

USSR

UDC 547.759.3.07:543.422.4.25

SHEVEDOV, V. I., KURYLO, G. N., and GRINEV, A. N., All Union Scientific
Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Methyl Ester of γ -Phenylacetoacetic Acid in Fisher Indole Synthesis"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 8, Aug 72, pp 1079-1082

Abstract: Methyl esters of γ -phenyl- β -hydrazinocrotonic acids substituted at the nitrogen atom form methyl esters of 3-phenylindolyl-2-acetic acids in presence of sulfuric acid, the reaction being carried out at room temperature. 2-benzylindole-3-carboxylic acid esters form only in very small amounts under these conditions. When the indolization is carried out at 190-200°, without catalyst, the direction is reversed, benzylindole-3-carboxylic acid esters forming predominantly. When reacted with polyphosphoric acid, these compounds yield derivatives of benzo[b]carbazole, which upon oxidation produce 6,11-dioxobenzo[b]carbazoles.

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UDC 615.214:547.759

MASHKOVSKIY, M. O., GRINEV, A. N., ANDREYEVA, N. I., SHVEDOV, V. I., and ALTUKHOVA, L. B., Laboratory of Pharmacology and Laboratory of Synthesis, All-Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Investigation of the Psychotropic Activity of 1,10-Trimethylenepyrazino [1,2-a]indole"

Moscow, Farmakologiya i Toksikologiya, Vol 34, No 4, Jul-Aug 71, pp 387-391

Abstract: Five novel derivatives of 1,10-trimethylenepiperazino[1,2-a]indole (I) and two derived from 1,10-trimethylenepyrazino[1,2-a]indole (II) were studied in respect to their psychotropic activity (reaction to the effect of phenamine and reserpine on mice and rats, cataleptic activity of these materials on rats, their effect on body temperature and overall state of mice). The derivatives of (I) were found to be more active, especially those without any substituents in the ring, those with a methoxy group in position 8 and methyl group in 2 and 8 position of the heterocycle. By their activity these substances resemble the antidepressants of the tricyclic structural type such as imizines. Derivatives of (II) exhibited a 1/2.

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MASHKOVSKIY, M. O., et al., Farmakologiya i Toksikologiya, Vol 34, No 4,
Jul-Aug 71, pp 387-391

definitely lower activity. Transition from a tertiary amine derivative of
(I) to a quaternary amine lowered its activity.

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Nitrogen Compounds

USSR

UDC 615.225.2:547.567.3].012.1:542.9

SHVEDOV, V. I., KURILO, G. N., and GRINEV, A. N., All-Union Scientific Research Institute of Pharmaceutical Chemistry imeni S. Ordzhonikidze, Moscow

"Research in the Field of Quinones. XLVIII. Synthesis of Derivatives of 2-Benzyl-5-oxyindole and 2-Benzyl-5-oxybenzindole"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 9, Sep 70, pp 7-12

Abstract: The article suggests a method for the synthesis of derivatives of 2-benzyl-3-carbomethoxy-5-oxyindole and 2-benzyl-3-carbomethoxy-5-oxybenzindole, which are intermediates in the synthesis of structural analogs of serotonin. The derivatives are obtained by condensation of p-benzoquinone or 1,4-naphthoquinone with the methyl ester of N-substituted or unsubstituted β -amino- γ -phenylcrotonic acid. Methylation of the derivatives with dimethyl sulfate in an alkaline solution converts them to derivatives of 2-benzyl-3-carbomethoxy-5-methoxyindole and 2-benzyl-3-carbomethoxy-5-methoxybenzindole. Hydrolysis of the

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SHVEDOV, V. I., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 9, Sep 70,
pp 7-12

latter gives corresponding 2-benzyl-3-carboxy-5-methoxyindoles and 2-benzyl-3-
carboxy-5-methoxybenzindoles. IR and UV spectra were taken of the resultant
compounds.

2/2

UDC 547.861.3'752

USSR

SHVEDOV, V. I., ALTUKHOVA, L. B., and GRINEV, A. N., All-Union
Scientific Research Chemical Pharmaceutical Institute imeni Sergo
Ordzhonikidze, Moscow, Ministry of Health USSR

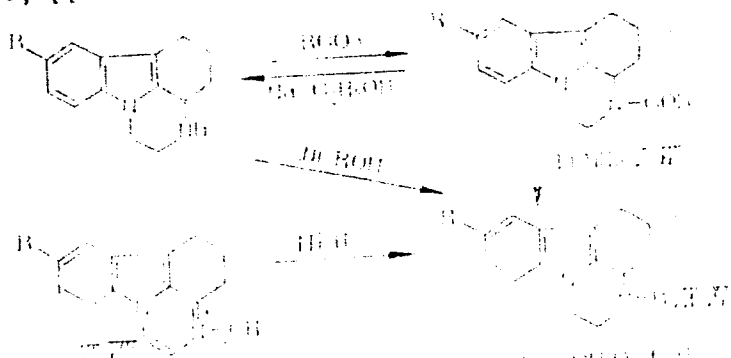
"N-Acyl and N-Alkyl Derivatives of 1,10-Trimethylenepiperazino
(1,2-a)indole"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 7, 1970,
pp 5-7

Abstract: Methods were developed for synthesizing the N-alkyl and N-acyl derivatives of piperazino(1,2-a)indole, which exhibits antihistaminic and hypotensive action. The N-acyl derivatives (I-IV) were obtained by acylation of 8-methyl-1,10-trimethylene-piperazino(1,2-a)indole with acetic anhydride or acid chlorides. Alkylation of derivatives of piperazino(1,2-a)indole by ordinary alkylating agents occurs with complications and leads to formation of resinous products. N-alkyl derivatives can be obtained by indirect methods. Hydrogenation of iodomethylates (VII and VIII) over skeletal nickel catalyst leads to the corresponding N-methyl derivatives (IX and X), while reduction of N-acetyl-8-methyl-1,10-trimethylenepiperazino (1,2-a)indole (I) with lithium aluminum hydride yields the N-ethyl derivatives (XI).

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SHVEDOV, V. I., et al., *Khimiko-Farmatsevticheskiy Zhurnal*, Vol 4,
No 7, 1970, pp 5-7



- | | | |
|--|-------------------------|--------------------------------|
| $R = H, CH_3$ | $R' = CH_3, R = COCH_3$ | $CH_3, COCH_3$ |
| $R = CH_2CH_3, C_2H_5OCH_2$ | $R' = H, CH_3$ | $R = CH_2CH_3, C_2H_5OCH_2$ |
| $R = CH_2CH_2CH_3, R = COCH_3$ | $R' = CH_3, C_2H_5$ | $R = CH_2CH_2CH_3, R = COCH_3$ |
| $R = CH_2CH_2CH_2CH_3, R = COCH_3$ | $R' = R = COCH_3$ | |
| $R = CH_2CH_2CH_2CH_2CH_3, R = COCH_3$ | | |

UDC: 547.757.07

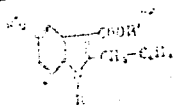
USSR

SHVEDOV, V. I., KURILO, G. N., GRINEV, A. N., All-Union Scientific Research
Chemico Pharmaceutical Institute imeni Sergo Ordzhonikidze, Moscow, Minis-
try of Health USSR

"A Method of Producing Indole Derivatives"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,
No 7, 4 Feb 70, p 29, patent No 262906, filed 12 Feb 68

Translation: This Author's Certificate introduces a method of producing
indole derivatives of the formula



where R is H, Alk, Ar; R' is Alk, H; R'' is H, Alk. p-Benzoquinone is
interacted with -phenyl- -aminocrotonic acid ester or its derivative in
an inert solvent such as dichloroethane, and the resultant product is
indole derivatives of the formula

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UDC 615.31:547.759.327.012.1:
542.9
SHVEDOV, V. I., KURILO, G. N., GRINEV, A. N., All-Union Scientific
Research Chemico Pharmaceutical Institute imeni Sergo Ordzhonikidze,
Moscow, Ministry of Health USSR

"Synthesis of 2-Arylindole Derivatives"

Moscow, Khainiko-Farmatsevticheskii Zhurnal, Vol IV, No 3, 70, pp
11-15

Abstract: Use was made of the intramolecular cyclization of 2-arylin-
doyl-3-acetic acids to synthesize 1,2-benzcarbazole derivatives.
Introduction of an aryl chromophore into the indole heterocycle
increases the absorption intensity and moves the absorption bands
toward the long-wave spectral region. The type of substituent in
the aryl chromophore has no effect on the position of the absorption
maxima. Only two of the eighteen derivatives exhibited antiviral
activity in vitro against A type PR-8 strain.

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1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SYNTHESIS OF PYRROLO,1,2,ALPHA,PYRIMIDINE DERIVATIVES -U-
AUTHOR--(04)-SHVEDOV, V.I., KHARIZOMENOVA, I.A., ALTUKHOVA, L.B., GRINEV,
A.N.
COUNTRY OF INFO--USSR
SOURCE--KHM. GETEROTSIKL. SOEDIN. 1970, (3), 428
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PYRROLES, ORGANIC NITROGEN COMPOUND, PYRIMIBINE, AMINE
DERIVATIVE, MOLECULAR STRUCTURE, CHEMICAL SYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3002/0479 STEP NO--UR/0409/70/000/003/0428/0428
CIRC ACCESSION NO--AP0128048
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128048

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DERIVS. OF 2 AMINOPYRROLE (I) WERE
CONDENSED WITH 1,3-DICARBONYL DERIVS. IN REFLUXING C SUB5 H SUB5 N OR
ACOH OR HEATED WITHOUT SOLVENT AT 150-60DEGREES TO YIELD THE FOLLOWING
II (R, R PRIME1, R PRIME2, R PRIME3, M.P., AND PERCENT YIELD GIVEN):
SHOWN ON MICROFICHE. FACILITY: VES. NAUCH.-ISSLED. KHIM.-FARM.
INST. IM. ORDZHONIKIDZE, MOSCOW, USSR.

UNCLASSIFIED

1/2 011
 TITLE--DIALKYLAMINOALKYL DERIVATIVES OF INDOLE OR TETRAHYDROCARBAZOLE -U-
 UNCLASSIFIED
 PROCESSING DATE--13NOV70
 AUTHOR--(03)-SHVEDOV, V.I., GRINEV, A.N., ALTUKHOVA, L.B.
 COUNTRY OF INFO--USSR
 SOURCE--USSR 265,885
 REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
 DATE PUBLISHED--17MAR70

SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--AMINE DERIVATIVE, INDOLE, ORGANIC AZOLE COMPOUND, HYDROXYL
 RADICAL, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY RUEL/FRAME--3002/1481
 STEP NO--UR/0482/70/000/000/0000/0000
 SERIALIZED NO--AA0123880
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 011

CIRC ACCESSION NO--AA0128880

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

ABSTRACT. TITLE COMPS. ARE PREPD. BY
TREATING O METAL DERIVS. OF 5, HYDROXYINDOLES OR N, METAL DERIVS. OF
SUBSTITUTED INDOLES OR TETRAHYDROCARBAZOLES WITH A HALOALKYLDIALKYL
AMINE AT 120-50DEGREES.
FACILITY: GROZHCNIKIDZE, S., ALL UNION
SCIENTIFIC RESEARCH CHEMICAL PHARMACEUTICAL INSTITUTE.

