANESE ALLOY, VANADIUM ALLOY, NEUTRON DIFFRACTION, MAGNETIC MOMENT, ALUMINUM CONTAINING ALLOY, ORDERED ALLOY, MAGNETIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0349 STEP NO--UR/0126/70/029/002/0404/0406

CIRC ACCESSION NO--AP0129581

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

2/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129581

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF MN,V AND MN,V,AL ALLOYS WAS STUDIED BY NEUTRON DIFFRACTION AND THE RESULTS WERE INTERPRETED IN TERMS OF THE PECULIAR MAGNETIC PROPERTIES OF THESE MATERIALS. SUPERSTRUCTURAL REFLECTIONS APPEARED ON THE NEUTRON DIFFRACTION PATTERNS OF MN,V ALLOYS PREPARED FROM ALUMINOTHERMAL V, PRESUMABLE AS A RESULT OF TRACES OF AL. THE ADDITION OF SIMILAR TO 5PERCENT AL TO MN,V ALLOYS LED TO THE FORMATION OF AN ORDERED STRUCTURE WITH A SPONTANEOUS MAGNETIC MOMENT, THE AL APPARENTLY STABILIZING THE MAGNETIC PHASE.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

1/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--ANTIFERROMAGNETISM OF SOME ALLOYS BASED ON GAMMA MANGANESE -U-

AUTHOR--SOMENKOV, V.A., KUCHIN, V.M.

K

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1) 207-9

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MANGANESE ALLOY, ANTIFERROMAGNETIC MATERIAL, NICKEL ALLOY, INDUCTION FURNACE, NEUTRON DIFFRACTION, BRILLOUIN EFFECT, HELIUM, ZINC CONTAINING ALLOY, MAGNETIC STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0628 STEP NO--UR/0126/70/029/001/0207/0209

CIRC ACCESSION NO--AP0105607

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2/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70.

CIRC ACCESSION NO--AP0105607

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STUDY OF THE MAGNETIC STRUCTURE OF ANTIFERROMAGNETIC ALLOYS OF TRANSITIONS D METALS MAKES IT POSSIBLE TO DET. THE CONDITIONS UNDER WHICH LOCALIZED MAGNETIC MOMENTS CAN EXIST IN THE CRYSTALS. NEUTRON DIFFRACTION OF BINARY ALLOYS OF D METALS BASED ON GAMMA MN WAS USED TO BRING OUT THE EFFECT OF THE IMPURITIES OF THE 2ND COMPONENT ON THE PROPERTIES OF THE METALLIC ANTIFERROMAGNET. MN ALLOYS CONTG. 10, 15, 20, 25, AND 40 AT. PERCENT NI, AS WELL AS MN ALLOYS CONTG. 3.5 AND 5.6PERCENT AT. ZN AND 40, 50, 56, AND 60 AT. PERCENT FE, WERE USED. THE ALLOYS WERE MELTED IN AN INDUCTION FURNACE IN A HE ATM. AND QUENCHED IN WATER TO STABILIZE THE GAMMA PHASE. NEUTRON DIFFRACTION SHOWED THAT ALL THE ALLOYS STUDIED WERE AT. DISORDERED SYSTEMS WITH GIVEN MAGNETIC ORDERING. THE PRESENCE OF DIFFUSION PEAKS ON THE NEUTRON DIFFRACTION PATTERNS IS ASSOCD. WITH THE AT. SHORT RANGE ORDER, WHICH INCREASES WITH INCREASING CONTENT OF THE 2ND COMPONENT. THE TEMP. DEPENDENCE OF THE INTENSITY OF THE MAGNETIC SUPERSTRUCTURE PEAK IS SATISFACTORILY DESCRIBED BY A BRILLOUIN TYPE FUNCTION. INASMUCH AS THESE ALLOYS CONSIST OF RELATIVELY SIMILAR (WITH REGARD TO THE STRUCTURE OF THE 3D BAND) ATOMS, THE SPIN SYSTEM CAN APPARENTLY BECOME ORDERED INDEPENDENTLY OF THE EXACT CONFIGURATION OF THE ATOMS IN THE LATTICE OF THE ALLOY. THE DETG. ROLE IN THESE ANTIFERROMAGNETIC ALLOYS IS PLAYED BY THE INTERACTION OF THE D ELECTRONS AND NOT THE S AND THE D ELECTRONS.