UNCLASSIFIED

L/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INDOLE DERIVATIVES -U-
AUTHOR--(03)-SHVEDOV, V.I., KURILO, G.N., GRINEV, A.N. G
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 262,906
REFERENCE--OTKRYTIYA, OZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(7)
DATE PUBLISHED--04FEB70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CHEMICAL PATENT, CHEMICAL SYNTHESIS, MOLECULAR STRUCTURE,
INDOLE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2004/1777 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0132043
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AA0132043
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INDOLE DERIVS. (I, R EQUALS H,
ALKYL, ARYL; R PRIME1 EQUALS ALKYL, H; R PRIME2 EQUALS H, ALKYL) WERE
OBTAINED BY TREATING P BENZOQUINONE WITH GAMMA PHENYL BETA AMINO
CROTONIC ACID ESTER OR A DERIV. IN AN INERT SOLVENT, SUCH AS
DICHLORDETHANE. THE RESULTING PRODUCT WAS SEPD. OR METHYLATED BY ME
SUB2 SO SUB4. FACILITY: ORDZHONIKIDZE, S., ALL UNION SCIENTIFIC
RESEARCH CHEMICAL PHARMACEUTICAL INSTITUTE.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--090CT70
TITLE--NEW METHOD FOR SYNTHESIZING THIEND(3,2,8)PYRROLE DERIVATIVES -U-

AUTHOR--(03)-SHVEDOV, V.I., GRINEV, A.N., VASILYEVA, V.K.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SUEVIN. 1970, (2), 276-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMICAL SYNTHESIS, BIOMEDICAL R AND D, PYRROLES, THIOPHENE,
MOLECULAR STRUCTURE, UV SPECTRUM, IR SPECTRUM, EPR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAHE--1983/1194

STEP NH--UR/0409/70/000/002/0276/0277

CIRC ACCESSION NO--AF0054093

2/2 022

UNCLASSIFIED

PROCESSING DATE--0900CT79

CIRC ACCESSION NO--AP0054093

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN A SEARCH FOR NEW BIOL. ACTIVE SUBSTANCES, THE TITLE COMPS. WERE PREPD. BY HEATING E.G. A, ANILINOACETOPHENONE WITH 3, AMINO, 4, (CARBETHOXY), 5, METHYLTHIOPHENE TO 140-60DEGREES FOR 10 MIN. ESTERS OF THIENO(3,2,B)PYRROLE, 3, CARBOXYLIC ACID (I) ARE FORMED IN 54-7PERCENT YIELDS. THE STRUCTURE OF THE PREPD. SUBSTANCES WAS CHECKED BY UN., IR., AND EPR SPECTROSCOPY. THUS WERE PREPD. I (R, R PRIME2, R PRIME2, AND DECOMPN. TEMP. GIVEN): ET, PH, ME, 31-2DEGREES; H, PH, ME, 256-80DEGREES; H, PH, H, 270-30DEGREES; H, BRG, MEC SUB6 H SUB4, H, 250-2DEGREES; H, RHU, CLC SUB6 H SUB4, 270-1DEGREES.

UNCLASSIFIED

USSR

UDC: 621.396.677.49

GRINEV, A. Yu.

"Cross-Polarization Emission of Convex Spherical Antennas With Antiphase Field Distribution"

Kiev, IVUZ: Radioelektronika, Vol 15, No 3, Mar 72, pp 308-314

Abstract: The author considers a sharply directional spherical diffraction antenna with continuous distribution of sources (magnetic currents) on a conducting surface. The antenna forms a difference polar diagram in plane $\phi = \pi/2$ with zero in the direction $\theta = 0^\circ$ (see figure) with maximum slope μ in the equisignal direction. Slope μ is given by the formula

$$\mu = \frac{\partial \left| \vec{F}_n^\Delta \left(\frac{\pi}{2}, \theta \right) \right|}{\partial \theta} \Big|_{\theta=\theta_0} \sqrt{G^\Delta \left(\frac{\pi}{2}, \theta_0 \right)},$$

where $\vec{F}_n^\Delta(\theta, \varphi)$ is the normalized vector difference of the polar diagram;

$G^\Delta \left(\frac{\pi}{2}, \theta_0 \right)$ is the directive gain of the antenna with polar diagram in the

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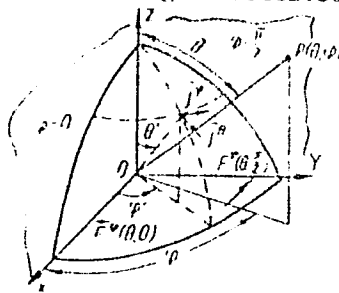
USSR

GRINEV, A. Yu., IVUZ: Radioelektronika, VI 15, 1972, pp 308-314

plane $\phi = \pi/2$ in the direction of the principal maxima; $|\vec{F}_n(\theta, \varphi)| =$

$= \sqrt{(\vec{F}_n, \vec{F}_n^*)^2}; (\vec{F}_n, \vec{F}_n^*)$ is a scalar product. Expressions are derived which

show that the radiation field of the spherical antenna is elliptically polarized (linearly polarized only in the two principal planes) and does not vanish in the plane perpendicular to the antenna bearing plane. It is shown that the presence of an orthogonal component in the field of a spherical antenna leads to wandering of the zero of the polar diagram in the case of asymmetry of the amplitude excitation when there is a change in the polarization properties of the signal received by the antenna.



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USSR

UDC 621.396.677.833.2.061.1

VOSKRESENSKIY, D. I. and GRINEV, A. Yu.

"Synthesis of Spherical Antenna Difference Patterns"

Moscow, Antenny, No 13, 1971, pp 28-42

Abstract: The problem of minimizing the sidelobes with the spherical antenna difference patterns is investigated. The spherical antenna is assumed to have a perfectly conductive surface and is provided with closely spaced diffraction-type emitters.

The graphs obtained by the subject method show several sidelobes of decreasing magnitude. Graphs of the current amplitude and phase distribution along the equator are also given.

Relations between the magnitude of sidelobes, the slope of the main lobes and their width are derived.

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USSR

UDC 621.396.677.833.2

VOSKRESENSKIY, D. I., PONOMAREV, L. I., GRINEV, A. Yu.

"Optimum Sum-Difference Characteristics of Spherical Convex Antennas"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 7, Jul 71, pp 1170-1180

Abstract: The problem of optimizing the sum-difference characteristics of spherical nonsuperdirectional antennas which are a system of slot radiators arranged on a conductive spherical surface is solved by the method of vector eigenfunctions, utilizing the theory of quadratic forms. The maximum directive gain of the effective radiation pattern is found with regard to diffraction phenomena on the surface of the antennas, as well as the maximum directive gain of the difference characteristic in the two principal directions deviating symmetrically from the equal-signal direction, and the slope of the difference radiation pattern in the equal-signal direction. These maxima are compared with the corresponding maximum values for an equivalent flat aperture. It is shown that when the electrical radius is short, a spherical antenna may give somewhat of a gain in the three maxima; when the electrical radius is much greater than $ka = 10$, the maximum directive gains of sum and difference radiation patterns and the slope of the difference

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VOSKRESENSKIY, D. I., et al., Radiotekhnika i Elektronika, Vol 16, No 7, Jul 71, pp 1170-1180

characteristic in the equal-signal direction for the optimum spherical antenna are practically equal to the corresponding values for an equivalent flat aperture. Spherical nonsuperdirectional antennas are synthesized with space-amplitude sum-difference radiation patterns having minimum side emission. It is shown that the sum (difference) radiation pattern may be represented by a Chebyshev polynomial multiplied by some weakly directional factor.

2/2

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USSR

UDC: 621.396:677

GRINEV, A. Yu., FILIPPOV, V. S.

"Investigation of the Characteristics of Convex Monopulse Antennas"

Tr. Mosk. aviats. in-ta (Works of the Moscow Aviation Institute), 1970, vyp. 203, pp 4-22 (from RZh-Radiotekhnika, No 2, Feb 70, Abstract No 2B24)

Translation: Problems of optimum excitation of convex monopulse antennas are considered in the optical physics approximation. An investigation is made of the possibility of approximating the radiation pattern of a convex antenna by using the radiation pattern of a cophased flat aperture; the approximation error is determined. Expressions are derived for the slope of the difference radiation pattern in the direction of the antenna bearing, and for the optimum amplitude-phase distribution of magnetic currents on an ideally conducting spherical antenna surface. Two illustrations, bibliography of seven titles. W. S.

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- 2 -

USSR

UDC: 621.396.677.833.2

GRINEV, A. Yu., PONOMAREV, L. I.

"Optimization of Spherical Monopulse Antennas With Respect to the Slope and Directive Gain of the Difference Characteristic"

Tr. Mosk. aviats. in-ta (Works of the Moscow Aviation Institute), 1970, vyp. 203, pp 23-47 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2B97)

Translation: The formulated problem is solved by the method of vector eigenfunctions for a spherical antenna which is an idealized system of slot radiators located on an ideally conducting surface. A rigorous solution is found for the problem of maximum directive gain for calculating radiation patterns and amplitude-phase distribution; a solution is given for the problem of maximum slope of the difference radiation pattern in the direction of the antenna bearing; the characteristics of optimum spherical antennas are compared with the corresponding characteristics of an equivalent flat aperture. Twelve illustrations, bibliography of seven titles.
N. S.

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USSR

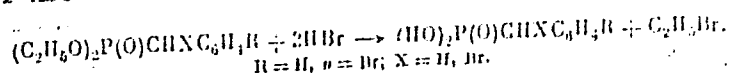
UDC 547.26'118

CHERVENYUK, G. I., and GRINEV, G. V., Chernovitsy State University

"The Effect of Bromine on Diethyl Phosphonates"

Leningrad, Zhurnal Obshechey Khimii, Vol 42(104), Vyo 10, 1972, pp 2183-2186

Abstract: Diethyl phosphonates in dioxane react actively with Br in the presence of light and sa small amounts of water, forming benzylphosphonic acids and ethyl bromide. The reaction proceeds very slowly in the dark and not all in anhydrous dioxane. The yield of phosphonic acids was higher when the aqueous solution of HBr was used. These acids were formed according to



Five acids were synthesized of a general formula $RP(O)(OH)_2$ where $R=C_6H_5CH_2$ (I), $P-BrC_6H_4CH_2$ (II), $C_6H_5CH(Br)$ (III), $P-ClC_6H_4COOCH_2$ (IV), CH_3COOCH_2 (V).

The melting points of acids I-III were: $171-172^\circ$, $186-188^\circ$, $139-142^\circ$, when Br_2 was used; and $170-171^\circ$, $186-189^\circ$, $164-167^\circ$, and $142-144^\circ C$ for acids I, II, $1/2$

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CHERVENYUK, G. I., and GRINEV, G. V., Zhurnal Obshchey Khimii, Vol 42(104),
Vyp 10, 1972, pp 2183-2186

IV, and V, respectively, when HBr was used. All acids were crystalline, soluble in dioxane, ethanol, ethyl acetate, water, benzene, toluene, acetic acid, dichloroethane, and petroleum ether. The structure of the acids was verified by the number of hydroxyl groups, and IR spectra, and by preparing their Pb salts. Characteristics spectral bands for each acid are given.

2/2

USSR

UDC: 539.1.074

GRAMMATIKATI, V. S., GRINEV, M. P., YERSHOVA, Z. F., KOZLOV, L. L.,
LITVINOVA, T. G., MIKHAYLOV, L. M., MOLIN, A. A., PANCHENKOV, G. M.

"Color Indicators for Visual Evaluation of Dose During Radiation
Sterilization"

Dozimetriya i Radiats. Protsessy v Dozimetr. Sistemakh [Dosimetry and
Radiation Processes in Dosimetric Systems -- Collection of Works], Tashkent,
Fan Press, 1972, pp 113-118 (Translated from Referativnyy Zhurnal
Metrologiya i Izmeritel'naya Tekhnika, No 3, 1973, Abstract No 3.32.1403),
from the resume.

Translation: It is suggested that a plasticized PVC film containing an acid-
sensitive dye be used as a color dose indicator for the 0.1-5.0 Mrad range.
The sensitivity of indicators to radiation as a function of film composition
and dye used is studied. Color dose indicators are calibrated using the
ferrosulfate method and calorimetry. A method is suggested for instrumental
testing of changes in the color of indicators using spectrophotometry of
irradiated specimens, allowing doses to be measured with errors of $\pm 10-12\%$.
Practical recommendations are presented for the use of color dose indicators
to check radiation sterilization. 2 figures, 1 biblio. ref.

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1/3 . 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PHOTOINDUCED TRIPLET SINGLET TRANSFER OF ELECTRONIC EXCITATION
ENERGY IN THE LIQUID PHASE -U-
AUTHOR--(05)--BERENFELD, V.M., CHUMAEVSKIY, YE.V., GRINEV, M.P.,
KURYATNIKOV, YU.I., ARTEMYEV, E.T.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 678-82

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--EXCITATION ENERGY, FLUORESCENCE SPECTRUM, BROMINATED ORGANIC
COMPOUND, ANTHRACENE, LIGHT EXCITATION, AROMATIC HYDROCARBON, ELECTRON
SPIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1895

STEP NO--UR/0048/70/034/003/0678/0632

CIRC ACCESSION NO--AP0123682

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123682

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE LIQ. PHASE TRIPLET, SINGLET ENERGY TRANSFER IS AN INTERMOL. RADIATIONLESS TRANSFER OF ELECTRONIC EXCITATION ENERGY FROM THE TRIPLET LEVEL OF THE DONOR MOL. TO THE SINGLET EXCITATION LEVEL OF THE ACCEPTOR MOL. THIS WAS STUDIED IN THE FLUORESCENCE SPECTRUM OF 9,10-DIBROMOANTHRACENE IN BENZENE, SENSITIZED WITH ACPH, EXCITED WITH LIGHT OF 313 NM AT 20 DEGREES. THE CONCN. RANGES OF THE ACCEPTOR AND DONOR WERE 2 TIMES 10 PRIME NEGATIVE 5 MINUS TIMES 10 PRIME NEGATIVE 3, AND 0.1, 0.5 MOLE-1. RESP. THE CONCN. EFFECT ON THE QUANTUM YIELD AND ON THE DECAY TIME OF THE FLUORESCENCE WITH PULSED PHOTOEXCITATIONS WERE STUDIED UNDER STEADY STATE AND NON STEADY STATE CONDITIONS, RESP. WITH INCREASED CONCN. OF THE ACCEPTOR, THE QUENCHING RATE OF THE AFTERGLOW BECOMES HIGHER. THE QUANTUM YIELD RATIO INCREASES WITH THE ACCEPTOR CONCN. APPROACHING A LIMITING VALUE; SIMILAR 0.3 FOR C IS GREATER THAN 3 TIMES 10 PRIME NEGATIVE 3 MOLE-1. BELOW THAT CONCN. THE ENERGY TRANSFER IS COMPETITIVE WITH THE SPONTANEOUS DEACTIVATION PROCESS OF THE TRIPLET ACPH MOL. THE PROCESSES OCCURRING IN THE SOLN. UNDER THE ACTION OF LIGHT ARE DISCUSSED. THE RELATIONS FOR THE INTENSITY OF THE FLUORESCENCE VS. TIME ARE DERIVED IN TERMS OF THE LIFETIME OF THE DONOR TRIPLET MOL., τ_{AOD} , τ_{D} , AS (3 PLUS OR MINUS 10 PERCENT) TIMES 10 NEGATIVE PRIME 7 SEC. THE VALUE OF THE ENERGY TRANSFER CONST., κ_{SUBDA} EQUALS (5 PLUS OR MINUS 0.5) TIMES 10 PRIME 10 L.-MOLE SEC IS CLOSE TO THAT OF THE DIFFUSION CONST. INDICATING THAT THE PROCESS IS A DIFFUSION CONTROLLED ONE. THE STUDY OF THE CONCN.

UNCLASSIFIED

3/3 020

UNCLASSIFIED

PROCESSING DATE--300CT70

CIRC ACCESSION NO--AP0123682

ABSTRACT/EXTRACT--DEPENDENCE OF THE QUANTUM YIELD FOR THE SENSITIZED
FLUORESCENCE UNDER STEADY STATE ILLUMINATION GAVE THE RATE CONST. FOR
THE TRIPLET SINGLET ENERGY TRANSFER, $k_{T \rightarrow S}$ SUBDA EQUALS 1.5 TIMES $k_{S \rightarrow T}$
PRIME 1.- MOLE SEC. THE RATIO $k_{T \rightarrow S} / k_{S \rightarrow T}$ SUBDA IS
APPROXIMATELY EQUAL TO 0.5 INDICATES A HIGH DEGREE OF SPIN ORBITAL
INTERACTION DUE TO THE HALOGEN ATOMS PRESENT IN THE AROMATIC HYDROCARBON
MOL.

UNCLASSIFIED

Surgery

USSR

UDC 616-089.5:623.827

LUSHCHITSKIY, M. A., Maj Gen Med Serv, Doctor of Medical Sciences, POREMBSKIY, O. B., Col Med Serv, Doctor of Medical Sciences, and GRINEV, M. V., Lt Col Med Serv, Doctor of Medical Sciences

"Methods of Anesthesia Suitable for Surgery on Submarines"

Moscow, Voenno-Meditsinskiy Zhurnal, No 6, 1972, pp 68-71

Abstract: The limited medical personnel, equipment, and space available on submarines make inhalation anesthesia infeasible and limit the choice to the following methods. In cases of acute uncomplicated appendicitis -- premedication with long-action barbiturates or dimedrol, local anesthesia with novocain or trimecaine, and right paranephral block. In cases of acute appendicitis with peritonitis -- premedication and local anesthesia combined with intramuscular morphine-scopolamine or with intravenous drip-infusion of sodium thiopental dissolved in alcohol are recommended. In cases of perforated ulcer -- premedication, intravenous thiopental, local anesthesia, and local infiltration anesthesia. In cases of wounds in extremities -- anesthesia with available equipment, intramuscular morphine-scopolamine, and intraosseal anesthesia are suggested. In cases of abdominal wounds requiring laparotomy -- premedication, intravenous thiopental, and local anesthesia. The exact doses, timing, and
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USSR

LUSHCHITSKIY, M. A., et al., Voenno-Meditsinskiy Zhurnal, No 6, 1972, pp 68-71

mode of administration are specified, and suggestions concerning advance preparation of solutions and training of personnel are made.

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1/2 005 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--REACTION OF THALLIUM (III) CHLORIDE WITH SODIUM PYROPHOSPHATE -U-
AUTHOR--(03)-GRINEVA, A.V., ZHUKOVA, G.T., PRESNYAK, N.T.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 58485
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHLORIDE, SODIUM PYROPHOSPHATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/0790 STEP NO--UR/0078/70/015/002/0584/0584
CIRC ACCESSION NO--AP0104236
UNCLASSIFIED

2/2 005

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104236

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TL SUB4(P SUB2 O SUB7) SUB3, NATLP SUB2 O SUB7. 4H SUB2 O (I), AND NA SUB5 TL(P SUB2 O SUB7) SUB2. 8H SUB2 O (II) FORM IN THE TLC SUB3-NA SUB4 P SUB2 O SUB7-H SUB2 O SYSTEM AT DIFFERENT CONC. OF COMPONENTS. THESE COMPODS. ARE SOL. IN DIL. HCL, H SUB2 SO SUB4, AND HNO SUB3, SLIGHTLY SOL. IN H SUB2 O, AND INSOL. IN ORG. SOLVENT. THERMOGRAPHS OF I AND II SH4W LOSS OF H SUB2 O OF CRYSTN. AT 180 AND 220DEGREES, RESP., AND P4LYMORPHOUS TRANSITION AT 470 AND 450DEGREES, RESP. NATLP SUB2 O SUB7 MELTS AT 580 AND NA SUB5 TL(P SUB2 O SUB7) SUB2 AT 650DEGREES. AT GREATER THAN 770DEGREES THE COMPODS. DECOMP. WITH REON. OF TL(III) TO TL(I).

UNCLASSIFIED

USSR

UDC 581(17/12)

ANDREYEVA, I. N., and GRINEVA, G. M., Institute of Plant Physiology imeni K. A. Timiryazev, Academy of Sciences USSR

"Ultrastructure of the Endoplasmic Reticulum in Corn Root Cells Under Anaerobic Conditions"

Moscow, Fiziologiya Rasteniy, Vol 17, No 5, Sep/Oct 70, pp 956-961

Abstract: Two-week-old corn plants were exposed to hypoxia by periodically passing pure gaseous nitrogen through the nutrient medium containing the plants for 24 to 36 hours. The anaerobic conditions caused an increase in the number of membranes of the rough endoplasmic reticulum in the apical zone of the root cells. The membrane profiles were not scattered in disorderly fashion in the cells but were rather arranged in bundles containing 5 to 12 profiles parallel to one another. There were also concentric, multilayered, membrane-like bodies of rough reticulum containing mitochondria, Golgi bodies, and dense granulated cytoplasm matrices. Exposure to hypoxia for 48 to 72 hours produced more pronounced changes, including swelling of the cisterns of the reticulum, formation of numerous vacuoles in the cytoplasm, and appearance of large drops. The mitochondria were very close to the smooth reticulum

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USSR

ANDREYEVA, I. N., and GRINEVA, G. M., Fiziologiya Rasteniy, Vol 17, No 5, Sep/Oct 70, pp 956-961

membranes. These changes in the membrane structure of the endoplasmic reticulum are regarded as a nonspecific response of the cells to an oxygen insufficiency, comparable to that occurring in plant and animal cells following exposure to other pathological factors.