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USSR UDC 621.7.011

OKHRIMENKO, Ya. M., SMIRNOV, O. M., SURMACH, L. V., KUCHINOV, M. M.

"Superplasticity of VTZ-1 Titanium Alloy"

Ordzhonikidze, Isvestiya Vysshikh Uchebnykh Savedeniy, Tsvetnaya Metallurgiya, No 4, 1972, pp 133-136.

Abstract: The optimal temperature and rate conditions for deformation of VTZ-1 alloy to the state of superplasticity are established: temperature interval 800-950°, rate interval 10^{-3}-10^{-4} sec^{-1}; it is shown that the single-phase β area should not be entered during heating. Under these temperature and rate conditions, clear signs of the state of superplasticity were produced in VTZ-1 alloy, i.e., exceptionally high values of relative elongation (δ = 950%) in combination with low deformation resistance (σ = = 0.4-4 kg/mm^2) and a coefficient rating sensitivity of deformation resistance to deformation rate m > 0.4. These data indicate good prospects for the use of the effect of superplasticity in the pressure working of metals.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

Turbine and Engine Design

USSR UDC 621.45.01

PERVYSHIN, N. V., KUCHINSKAYA, T. P.

"Concerning the Selection of a Design Point on the Fan Characteristic of a Ducted-Fan Turbojet Engine With High Bypass"

Kazan', Izvestiya Vysshykh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 3, 1970, pp 63-68

Abstract: The article deals with some features of ducted-fan turbojet engines with high bypass. It is shown that increasing the bypass brings about a greater drop in the relative thrust with respect to flight velocity. The influence of this drop in relative thrust upon the temperature level of the gas before the turbine, under cruising conditions, is considered. Recommendations are given concerning selection of the position of the point of combined work on the characteristic of a fan in a take-off regime, which provides for the required value of the nominal altitude thrust. 6 figures.

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USSR

ENGINEERING
Aeronautical and Space

USSR

UDC 624.07:534.1

KUCHINSKIY, A. F., POPOV, Yu. G.

"Calculating the Frequencies and Shapes of Natural Torsional Vibrations of Composite and Divided Beams With Concentrated Masses"

Tr. Kazan. aviats. in-ta (Works of Kazan' Aviation Institute), 1972, No. 145, pp 56-62 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V287)

Translation: A method is presented for finding the frequencies and shapes of intrinsic torsional vibrations of complex multimass systems by compiling them from elementary segments of a beam containing a load in the ratio 2:1. Equations are obtained for determining frequencies and shapes of torsional vibrations of a system consisting of two segments of a beam in terms of the frequencies and shapes of oscillations of the component parts. By consecutive application of these equations for the connection of individual parts of the system, beginning with elementary parts, one can obtain the complete spectrum of the frequency and shapes of oscillations of any multimass system, including a branched system. Authors' abstract.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR UDC:629.78.015.4

KUCHINSKIY, A.F. and POPOV, YU.G.

"On Calculation of Natural Frequencies and Modes of Vibration of Compound and Ramified Shafts With Concentrated Masses"

Kazan', Tr. Kazan. Aviats. In-ta (Transactions of Kazan' Aviation Institute), 1972, vyp 145, pp 56-62 (from Referativnyy Zhurnal-Raketostroyeniye, 1973, Abstract No 4.41.188)

Translation: A method is proposed for determining the natural frequencies and modes of torsional vibrations of compound multimass systems by dividing them into elements containing one or two masses each. Equations are obtained for determining the frequencies and modes of torsional vibrations of a system, consisting of two sections of shaft, if the frequencies and modes of vibration of the components are known. By successive application of these equations for connecting the system components, beginning with elements, it is possible to obtain a complete spectrum of natural frequencies and modes of vibration of any multimass system, including a ramified one. 2 illustrations. 1 table. 2 references. Author's resume.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR

UDC: 621.3;621.039.667

BOOK

DASHUK, P. N., ZAYENTS, S. L., KOMEL'KOV, V. S. (general editor), KUCHINSKIY, G. S., NIKOLAYEVSKAYA, N. N., SHKUROPAT, P. I., SHNEYERSON, G. A.

TEKHNIKA BOL'SHIKH IMPUL'SNYKH TOKOV I MAGNITNYKH POLEY (Technology of High-Current Pulses and Strong Magnetic Fields), Moscow, "Atomizdat", 1970, 472 pp, illus, biblio, 2 465 copies printed

The book describes circuits, methods of calculation, characteristics and design of high-power capacitor banks and their principal elements: capacitors, dischargers of various types (vacuum, high-pressure, solid-dielectric), insulation of connectors (busbars, cables), and pulse transformers. Methods are presented for calculation of magnetic fields and inductances in solenoids and conductors. The singularities of operation of the structural elements are considered as well as the behavior of metals in superconducting fields.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR

DASHUK, P. N. et al., TEKHNIKA BOL'SHIKH IMPUL'SNYKH TOKOV I MAGNITNYKH POLEY, Moscow, "Atomizdat", 1970

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DASHUK, P. N. et al., TEKHNIKA BOL'SHIKH IMPUL'SNYKH TOKOV I MAGNITNYKH POLEY, Moscow, "Atomizdat", 1970

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

Acc. Nr: AP0043697 Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 3, pp 944-951

NEGATIVE ION DECOMPOSITION IN THE SHORT RANGE POTENTIAL APPROXIMATION

Demkov, Yu. N.; Drukarev, G. F.; Kuchinskiy, V. V.

The cross section for electron detachment in collisions between negative ions A^- and atoms A are considered by the short range potential method (Firsov, Smirnov [1]). The adiabatic approximation is employed for quasi-stationary states; nonzero probability for survival of the A_2^- systems is taken into account and correspondingly allowance is made for the energy dependence of the cross section. The energy distribution of the emitted electrons is calculated in the same approximation. The case of different atoms and ions $(A^- + B)$ can be reduced to the case $(A^- + A)$ by renormalizing the parameters of the problem. The results are illustrated by the process $H^- + H \rightarrow H + H + e$ and are compared with the experiments and with other calculations.

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USSR

UDC 632.95

NOVRUZOV, Kh., KUCHKAREV, A. B., ALOVITDINOV, A. B., and SARANKINA, S. A.

"Method of Preparing tert-Alkyl Phenols"

USSR Authors' Certificate No 259903, filed 17 Jul 68, published 7 May 70 (from RZh-Khimiya, No 1, 10 Jan 71, Abstract No 1N608P)

Translation: tert-Alkyl phenols which can be employed as herbicides and fungicides are obtained by the alkylation of PhOH with tertiary alcohols a in the presence of polyphosphoric acid (I) at $\leqslant 200°$. This increases the selectivity of the alkylation as compared with other acid catalysts. In a device with a DIN-STARK [transliterated from the Russian; possibly DEAN-STARK] cap, 0.6 mole tert-BuOH is added dropwise to 0.5 mole PhOH containing 1-3% I at 145-150° with stirring. After heating for 15 min, the mixture is cooled, rinsed off from I with water, and 4-tert-BuC_6H_4OH is separated by distillation, yield 98%, melting point 96-8.5° (heptane).

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1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--CARBON CHAIN COPOLYMERS CONTAINING PHOSPHORUS, NITROGEN, AND OXYGEN HETEROATOMS -U-

AUTHOR-(03)-KUCHKAROV, A.B., ALOVITDINOV, A.B., KHAMDAMOVA, O.K.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(2), 78-80

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPOLYMER, PHOSPHONIC ACID, BENZENE DERIVATIVE, VINYL COMPOUND, PYRROLIDINE, KETONE, TAUTOMERISM, LACTAM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0919 STEP NO--UR/0291/70/014/002/0078/0080

CIRC ACCESSION NO--AP0137947

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

2/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137947

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. (1,PHENYL,VINLYIPHOSPHONIC ACID WAS COPOLYMD. WITH 1,VINYL,2,PYRROLIDINONE IN SEALED GLASS AMPULS IN THE PRESENCE OF 1 WT. PERCENT AZOBISISOBUTYRONITRILE AT 80DEGREES IN N. COPOLYMERS WERE PPTD. WITH ET SUB2 O FROM CHCL SUB3 OF ME SUB2 CO SOLNS. AND THEIR CHEM. COMPN. DETD. COPOLYMERS WERE AMORPHOUS, SOL. IN H SUB2 O, LIGHT YELLOW TO RED BROWN, AND OF AMPHOTERIC CHARACTER. THE VISCOSITY CURVE OF DIL. AQ. SOLNS. OF COPOLYMERS IN H SUB2 O VS. PH INDICATED THE KETO,ENOL TAUTOMERISM OF THE LACTAM RINGS.