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USSR

UDC 621.396.677(02) 6

ARDAB'YEVSKIY, A. I., VOLKOV, O. A., VOSKRESENSKIY, D. I., GOSTYUKHIN, V. L., GRANOVSKAYA, R. A., GRINEVA, K. I., KRITSYN, V. A., MYAKISHEV, B. YA., FILIPPOV, V. S., CHEBYSHEV, V. V.

"Microwave Antennas and Devices. Calculation and Design of Antenna Arrays and their Radiating Elements. Textbook for Students at the Radiotechnical Specialized Institutions of Higher Learning"

Antenny i ustroystva SVCh. Raschet i proyektirovaniye antenykh reshetok i ikh izluchayushchikh elementov. Uchebn. posobiye dlya stud. radiotekhn. spets. vyzov (cf. English above), Moscow, Soviet Radio, 1972, 320 pp, ill., 75 k. (from RZh-Radiotekhnika, No 6, Jun 72, Abstract No 5B32K)

Translation: Methods of calculating the basic parameters of antenna arrays with electric rocking of the radiation pattern and frequency and commutation methods of controlling the radiation pattern are discussed. A study is made of the structure of the optimal arrays with Dolf-Chebyshev distribution, the design of irised-wave guide and horn arrays and also methods of calculating the array elements: dielectric, rod, spiral, horn and director antennas.

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- 9 -

USSR

UDC 541.15:547.455

KOCHETKOV, N. K., KUDRYASHOV, L. I., CHLENOV, M. A., and GRINEVA, L. P.,
Institute of Organic Chemistry, Academy of Sciences USSR imeni N. D.
Zelinskiy

"Radiolysis of Aqueous Solutions of Some Organic Monophosphates"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2071-2076

Abstract: A study was conducted on the radiation-induced chemical conversion of a number of organic monophosphates. Cyclohexyl monophosphate and glucose monophosphate containing the phosphate group in 1 and 6 positions were selected for the study. Determinations were made of the decomposition yields of the dipotassium salt of α -D-glucose-1 phosphate (G-1-P) and disodium salt of D-glucose-6 phosphate (G-6-P) as well as of the yields of inorganic phosphate on radiolysis of these salts and cyclohexyl phosphate disodium salt. The OH radical appears to play the dominant role in the process of radiation dephosphorylation. The formation of inorganic phosphorus is not followed by the formation of glucose. The evaluation of the total amount of neutral sugars in the case of both sugar phosphates has shown that the yields correlate well with those of inorganic phosphate. The yield of reducing-type sugars was reduced to one half and equaled 1.0 and 0.5 for dipotassium salt
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USSR

KOCHETKOV, N. K., et al., Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9,
pp 2071-2076

of α -glucose-1 phosphate and disodium salt of D-glucose-6 phosphate, respectively. The neutral salts included desoxy- and desoxyketo compounds. Further studies of radiolysis products and related regularities will provide a clearer pattern of radiative dephosphorylation in terms of biological activity.

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- 64 -

USSR

UDC 547.854:547.963.3

GRINEVA, N. I., and LOMAKINA, T. S., Novosibirsk Institute of Organic Chemistry
Novosibirsk, Siberian Branch of the Academy of Sciences USSR

"Alkylating Derivatives of Components of Nucleic Acids. XVI. 5'-/3-(N-2-Chloroethyl-N-methylamino)propyl/phosphamides of Nucleosides and Oligonucleotides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2551-2555

Abstract: The 5'-/3-(N-2-chloroethyl-N-methylamino)propyl/phosphamides of uridine, adenosine, trideoxythymidylate, and trideoxyadenylate were prepared by reacting 3-(N-chloroethyl-N-methylamino)propylamine with the mixed anhydride formed by the 5'-phosphorylnucleotide or oligonucleotide and diphenylphosphoric acid. The phosphamide derived from uridine alkylated guanosine with the formation of 7-beta-(N-uridylyl-5'-(P→N)-aminopropyl-N-methylamino)-ethylguanosine.

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- 31 -

USSR

UDC 547.854:547.953.3

GRINEVA, N. I., LOMAKINA, T. S., Novosibirsk Institute of Organic Chemistry
Siberian Department of the Academy of Sciences of the USSR

"Alkylating Derivatives of Nucleic Acid Components. XIV. Synthesis of
5'-Phosphamides of Oligonucleotides, Derivatives of 4-(N-2-chloroethyl
N-Methylamino)benzylamino"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul 72, pp 1630-1634

Abstract: The paper describes the synthesis of 4-(N-2-chloroethyl N-methylamino)benzyl-5'-phosphamides, derivatives of thymidine and adenine oligonucleotides in which the oligonucleotide part of the molecule may determine the specificity of modification of nucleic acids by such reagents. It was found that activation of the internucleotide phosphoryl group with formation of active diphenyl pyrophosphate of the oligonucleotide takes place 8-10 times more slowly than activation of the 5'-phosphoryl group.

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- 37 -

USSR

UDC: 547.963.3:547.854:547.222

GRINEVA, N. I.; ZARYTOVA, V. F., and KNORRE, D. G., Novosibirsk Institute of Organic Chemistry, Academy of Sciences USSR, Siberian Department

"Alkylating Derivatives of Nucleic Acid Components 7. Methyl 2',3'-O-[4-(N-2-Chloroethyl-N-methylamino)benzylidene]-uridine-5'-Phosphate"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 215-222

Abstract: Preparation was studied of the title compound (I) to be used as alkylating agent of nucleic acids in aqueous solution. Mixing methyl uridine-5'-phosphate (II) and 4-(N-2-chloroethyl-N-methylamino)benzaldehyde (III) in dimethylformamide(DMF) at 70° with 2,2-dimethoxypropane(DMP) and trifluoroacetic acid, after one day at room temperature yielded methyl 2',3'-O-(isopropylidene)uridine-5'-phosphate (IV), along with I and II in various proportions. The yields of the three products varied, depending on concentration of III and the III/DMP ratio. Study of the reaction kinetics established that two side reactions - hydrolysis of I formed in the main reaction and alcoholysis of D.P by II-occur concurrently with formation of I. The study revealed that a shorter reaction time promotes a significant decrease in the content of IV. Kinetic curves of accumulation of various reaction products are shown. Optimum conditions (II 0.115 M, III 0.575 M, DMP 0.46 M,

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GRINEVA, N. I., Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 215-222

trifluoroacetic acid 1.85 M, 45 min) were found for the preparation of I in 84% yield, of the product containing 88% I and a maximum of 5% II. Purification by paper chromatography with subsequent elution with ethanol gave 45-00% of the chromatographically homogeneous substance containing 70% I. Kinetics of I hydrolysis was studied in aqueous solution at 23° and at different pH values to evaluate the stability of the benzylidene bond in I; this is an important characteristic of an alkylating agent. Kinetic curves of I hydrolysis and the plot of the apparent rate constant of the benzylidene bond hydrolysis versus pH show that the pH of alkylation should not be below six. The pK value of the N-2-chloroethyl-N-methylamino group protonation was calculated to be 3.1.

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- 51 -

Acc. Nr:

AP0044690

GRINEVA, N. I.

Ref. Code: UR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1,
pp 30-36

THE INTERACTION OF TRANSFER RNA WITH ACETALS
OF 4-(N-2-CHLOROETHYL-N-METHYLAMINO)-BENZALDEHYDES—
DERIVATIVES OF URIDINE AND URIDINE-5'-METHYLPHOSPHATE

Belikova, A. M.; Vakhrusheva, T. Ye.; Vlasov, V. V.;
Grineva, N. I.; Zarytova, V. F.; Knorre, D. G.; Teplova, N. M.

Institute of Organic Chemistry, Siberian Branch of the Academy of Sciences, USSR,
NOVOSIBIRSK

It has been shown that the acetals of 4-(N-2-chloroethyl-N-methylamino)-benzaldehyde (RCI) — derivatives of uridine (URCI) and uridine-5'-methylphosphate (mepURCI) do alkylate tRNA. The efficiencies of the reagents are determined as a ratio of the velocity of tRNA modification to the velocity of all by-processes. The efficiencies of URCI and

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RCI are of the same order of magnitude and two orders greater, respectively, as compared with that of mepURCI. In the presence of *tris* the efficiency of URCI decreases significantly and that of mepURCI is altered only slightly. The efficiency of URCI decreases in the presence of mepU due to the interaction of an intermediate cation with primary phosphates of mepU. It suggests that the efficiency of mepURCI is low due to the presence of primary phosphate in its molecule. The quantitative analysis of the data obtained makes it possible to conclude that the interaction of mepUR⁺ with phosphate is an intramolecular process.

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19771424

B

Genetics

USSR

GRINEVA, N. I., KNORRE, D. G., SENZHENKO, L. P., and TEPLOVA, N. M., Institute of Organic Chemistry, Siberian Department of the Academy of Sciences USSR

"Modification of Transfer RNA by 2',3'-O[4-(N-2-Chloroethyl-N-Methylamino)-Benzylidene]-Uridine-5'-Methylphosphate"

Moscow, Molekulyarnaya Biologiya, No 3, 1970, pp 307-312

Abstract: The effect of temperature, tRNA concentration and pH on the kinetics of the reaction of tRNA with NpURCl in an aqueous solution was studied. The efficiency of alkylation (ratio of the rate of alkylation of tRNA to the total rates of all the secondary conversions of the reagent) was virtually independent of temperatures ranging from 20 to 50°C and proportional to the initial tRNA concentration. Alkylation efficiency decreased sharply in the presence of magnesium salts. The rate and efficiency of alkylation was also independent of pH in the 6.0 to 7.5 range. Judging by the data of chromatography modified by 10% tRNA (Tomlinson-Tener system), alkylation did not rupture the polynucleotide chain.