FACILITY: INST. KHIM., TASHKENT, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR

KUCHKAROV, Ya. Kh., RAKHIMOVA, H., ALIEVA, M.

"Application of Topological Semifields to the Rule of the Repeated Logarithm for Martingales"

[Tr.] Tashkent. Politekhn. In-ta [(Works) of Tashkent Polytechnical Institute], 1972, No 76, pp 154-162 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V51, by the authors).

Translation: This article is dedicated to the rule of the repeated logarithm for sequences of random processes forming a martingale and for which there is no second moment. The results produced are a generalization and refinement of certain known theorems on the repeated logarithm.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR

KUCHKAROV, Ya. Kh., MAMIROV, U. E.

"Application of Topoligical Semifields to the Rule of the Repeated Logarithm for Markov Chains"

[Tr.] Tashkent. Politekhn. In-ta [(Works) of Tashkent Polytechnical Institute], 1972, No 76, pp 163-166 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V52, by the authors).

Translation: The results produced in this work are a generalization of certain known theorems on the rule of the repeated logarithm for independent random quantities for the case of quantities $\{X_k, k = 1, 2, \ldots\}$ forming a homogeneous Markov chain for which there is no second moment.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR

UDC 519.210

SARYMSAKOV, T. A., KUCHKAROV, Ya. Kh., and ISLAMOVA, Kh. Ya., Taskent State University imeni V. I. Lenin

"Upper and Lower Functions for Series of Independent Random Numbers"

Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk (News of the Academy of Sciences Uzbek SSR, Physico-Mathematical Sciences Series) No 5, 1970, p 20-27

Abstract: Necessary and sufficient conditions are given for a series of functions to belong to an upper or lower class. The results obtained are generalized from those of W. Feller (Transactions of the American Mathematical Society, Vol 54, 1943, p 373 and p 361) and extended to unbounded random numbers. The authors examine a topological space consisting of a full topological half-field, a topological Boolean algebra of its idempotents, a maximal co-final, and a measure defined on the maximal co-final. A series of independent random numbers having zero mathematical expectation and finite dispersion is considered. Conditions are given for series of functions to belong to upper or lower classes, depending on the convergence or divergence of other series as defined by derived relations. Three theorems are given with proofs. Orig. art. has 5 refs.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR

UDC 669.715.015.95

BABICHEV, F. I., D'YACHENKO, L. A., ZOLOTOREVSKIY, YU. S., IVANOV, V. V., KUCHERIK, V. V.

"Possibility of Hardening Aluminum Alloys by VT15 Alloy"

V sb. Metallurgiya (Metallurgy -- collection of works), No 14, Sudostroyeniye Press, Leningrad, 1971, pp 128-132 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 41647)

Translation: A study was made of the possibilities of creating layered composite materials by reinforcing Al-alloys with high-strength materials. As an example a composite is presented in which the role of the hardening agent is played by VT15 alloy. The theoretical technological scheme and the heat treatment conditions for this composite material were selected so as to insure a strength >70 kg/mm² with a specific weight of 3.32 g/cm³. The study of the physical and mechanical properties of this composite makes it possible to draw conclusions regarding its promising nature. 3 illustrations, 1 table, and a 6-entry bibliography.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

USSR

UDC 542.61:(546.4/5:546.65)

GORBENKO, F. P., KUCHKINA, YE. D., and OLEVINSKIY, M. I.