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1/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--ALKYLATING DERIVATIVES ON NUCLEIC ACID COMPONENTS. VII. METHYL 2
PRIME, 3 PRIME, O, 4, N, 2, CHLOROETHYL, N, METHYLAMINO, BENZYLIDENE, URIDINES 5
AUTHOR--(03)-GRINEVA, N.I., ZARYTOVA, V.F., KNORRE, D.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(1), 215-22

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYLATION, NUCLEIC ACID, PHOSPHATE ESTER, AMINE DERIVATIVE,
CHLORINATED ORGANIC COMPOUND, HYDROLYSIS, PAPER CHROMATOGRAPHY, ACETAL,
CHEMICAL REACTION KINETICS, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1992/1751

STEP NO--UR/0079/70/040/001/0215/0222

CIRC ACCESSION NO--AP0112737

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112737

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KEEPING NH SUB4 URIDINE 5
 PRIME, PHOSPHATE ME ESTER IN ME SUB2 CO WITH ME SUB2 C-(OME) SUB2 AND CF
 SUB3 CO SUB2 H 3 HR GAVE AFTER TREATMENT WITH ET SUB3 N AND REPPTN. OF
 THE PRODUCT FROM ME OH WITH ET SUB2 O THE ME ESTER OF 2 PRIME, 3
 PRIME, O, ISOPROPYLIDENEURIDINE 5 PRIME, PHOSPHATE (I) WHICH IN 2.5 HR AT
 70DEGREES IN 50PERCENT AQ. ACOH GAVE URIDINE 5 PRIME, PHOSPHATE ME ESTER.
 THE KINETIC DATA FOR THE REACTION OF THE LATTER WITH ME SUB2 C(OME)
 SUB2 WERE PRESENTED. THE REACTION OF THIS ESTER WITH 4CLCH SUB2 CH
 SUB2-NMEC SUB6 H SUB4 CHO (II) IN ME SUB2 NCHO AT MINUS 70DEGREES IN THE
 PRESENCE OF ME SUB2 C(OME) SUB2 AND CF SUB3 CO SUB2 H AT MINUS
 70DEGREES, THEN 1 DAY AT ROOM TEMP., GAVE SOME UNIDENTIFIED MATERIAL, ME
 ESTER OF 2 PRIME, 3 PRIME, O, (4, (N, 2,
 CHLOROETHYL, N, METHYLAMINO) BENZYLIDENE) URIDINE 5 PRIME, PHOSPHATE AND I,
 WHICH WERE SPED. BY PAPER CHROMATOG. HYDROLYSIS OF THE PRODUCT IN 0.01
 N HCL 0.5 HR GAVE URIDINE 5 PRIME, PHOSPHATE ME ESTER AND THE KINETIC
 DATA WERE SHOWN. REACTION OF URIDINE 5 PRIME, PHOSPHATE ME ESTER WITH II
 LEADS TO 3 TYPES OF PRODUCTS: AN ACETAL, PRODUCTS OF HYDROLYSIS AND
 PRODUCTS OF ALCOHOLYSIS. FACILITY: NOVOSIBIRSK. INST. ORG.
 KHIM., NOVOSIBIRSK, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MODIFICATION OF TRANSFER RNA BY 2, PRIME, 3
PRIME, 0, (4, (N, 2, CHLOROETHYL, N, METHYLAMINO) BENZYLIDENE), URIDINE, 5
AUTHOR--(04)-GRINEVA, N.I., KNORRE, D.G., SENZHENKO, L.P., TEPLOVA, N.M.
COUNTRY OF INFO--USSR
SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 3, PP 307-312
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RNA, ALKYLATION, CHEMICAL KINETICS, CHROMATOGRAPHIC ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0155 STEP NO--UR/0463/70/004/003/0307/0312
CIRC ACCESSION NO--AP0120855
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120855

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF SOME FACTORS HAVE BEEN STUDIED UPON ALKYLATION KINETICS OF TRNA WITH 2 PRIME, 3 PRIME, 0(4, (N, 2, CHLORETHYL, N, METHYLAMINO), BENZILIDENE), URIDINE, 5 PRIME, METHYLPHOSPHATE IN WATER SOLUTION. IT HAS BEEN SHOWN THAT THE EFFICIENCY OF ALKYLATION (THE RATIO OF THE TRNA ALKYLATION RATE TO THAT OF ALL BY PROCESSES) DOES NOT DEPEND SIGNIFICANTLY ON THE TEMPERATURE IN THE RANGE 20-50DEGREES AND IS PROPORTIONAL TO INITIAL TRNA CONCENTRATION. THE EFFICIENCY OF ALKYLATION MARDEDLY DECREASES IN THE PRESENCE OF MAGNESIUM SALTS. THE RATE AND THE EFFICIENCY OF ALKYLATION DOES NOT DEPEND ON PH WITHIN THE RANGE 6,0-7,5. AS REVEALED BY CHROMATOGRAPHY AFTER TOMLINSON AND TENER THE POLYNUCLEOTIDE CHAIN OF TRNA ALKYLATED FOR 10PERCENT DOES REMAIN INTACT. FACILITY: INSTITUTE OF ORGANIC CHEMISTRY, SIBERIAN BRANCH OF THE ACADEMY OF SCIENCES, USSR, NOVOSIBIRSK.

UNCLASSIFIED

1/2 006

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--POSSIBLE USE OF VARIOUS PRINCIPLES OF IMPROVING THE ADHERENCE OF
PRINTING INKS FOR METALS AND GLASS -U-
AUTHOR--(04)-GUREVICH, YE.I., KARPILOVSKIY, P., POLYAKOV, V., GRINEVA, YE.

COUNTRY OF INFO--USSR

SOURCE--POLIGRAFIYA 1970, (2), 33-5

DATE PUBLISHED-----70

SUBJECT AREAS--METHODS AND EQUIPMENT

TOPIC TAGS--PRINTING INK, ALUMINOSILICATE GLASS, ADHESION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0725

STEP NO--UR/0543/70/000/002/0033/0035

CIRC ACCESSION NO--AP0134460

UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134460

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE USE OF
POLY(ALUMINOPHENYLSILOXANE) AS THE HARDENER FOR EPOXY RESINS USED IN
PRINTING INKS FOR NONPOROUS SURFACES IS DESCRIBED.

UNCLASSIFIED

USSR

UDC: 621.317.7(02)

KARANDEYEV, K. B., GRINEVICH, F. B., GROKHOL'SKIY, A. L. et al.

"Electronic High-Speed Balanced-Bridge Instruments"

Bystrodeystvuyushchiye elektronnyye kompensatsionno-mostovyye pribory (cf. English above), Moscow, "Energia", 1970, 135 pp, ill. 35 k. (from REh-Radiotekhnika, No 12, Dec 70, Abstract No 12A294 K)

Translation: The book deals with monitoring and measuring equipment designed for measuring the components of impedance under a variety of experimental and production conditions. The time for a single measurement of impedance parameters may be reduced to hundredths of a millisecond, and measurement error may be held down to tenths of a percent. The principles of construction of high-speed electronic balanced-bridge instruments are set forth, their fundamental properties are outlined and their specific elements are given, and schematics are analyzed together with the characteristics of a number of specific devices. Annotation.

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- 100 -

USSR

UDC: 621.374.32

GRINEVICH, F. B., CHEBOTAREV, A. V.

"A Reversible Binary-Digital Counter"

USSR Author's Certificate No 249103, filed 14 May 62, published 21 Jan 70
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11,
Nov 70, Abstract No 11A43 P)

Translation: This Author's Certificate introduces a reversible binary-digital counter which contains flip-flops and AND and OR circuits. To simplify the circuit while realizing 1-2-4-2 code, one of the outputs of the first flip-flop for the tetrad is connected to one of the inputs of the fourth flip-flop, whose outputs with zero and one potential in the initial state are connected respectively to one of the inputs of the second and third flip-flops, and to the interlock key for the input of the second flip-flop. One illustration. V. M.

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- 26 -

AA9027594

GRINEVICH FB

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 12,

1216122 DOUBLE BRIDGE WITH RIGHT INDUCTIVE COUPLING,

in which amplifier (8) output transformer (15) secondary winding is inserted between the supply voltage transformer (11) secondary winding and the measured impedance. The amplifier (8) input is connected to the measured impedance (3) and to the nonearthed end of supply voltage transformer secondary winding (10), and the second amplifier (9) output transformer (16) secondary winding is inserted between the measured impedance and the current comparator (12) winding. The second amplifier (9) input is connected to the measured impedance and to the junction between the above windings. In addition the amplifier output transformers carry three windings, with their third windings connected to two balancing resistors connected in series with the current comparator windings and the supply voltage transformer respectively. This widens the measured quantities range, reduces the measurement error and improves the accuracy of measurement of small and very small complex impedances.

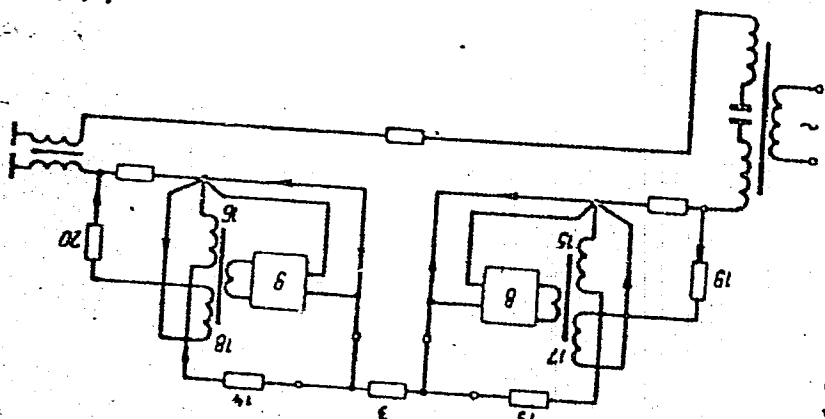
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2.2.67 as 1130518/26-10. GRINEVICH, F. B.
INSTITUTE OF ELECTRODYNAMICS OF THE UKRAINIAN AC.
OF SC. (5.7.68) Bul 14/11.4.68. Cl. 21 e.
Inc. Cl. G OI r.

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1936 2187

1/2 026

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--DIFFUSION AND ELECTRICAL TRANSPORT OF SILVER IN LEAD -U-

AUTHOR--(03)-KUZMENKO, P.P., GRINEVICH, G.P., DANILCHERO, B.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29, (2), 313-323

DATE PUBLISHED-----70

6

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--METAL DIFFUSION, LEAD ALLOY, SILVER CONTAINING ALLOY,
ACTIVATION ENERGY, ELECTRON MOBILITY, ELECTRIC POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0340

STEP NO--UR/0126/70/029/002/0318/0323

CIRC ACCESSION NO--AP0129572

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129572

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

ABSTRACT. THE DIFFUSION AND ELECTRICAL TRANSPORT OF AG ATOMS IN PB WERE STUDIED BY THE INTEGRAL RESIDUE METHOD. IN THE DIFFUSION EQUATION, THE PRE EXPONENTIAL FACTOR IS 6.4 TIMES 10¹⁰ PRIME NEGATIVE 2 CM PRIME 2-SEC AND THE ACTIVATION ENERGY 14.4 KCAL-MOLE. AT TEMP. BELOW 280DEGREESC THE AG TENDS TO MOVE TOWARDS THE ANODE AND AT HIGHER TEMP. TOWARDS THE CATHODE. THE INVERSION IN THE DIRECTION OF ELECTRICAL TRANSPORT WAS ATTRIBUTED TO THE DIFFERENT TEMP. DEPENDENCE IN THE INTERACTION BETWEEN THE DIFFUSING AG IONS AND ELECTRONS AND HOLES, RESP.

UNCLASSIFIED

Pharmacology and Toxicology

USSR

UDC 615.89 (083.1) 681.32

GRINEVICH, M. A. and BREKHMAN, I. I., Institute of Biologically Active Substances, Far-Eastern Scientific Center, Academy of Sciences USSR, Vladivostok

"Investigation of Complex Prescriptions of Eastern Medicine and Their Components With the Help of Electronic Computer. Report 4. Analysis of Prescriptions Intended for the Treatment of Certain Diseases"

Leningrad, Rastitel'nyye Resursy, Vol 7, No 4, 1971, pp 500-502

Abstract: Ten groups of prescriptions containing medicinal plants most frequently used by the traditional medicine of the East for the treatment of anemia, nephritis, rheumatism, diabetes, sterility, hepatic disorders, nervous diseases, malignancies, hypertension, and tuberculosis were studied. It was established that the number of prescriptions in any one group fluctuated between 5 and 14, with the total number of plants varying from 20 to 66, and averaging 6-9 plants in a single prescription. With the use of the Minsk-22 computer, it was possible to determine the number of plants most frequently encountered in the prescriptions used in the treatment of a given disease. It was found that the plants most frequently encountered in various groups of prescriptions are *Glycyrrhiza uralensis*, *Rehmannia*
1/2

USSR

GRINEVICH, M. A. and BREKHMEN, I. I., Rastitel'nyye Resursy, Vol 7, No 4, 1971, pp 500-502

chinensis, Poria cocos, Panax ginseng, and others. Tonic properties are ascribed to almost all of them, indicating the important role which tonic drugs play in the traditional medicine of the Southeastern countries. Further research is urged.

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USSR

UDC 615.89+681.2

GRINEVICH, M. A., and BREKHMEN, I. I., Institute of Biologically Active Substances, Far Eastern Affiliate of the Academy of Sciences USSR, Vladivostok

"Investigation of Complex Formulations of Oriental Medicines and Their Components, Communication 3. Tonic Substances in the Medical Therapy of Oriental Medicine"

Leningrad, Rastitelnyye Resursy, Vol 6, No 4, 1970, pp 481-485

Abstract: The authors distinguish between "stimulating" and "tonic" agents in medical formulations. Medical substances containing plant- or animal-derived tonic components occur frequently in oriental formulations for medical substances, which distinguishes the latter from American or European prescriptions. The compositions of a large number of oriental medicines (some of which have been in use for thousands of years) were studied and the data evaluated by computer. Some 45 plants were identified by their tonic effect. The authors see future tasks in qualitatively perfecting the tonic materials already known, rather than in attempting to find new sources for such materials.

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USSR

UDC 615.89+681.142

GRINEVICH, M. A. and BREKHMAN, I. I., Institute of Biologically Active Substances, Far-Eastern Branch, Siberian Department, Academy of Sciences USSR, Vladivostok

"Study of the Complex Prescriptions of Eastern Medicine and Their Components Using a Computer. Report 2. Thirty Medicinal Plants Used Most Frequently in the Traditional Medicine of the Countries of South-East Asia"

Leningrad, Rastitelnyye Resursy, Vol 6, No 2, 1970, pp 153-157

Abstract: A total of 158 complex prescriptions of Eastern medicine, made up of 233 medicinal plants were analyzed. The following characteristics were determined: frequency of appearance in prescriptions, the frequency of prescriptions with two types of action, i.e. stimulating and hypoglycemic, and the frequency of use of plants in different illnesses. The sum of these indices is a cumulative index; varying from 3 to 416, but for the majority of plants (more than 200) not exceeding 30. Thirty plants have a cumulative index above 30. The first ten plants have a cumulative index above 100; the second ten - an index of 51-100, and the third ten - an index no less than 30. *Panax ginseng* is in third place (cumulative index of 252), and *Glycyrrhiza uralensis* Fisch is first (416), *G. uralensis* has been used for about 5000 years in China, Korea, Vietnam, Burma, India, Tibet, etc. for cure of lung and stomach diseases. A total of 18 plants on the list are food plants,

USSR

GRINEVICH, M. A. and BREKHMEN, I. I., Rastitelnyye Resursy, Vol 6, No 2, 1970,
pp 153-157

12 have a tonic effect, and only one plant, *Aconitum fischeri*, is poisonous. All
these plants deserve detailed pharmacological, chemical and other studies.

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1/3 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--COMPUTER STUDY OF COMPOUND DRUGS AND THEIR COMPONENTS USED IN
EASTERN MEDICINE REPORT 1 GENERAL CHARACTERISTICS OF THE PRINCIPLES AND
AUTHOR--(03)--GRINEVICH, M.A., ZARVA, L.A., BERKMAN, I.I.

COUNTRY OF INFO--USSR

6

SOURCE--LENINGRAD, RASTITELNYYE RESURSY, VOL 6, NO 1, 1970, PP 45-53

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DRUG TESTING, PROCESSED PLANT PRODUCT, PROCESSED ANIMAL
PRODUCT, COMPUTER APPLICAITON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAHE--3001/0846

STEP NO--UR/0503/70/006/001/0045/0053

CIRC ACCESSION NO--AP0126522

UNCLASSIFIED

2/3 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0126522
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE TRADITIONAL MEDICINAL THERAPY OF EASTERN MEDICINE IS OF PARTICULAR INTEREST BECAUSE COMPOUND DRUGS INCLUDING 15-20 INGREDIENTS WERE USED. THE PRESCRIPTIONS INCLUDE SEVERAL PLANTS (UP TO 7) WITH THE SAME ACTION, APPARENTLY INCREASING THE GENERAL EFFECT. MORE THAN 200 PRESCRIPTIONS FROM SOUTHEAST ASIA AND FROM THE INSTITUTE OF EASTERN MEDICINE OF THE DEMOCRATIC REPUBLIC OF VIETNAM IN HANOI WERE ANALYZED BY COMPUTER. IT WAS ESTABLISHED THAT:

- 1) MOST OF THE PRESCRIPTIONS HAVE FOUR TO ELEVEN INGREDIENTS;
- 2) THE PRESCRIPTIONS ARE MOSTLY DESIGNED FOR THERAPY OF MALIGNANT NEOPLASM, HYPERTENSION, TUBERCULOSIS, ANEMIA, NEPHRITIS, DIABETES AND ATHEROSCLEROSIS;
- 3) THE MOST COMPLICATED COMPOUNDS ARE FOR PSYCHASTHENIA, STERILITY, ATHEROSCLEROSIS AND HYPERTENSION;
- 4) THE PLANTS MOSTLY USED ARE ANCIENT FLOWERING PLANTS (MESANTHOPHYTA); AND
- 5) THE UNDER GROUND PARTS OF PLANT SPECIES AND THE REPRODUCTIVE ORGANS OF YOUNGER SPECIES ARE USED, CONTRARY TO THE MODERN USE OF MEDICINAL PLANTS. IT HAS BEEN STATED THAT THE PLANTS USED IN EASTERN MEDICINE ARE NOT RICH IN ALKALOIDS, BUT MOSTLY PLANTS CONTAINING GLUCOSIDES, COUMARIN, FLAVONOIDS, ETC. WATER EXTRACTS ARE ADMINISTERED PER OS AND IN RELATIVELY HIGH DOSES (UP TO 10 G), DUE TO THE LOW ALKALOID CONTENT. THIS IS ALL CONTRARY TO THE ACCEPTED USE OF MEDICINAL PLANTS. PLANTS WITH A TONIC EFFECT ARE MOST FREQUENTLY USED IN EASTERN MEDICINE, FOLLOWED BY PLANTS WITH DIURETIC, ANTITOXIC, SEDATIVE, EFFECTS, AND THEN BY PLANTS WITH STIMULATING EFFECT. SOME MEDICINES OF ANIMAL ORIGIN ARE USED ALSO (BONES OF TIGER, MONKEY, LIZZARD, ETC.).

UNCLASSIFIED

3/3 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0126522

ABSTRACT/EXTRACT--FACILITY: INSTITUTE OF BIOLOGICALLY ACTIVE SUBSTANCES,
AND DEPARTMENT OF AUTOMATION AND TECHNICAL CYBERNETICS, FAR EASTERN
BRANCH OF ACADEMY OF SCIENCES USSR, VLADIVOSTOK.

UNCLASSIFIED

USSR

UDC: 615.89+681.142

~~GRINEVICH~~ M. A., ZARVA, L. A., and BERKIMAN, I. I., Institute of Biologically Active Substances, and Department of Automation and Technical Cybernetics, Far-Eastern Branch of Academy of Sciences USSR, Vladivostok

"Computer Study of Compound Drugs and Their Components Used in Eastern Medicine Report 1 General Characteristics of the Principles and Structure of Medicinal Therapy in Eastern Medicine"

Leningrad, Rastitelnyye Resursy, Vol 6, No 1, 1970, pp 45-53

Abstract: The traditional medicinal therapy of eastern medicine is of particular interest because compound drugs including 15-20 ingredients were used. The prescriptions include several plants (up to 7) with the same action, apparently increasing the general effect. More than 200 prescriptions from Southeast Asia and from the Institute of Eastern Medicine of the Democratic Republic of Vietnam in Hanoi were analyzed by computer. It was established that: 1) most of the prescriptions have four to eleven ingredients; 2) the prescriptions are mostly designed for therapy of malignant neoplasm, hypertension, tuberculosis, anemia, nephritis, diabetes and atherosclerosis; 3) the most complicated compounds are for psychasthenia, sterility, atherosclerosis and hypertension; 4) the plants mostly used are ancient flowering plants (Mesanthophyta); and 5) the underground parts of plant species and the reproductive organs of younger species are used, contrary to the modern use of medicinal plants. It has been

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UDC 621.791.011:546.821:546.833

USSR

BLASHCHUK, V. YE., GUREVICH, S.M., ZOIOVA, L.M., LAJGER, N.A., ~~GRINEVICH, V.V.~~
and STENDER, H. V., Kiev

"Weldability and Corrosion Resistance of an Alloy of Titanium With 5% Ta"
Kiev, Avtomaticheskaya Svarka, No 6, Jun 71, pp 16-18

Abstract: Development of new chemical products, particularly those in which the basic component of the medium is hydrochloric acid, and introduction of rational technological processes requires the use of new corrosion-resistant structural materials. One of these is titanium and its alloys. An alloy of the system titanium - 5% tantalum with a stable alpha-solid solution has been designated for use in hydrochloric acid in the presence of oxidizers at an elevated temperature. Production of this alloy has been mastered and designated alloy grade 4204. The corrosion resistance of alloys 4204, VT1, and 07K and their weld joints was studied in 18% HCl at 90°C and with a continuous flow of chlorine gas at the rate of 70 ml/min. It was found that alloy 4204 possesses higher corrosion stability than alloys 07K and VT1. 4 figures, 1 table, 7 bibliographical references.