"Extraction Recovery of Alkali Earth Elements From Rare Earth Elements"

Leningrad, Radiokhimiya, Vol 12, No 4, 1970, pp 661-664

Abstract: The authors discuss a method of extracting alkali earth elements from rare earth elements from an acid solution in the form of thiocyanate complexes. Extraction of a mixture of alkali earth elements was studied as a function of the acidity of the solution. It was found that the alkali earth elements are extracted from a comparatively acid solution; 50% is extracted from a 1 M solution with respect to HCl. Optimum acidity was taken as 0.1 M with respect to HCl. An investigation of the effect which the thiocyanate ion concentration has on the extraction process showed that maximum extraction takes place at a concentration of NaSCN equal to 2.4 M. To eliminate interference from rare earth elements in the extraction of alkali earth elements, ethylenediaminetetraacetic acid sodium salt was used for masking, since it forms fairly stable complexes with rare earth metals in weakly acid solutions while the alkali earth elements do not form complexes under these conditions. The method may be used [illegible]

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620007-1

1/3 018 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--CARBOLINES. I. 1,4,DISUBSTITUTED BETA,CARBOLINES -U-

AUTHOR--KUCHKOVA, K.I., SEMENOV, A.A., TERENTYEVA, I.V.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 197-201

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--OXIME, CHEMICAL SUBSTITUENT, INTRAMOLECULAR MECHANICS, NERVOUS SYSTEM DRUG EFFECT, HETEROCYCLIC NITROGEN COMPOUND, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1711 STEP NO--UR/0409/70/000/002/0197/0201

CIRC ACCESSION NO--AP0104914

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2/3 018 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104914

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BECKMANN REARRANGEMENT OF OXIMES (I) INTO 3,4,DIHYDROCARBOLINES (II) PROCEEDS WITH MODERATE YIELDS IS LESS THAN 50PERCENT WITH A THREEFOLD AMT. OF PCL SUB5 AT 60-100DEGREES, VIA AN ANOMALOUS CATION III, FAIRLY STABLE FOR ALIPHATIC SUBSTITUENTS R PRIME1, UNSTABLE FOR ELECTRON ACCEPTOR PHENYL SUBSTITUENTS, ESP. R PRIME3, WHEN III DOES NOT APPEAR. WITH R PRIME2 EQUALS PH, THE REARRANGEMENT INTO II SUCCEEDS IN 1:1 PHNO SUB2,DIOXANE IN POOR YIELD. I WITH ARYL R PRIME3 SUBSTITUENTS UNDERGO A BECKMANN REARRANGEMENT TO ANILIDES (IV). IN PYRIDINE UNDER ACTION OF P MEC SUB6 H SUB4 SO SUB2 CL, WITH YIELDS GREATER THAN 70PERCENT. III WERE ISOLATED EITHER AS HYDROCHLORIDES OR AS PICRATES AND WERE CATALYTICALLY DEHYDROGENATED TO CARBOLINES BY HEATING TO 140-160DEGREES IN AQ. (CH SUB2 OH) SUB2 IN THE PRESENCE OF ACTIVE PD, PREPD. FROM PDCL SUB2 AND MALEIC ANHYDRIDE. IV WERE CONVERTED TO THEIR ACIDS BY ALK. HYDROLYSIS. THUS, A MIXT. OF 5.5 G INDOLE AND 10 G BZCH:CHME WAS TREATED UNDER STIRRING AT 0DEGREES WITH 0.55 G 70PERCENT HCLO SUB4 AND AFTER HOMOGENIZATION KEPT 7 HR AT ROOM TEMP. TO YIELD 56PERCENT 1,PHENYL,3,(3,INDOLYL),1,OXOBUTANE. A SOLN. OF 5.3 OF THE OXIME OF 4,PHENYL,4,(3,INDOLYL),2,OXOBUTANE IN 53 ML DIOXANE WAS RAPIDLY STIRRED INTO 11.75 G PCL SUB5 IN 53 ML PHNO SUB2 AT 50DEGREES (TEMP. ROSE TO 70DEGREES). TREATMENT WITH CHL IN ET SUB2 O YIELDED 1.15 G 1,METHYL,4,PHENYL,3,4,DIHYDRO,BETA,CARBOLINE. THIS COMPD. WAS ADDED TO A SOLN. OF 1.96 G PDCL SUB2 TIMES 2H SUB2 O AND 4.5 G MALEIC ANHYDRIDE IN 80 ML (CH SUB2 OH) SUB2 AND WARMED 3 HR UNDER STIRRING IN N AT 160DEGREES YIELDING 13PERCENT 1,METHYL,4,PHENYL,BETA,CARBOLINE.