1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ON STUDYING ALLERGY IN PATIENTS WITH RHEUMATISM BY MEANS OF IN
VITRO LEUCOCYTE INJURY REACTION -U-
AUTHOR--GRINEVICH, YU.A. C

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 2, PP 73-76

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ALLERGIC DISEASE, RHEUMATIC DISEASE, LEUKOCYTE, PHAGOCYTOSIS,
IMMUNITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1981/0795

STEP NO--UR/0475/70/000/002/0073/0076

CIRC ACCESSION NO--AP0052232

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0052232

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTIVITY WAS STUDIED OF NEUTROPHILIC LEUCOCYTES IN RHEUMATIC PATIENTS BY MEANS OF CONTACT WITH STREPTOCOCCAL ALLERGEN IN VITRO. ONE ALSO STUDIED FACTORS OF HUMORAL (PROPERDIN LEVEL, COMPLEMENT TITER) AND CELLULAR (PHAGOCYTTIC ACTIVITY OF LEUCOCYTES) IMMUNITY. RESULTS INDICATE THAT THE MAJORITY OF PATIENTS WITH RECURRENT RHEUMOCARDITIS (PROTRACTED, LATENT COURSE) SHOW BOTH A SPECIFIC REORGANIZATION OF THE REACTIVITY OF NEUTROPHILIC LEUCOCYTES AND A DECREASE OF HUMORAL AND CELLULAR FACTORS OF IMMUNITY.

UNCLASSIFIED

USSR

UDC 616.981.42-036.22-022.39

SLESARENKO, V. V., SEREBRENNIKOVA, S. S., and GRINFEL'D, L. A., Republic Sanitary Epidemiological Station, Ukrainian SSR, and Odesskaya Oblast Sanitary Epidemiological Station

"An Outbreak of Brucellosis Associated With the Importation of Sick Animals"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunologii, No 9, Sep 70, pp 107-109

Abstract: The danger of epidemic outbreaks of brucellosis which may develop when young cattle are brought from brucellosis-infested areas into brucellosis-free territory is noted. It is imperative that veterinary and sanitation specialists conduct various safety measures aimed at the prevention, timely discovery, and rapid elimination of the focus of infection. These measures include thorough examination of livestock for brucellosis at the time of entry and one month later, using serological and allergic methods. Depending on the results of the examination, the entire herd may have to be kept under quarantine until the first litter is born at which time all aborted animals should be examined bacteriologically. Clinical and anamnestic examination of all farm workers should be carried out routinely.

1/1

Titanium

USSR

UDC: 621.791:669.295

RUSSO, V.L. (Doctor of Techn. Sciences), KUDRYAROV, B.V. and ISKOK, B.B. (Candidates of Techn. Sciences), NIKOLAYEV, A.A., POLYAKOV, V.M., BARMAN, Z.M., LYAMIN, A.M., and GREENPEL'D, R.A. (Engineers)

"Semi-Automatic Butt Welding of Heavy-Gage Titanium Alloys Without Grooving"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21.

Abstract: The most advanced welding techniques are those which provide high-capacity joints with geometric shapes offering maximum strength of the weld metal interlayer on contact with the much stronger base metal. This article discusses manual consumable-electrode welding technology for butt joints of titanium alloy plates, 20 to 100 mm thick. The test material was VT5 titanium alpha-alloy (base metal) with a tensile strength from 75 to 80 kg/cm². VT1 alloy was the filler wire (tensile strength 40-43 kg/cm²). A formula is given for calculating the value at which the weld joint tensile strength will be equal to that of the base metal. A curve is shown to demonstrate the effect of interlayer dimensions on the tensile strength of the weld. The mechanical properties of the interlayer are generally determined by two factors: the properties of the filler or electrode metal (weld metal) and the shape of the base metal in the weld metal. Ultrasonic quality control of the test welds revealed faulty fusion in non-weld areas. Use was made of a special jig

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JSSR

RUSSO, V. L., et al, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21

to maintain the angle of the electrode to the weld, prevent vibrations, and monitor a constant welding rate. The welding was done on a KGT-2 semi-automatic welder. The mechanical properties of both the weld metal and the joint on specimens (6 mm in diameter) include a tensile strength of 64.6 kg/mm², a yield point of 56.5 kg/mm², an elongation of 14 percent, an area reduction of 39.2 percent, a notch toughness (round notch) of 9.8 kg/mm², and a bending angle of 120° (on specimens with longitudinal welds). The value at which the weld joint is equal in tensile strength to that of the base metal was established at 0.1 to 0.35 and the ratio is $\frac{t.s.}{t.s.}$.

2/2

USSR

UDC:538.566+621.371

GRINGAUZ, K. I., GDALEVICH, G. L., RUDAKOV, V. A.

"Use of Spacecraft in Study of Ionospheric, Magnetospheric, and Interplanetary Plasma Performed by the Radio Engineering Institute of the Academy of Sciences USSR"

Tr. Radiotekhn. In-ta AN SSSR [Works of Radio Engineering Institute, Acad. Sci. USSR], No. 1, 1970, pp. 106-132 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Zh196 from the Resume)

Abstract: The primary results of experimental studies of plasma in the ionosphere of the earth and Venus and in near-earth, near-lunar, and interplanetary space performed by the Radio Engineering Institute of the USSR Academy of Sciences using missiles and satellites over the past ten years are presented briefly. Fifty-seven biblio. refs.

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USSR

UDC 576.858.093.3

GRININ, A. S., and TITOV, I. N.

Ochistka, Kontsentrirvaniye, i Fraktsionirovaniye Virusov Zhivotnykh
(Purifying, Concentrating, and Fractionating Animal Viruses), Moscow,
"Kolos," 1971, 240 pp

Translation: Annotation: This book is a manual for scientific workers and veterinarians in laboratories and for virologists, biochemists, and biophysicists. It gives brief information on the biochemical and biophysical characteristics of viruses. Descriptions are given for methods of extracting viruses from infected tissues, physical and chemical methods of purifying and concentrating viruses, and methods of adsorption, ion exchange, and molecular sieve chromatography.

Brief descriptions are given of the working principles of ultracentrifuges, electron microscopes, and chromatographic equipment.

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GRININ, A. S., and TITOV, I. N., Ochistka, Kontsentrirvaniye, i Fraktsionirovaniye Virusov Zhivotnykh (Purifying, Concentrating, and Fractionating Animal Viruses), Moscow, "Kolos," 1971, 240 pp

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USSR

GRININ, A. S., and TITOV, I. N., Ochistka, Kontsentrirovaniye, i Fraktsionirovaniye Virusov Zhivotnykh (Purifying, Concentrating, and Fractionating Animal Viruses), Moscow, "Kolos," 1971, 240 pp

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USSR

GRININ, A. S., and TITOV, I. N., Ochistka, Kontsentrirvaniye, i Fraktsionirovaniye Virusov Zhivotnykh (Purifying, Concentrating, and Fractionating Animal Viruses), Moscow, "Kolos," 1971, 240 pp

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4/4

GRINIO, L. P.

space physiology

CYTOGENETIC INVESTIGATIONS IN RELATION TO MANNED SPACE FLIGHT

Article by L. P. Grinio, T. N. Kudina and N. N. Sokolova; Moscow: Kosmicheskaya Biologiya i Meditsina, Russian, Vol. 7, No. 3, 1971, pp. 51-55, submitted 20 October 1969

(Space Physiology)

12

UDC 612.6.05-06:629.78

Sr: JPRS 53801
13 AUG 71

Abstract: No increase in chromosomal aberrations was found in the blood of test subjects during a 120-day bedrest experiment. No significant changes in the chromosomal apparatus were detected in cytogenetic examinations of the cosmonaut G. T. Beregovoy. These findings indicate that manned space flights made along the trajectories and in radiation environments involved up to this time are genetically safe.

A study of the effect of spaceflight factors on different biological objects was already initiated in experiments in balloons and ballistic missiles (1935-1966), but no reliable cytological and genetic changes could be detected. Rather concordatory data were obtained in an investigation of plants and animals aboard artificial earth satellites and spaceships.

A series of experiments on plants revealed a cytogenetic effect caused by spaceflight factors. For example, for wheat and pea seeds V. V. Khvorostova (1962), after a series of space flights, discovered a statistically reliable increase in chromosomal rearrangements. N. I. Delone, et al. (1963a,b, 1964) observed an impairment of the mitotic process in the microspores of Tradescantia. Ya. L. Glendotakiy, et al. (1962) discovered that some strains of actinomyces are sensitive to flight factors. However, studies by B. N. Sidorov and N. N. Sokolov (1961) failed to detect changes in the frequency of chromosomal rearrangements in *Alisma filiculosa* and *Nigella damascena*. According to N. N. Zudov-Voruzhnikov, et al. (1962, 1965) the frequency of bioc hemical mutations in *E. coli* also did not change after flights on an artificial earth satellite. In a number of experiments on *Drosophila* Ya. L. Glendotakiy and G. P. Partanov (1962), Ya. L. Glendotakiy, et al.

1/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--FAGOPYRUM EMARGINATUM AS A NEW POTENTIAL SOURCE OF RUTIN -U-

AUTHOR--(02)-GRINKEVICH, N.I., IVANOVA, I.A.

COUNTRY OF INFO--USSR

SOURCE--FARMATSIYA (MOSCOW) 1970, 19(1), 32-7

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, GLUCOSIDE, KETONE, PAPER
CHROMATOGRAPHY, CHEMICAL IDENTIFICATION, COPPER SULFATE, PLANT
PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/2022

STEP NO--UR/0466/70/019/001/0032/0037

CIRC ACCESSION NO--AP0137197

UNCLASSIFIED

PROCESSING DATE--04DEC70

UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--AP0137197

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. USING METH EXTN. AND PAPER CHROMATOG. THE COMPN. OF F. EMARGINATUM WAS STUDIED AND FOUND TO BE THE SAME AS THAT OF SOWN BUCKWHEAT. THE ONLY DIFFERENCE WAS A HIGHER AMT. OF RUTIN AND CYANIDIN IN F. EMARGINATUM. THE HIGHEST CONTENT OF BOTH COMPOS. WAS FOUND IN THE FLOWERING PHASE. USING QUANT. SPECTRUM ANAL. THE PRESENCE OF P VITAMIN AND SOME HEMATOPOIETIC TRACE ELEMENTS, ESP. CU, WAS DETECTED. TREATMENT OF BUCKWHEAT PLANTS WITH CUSO SUB4, MNSO SUB4, CO(NO SUB3)SUB2 OR AMMONIUM MOLYBDATE INCREASED RUTIN AND CYANIDIN CONTENT. THE BEST RESULTS WERE ACHIEVED WITH CUSO SUB4 WHICH INCREASED RUTIN LEVEL AT 49.9 OR 48PERCENT AND CYANIDIUM LEVEL AT 53 OR 55PERCENT IN DIPLOID OR TETRAPLOID PLANTS RESP. FACILITY: MOSK. MED. INST. IM. SECHENOVA, MOSCOW, USSR.