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3/3 018 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104914

ABSTRACT/EXTRACT--INTO A SOLN. OF 0.275 G OF THE OXIME OF 1,3,DIPHENYL,3,(3,INDOLYL),1,OXOPROPANE IN 2.75 ML DRY PYRIDINE COOLED BY ICE, WAS STIRRED 0.185 G P MEC SUB6 H SUB4 SO SUB2 CL AND KEPT 6 HR AT 20DEGREES GIVING 75PERCENT ANILIDE OF 3,PHENYL,3,(3,INDOLYL),PROPIONIC ACID. THIS WAS HEATED WITH KOH IN (CH SUB2 OH) SUB2 1 HR AT 190DEGREES TO YIELD 86PERCENT FREE ACID. THE FOLLOWING ARE REPORTED (R PRIME1, R PRIME2, R PRIME3, M.P. II (SALT), M.P. CARBOLINE, AND M.P. CARBOLINE HCL SALT GIVEN): PR, H, ME, 203-4DEGREES (HCL), 197.5-8.5DEGREES, 223-4DEGREES (ETOH); ISO-BU, H, ME, 178-9DEGREES (HCL), 198-200DEGREES, 235-6DEGREES (ISO-PROH); ME, ME, ME, 217-19DEGREES (HCL) (247DEGREES (PICRATE)), MINUS, MINUS; H, H, ME, 236DEGREES (PICRATE), MINUS, MINUS; PH, H, ME, MINUS, 226DEGREES, 271-3DEGREES (ISO-PROH). THE BETA CARBOLINES SUPPRESS THE CENTRAL NERVOUS SYSTEM.

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USSR UDC 669.017:539.216.2:535.338.41

BUTIKOV, YE. I., KONDRAT'YEV, A. S., and KUCHMA, A. YE., Leningrad State University imeni A. A. Zhdanov

"Collective Excitations in Thin Metallic Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 3, 1973, pp 485-492

Abstract: The spectrum of collective excitations of electrons in thin metallic films was investigated where there was a substantially different quantization of carrier movement. It was shown that the diagonal for the indices of the electron states in a film is only a equilibrium function of electron distribution and as such single-electron wave functions, corresponding to the movement of electrons in a self-congruent field, were selected as a basis for determining the dispersion law for collective excitations associated with spin function excitations and distribution. Starting with equations for Green functions, the authors develop and use mathematical expressions to arrive at a final expression for the dispersion law. Ten bibliographic references.

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USSR UDC: None

BUTIKOV, Ye. I., KONDRAT'YEV, A. S., and KUCHMA, A. Ye.

"Thermodynamics of an Electronic Gas in Crossed Fields"

Leningrad, Fizika Tverdogo Tela, Vol. 13, No 10, October 1971, pp 3094-3095

Abstract: This article presents the results of a computation of the thermodynamic characteristics of an electron gas in semiconductors in crossed constant and uniform electric and magnetic fields. The problem discussed here concerns thin-film semiconductor specimens and is similar to an earlier article dealing with massive specimens, published in the same journal (A. G. Aronov and G. Ye. Pikus, 6, 1964, p 506). In a thin film of this type, whose thickness does not exceed the Debye screening radius, an electric field can penetrate even in the absence of a current, whereas the presence of such a current is required in the massive specimen for penetration of the field into the specimen volume to occur. For the sake of simplicity, a single-component system whose electrical neutrality is insured is considered. The analysis shows that the electric field reduces the magnitudes of the oscillation peaks and shifts them in the direction of the lesser magnetic field values. The formulas derived are valid for strong fields. The authors are connected with the Leningrad State University imeni A. A. Zhdanov.

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KUCHMENT, L. S.

"Mathematical Simulation of River Runoff"

Matematicheskoye modelirovaniye rechnogo stoka (cf. English above), Leningrad, Gidrometeoizdat, 1972, 191 pp, ill., 1 4., 36 k (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V510K)

Translation: Studies made in our country and abroad with respect to creating mathematical models of runoff and their utilization in hydrologic forecasts and calculations are generalized in this book. Watershed and channel models are constructed basically by the observations at their input and output. Accordingly, a great deal of attention has been given to reversible problems and the determination of model parameters. Methods of solving such problems for individual models based on utilizing the theory of irregular problems and optimization methods are proposed. Examples of the practical application of the investigated models are presented.

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