UNCLASSIFIED

Optimization

USSR

UDC 518.1

ARTOBOLEVSKIY, I. I., Academician, GENKIN, M. D., GRINKEVICH, V. K., SOBOL', I. M., and STATNIKOV, R. B., State Scientific Research Institute of Mechanical Engineering, Moscow

"Optimization in Machine Theory by LP-Search"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 6, 1971, pp 1287-1290

Abstract: The principal types of optimization problems occurring in machine theory are optimal analysis problems, optimal synthesis problems, and best approximation problems. They are all multiparametric and the use of classical methods of the calculus of variations is, as a rule, impossible. A global search is necessary. An "independent" random search (Monte Carlo method) permits the simultaneous optimization of all criteria that are of interest. The selection of the decision or compromise criterion can be made during the "man-machine" dialogue. Further improvement of the model (if it is required) is possible by using local search methods, which usually converge in the neighborhood of the extremum. The authors suggest that, instead of a random search, its deterministic analog -- an LP-search -- be used. It has led to much

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USSR

ARTOBOLEVSKIY, I. I., et al., Doklady Akademii Nauk SSSR, Vol 200, No 6, 1971,
pp 1287-1290

better results than the random search in a number of complex problems, with the number of samples reduced 2-4 times. The article describes the scheme for the LP-search and considers the example of an oscillatory system with three degrees of freedom, in which it is necessary to find the model with the minimum length and the model with the maximum difference between the first and second natural frequencies subject to restrictions.

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GRINKEVICH, V. K.

SPRS 54729
17 Dec 71

UDC 518.1

OPTIMIZATION IN THE THEORY OF MACHINES, USING THE LP-SEARCH METHOD

Article by Academician I. I. Zhukovskiy, N. D. Gankin, V. K. Grinkevich, N. Tokov, and A. P. Stankov, State Institute of Machine Control, Moscow, 12907

Вестник Академии Наук СССР, Vol 200, No 6, 1971, pp 1287-1297
Doklady Akademii Nauk SSSR

The problems of optimum planning are particularly pressing under series production conditions and in the designing of expensive experiments.

Optimum planning includes both a search for a design plan (and its corresponding parameters) according to the given quality criteria and the creation of new mathematical methods that consider the specifics of complex multiparametric and multi-criteria problems.

1. Instead of the concepts machine, mechanism, design, and so forth, we will introduce a nondimensional analog -- the model. For a given kinematic structure and a degree of freedom, the model is determined by the points $\alpha = (\alpha_1, \dots, \alpha_n)$ of the n -dimensional parallelepiped Π .

where α_i are the limits of the permissible variations of the model's parameters. Optimum additional limitations on the system's behavior isolate some closed section G in parallelepiped Π ; we consider its volume to be positive.

If the quality of the model is determined by a function $\Phi(\alpha)$ (the quality criterion), which is defined in G , then we call that model α , such that $\Phi(\alpha) = \Phi^*(G)$, an optimum model.

Let us agree to write $\Phi^*(G)$, if $\Phi(\alpha)$ is defined in G . Let us examine the basic types of optimization problems that arise in the theory of machines.

Machine Control

USSR

UDC 619:616.981.42-07:636.32.38

ABIDZHANOV, M. S., ~~GRININ, V. K.~~, Candidates of Veterinary Sciences, ISTAYEV, I. I., and SALEROVA, M., Junior Scientific Associates, Uzbek Scientific Research Veterinary Institute

"Investigation of Blood Serum of Sheep Vaccinated Against Brucellosis"

Moscow, Veterinariya, No 8, Aug 70, pp 47-48

Abstract: A study was made of shifts in the concentration of blood serum proteins in sheep vaccinated against brucellosis with various doses of the Nevskiy-12 and Nevskiy-19 strains. The problem was of particular interest because, even though the Nevskiy-12 vaccine produces immunity in animals, it does not induce the formation of antibodies which could be detected with standard antigens. Of a total of 21 sheep, six were immunized with a single dose of 40 billion bacteria of the Nevskiy-19 strain, and six with 40 billion bacteria of the Nevskiy-12 strain. Six other sheep were vaccinated twice with the Nevskiy-12 strain, the first dose containing 120 billion bacteria and the second, given 26 days later, containing 40 billion bacteria. Blood samples were collected and analyzed before vaccination and 1-140 days afterwards. Three sheep served as controls. The shifts induced by the Nevskiy-12 and Nevskiy-19 strains were similar: the concentrations of total protein and albumins decreased, while the concentrations of beta- and gamma-

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ABIDZHANOV, M. S., et al, Veterinariya, No 8, Aug 70, pp 47-48

globulins increased. In sheep which were vaccinated twice, the concentrations of total protein and gamma-globulins increased, while the concentrations of alpha- and beta-globulins decreased. No shifts were observed in the control animals.

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UDC 532.507 + 532.529.5

USSR.

GRINMAN, I. G., RODIN, A. I.

"Experimental Investigation of the Interaction Between a Gas Flow and a Liquid During a Split Phase Flow"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Fiziko-Matematicheskaya, No 4, Jul-Aug 71, pp 19-25

Abstract: In spite of the numerous investigations, much still remains to be done to define the quantitative characteristics of the interaction between a gas flow and a liquid. The modes of motion must be refined in greater detail for the gas-liquid mixture. The authors discuss three aspects of this problem. They first determine the interaction of the gas flow with the surface of a liquid and illustrate their findings schematically. They next evaluate the influence of gas consumption on the velocity of transport of the liquid and the pulp and support their findings by schematics. Finally, the authors compare the experimental and theoretical data on this interaction and determine that their experimental data agree well with the theoretical data of P. L.

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GRINMAN, I. G. et al, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Fiziko-Matematicheskaya, No 4, Jul-Aug 71, pp 19-25

Kapitsa described in reference /17; thus it is possible to expand the theoretical function /equation (2) derived for the two-dimensional case into the more general case of a three-dimensional problem which actually exists under the conditions of motion of a gas-liquid mixture during the split phase flow. The article contains 7 figures and 10 bibliographic entries.

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Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 2-70

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MOBILE COMPRESSOR wherein the pre-heat unit is fitted on the compressor oil tank of a motor driven mobile compressor. The improvement lies in the arrangement of the guide ribs of the heat box 6 of the exhaust system of the motor 3. The exhaust pipe 7 has an auxiliary outlet pipe 8 for heating the external parts of the compressor 2. The heat box 6 is mounted under the oil tank 5 of the compressor section 2. This design change improves cold weather starting. Section A.A shows the rib arrangement of the heat box 6.

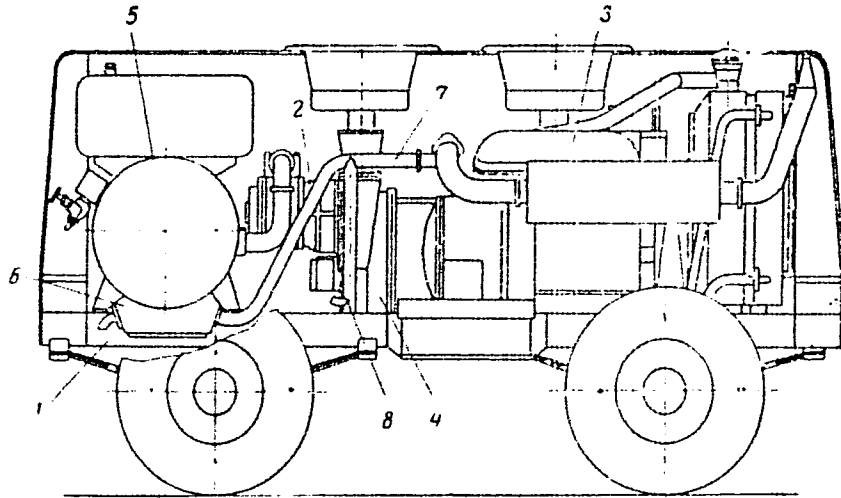
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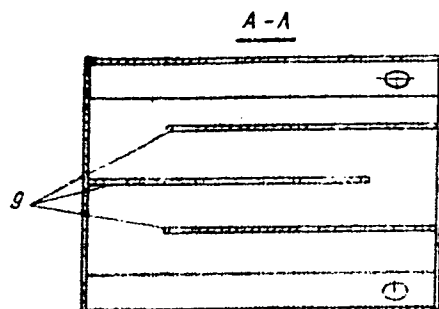


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GRINCHENKO, T. A., DORODNITSYNA, A. A., KLIMENKO, V. P., FISHMAN, Yu. S.

"The MIR-2 System of Computer Analytic Transforms"

Vychisl. Mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Technology -- Collection of Works], No 3, Khar'kov, 1972, pp 21-25 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V647, by the authors).

Translation: Certain functional peculiarities of the MIR-2 system of analytic transforms and principles of its machine realization are presented.

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USSR

UDC 577.4

GRINSHPON, M. S.

"Properties of Prime Implicants of a Threshold Logic Function and Attributes of Nonrealizability"

Tr. ucheb. in-tov svyazi. M-vo svyazi SSSR, (Works of Communications Training Institutes. Ministry of Communications USSR), 1971, vyp. 55, pp 196-202 (from RZh-Matematika, No 5, May 72, Abstract No 5V343 by L. SHOLOMOV)

Translation: The author establishes certain necessary properties which are possessed by a set of prime implicants of any threshold function. Many clearly nonthreshold functions can be eliminated on the basis of a check of these properties.

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UDC 581.132.8

USSR

VOSKRESENSKAYA, N. P.; VIYL', Yu. A.; GRISHINA, G. S.; PYARNIK, T. P.; Institute of Plant Physiology imeni K. A. Timiryazev, Academy of Sciences USSR, and Institute of Experimental Biology, Academy of Sciences Estonian SSR, Kharku

"Distribution of Tracer Carbon in Products of the Photosynthesis in Bean Plant Leaves in Red and Blue Light Depending on the Content of Oxygen in the Medium"

Moscow, Fiziologiya Rasteniy, Vol 18, No 3, May/Jun 71, pp 488-493

Abstract: The intensity of photosynthesis and $C^{14}O_2$ metabolism were studied in experiments on bean plant (*Phaseolus* sp.) leaves in which discs from the leaves were exposed to $C^{14}O_2$ in red or blue light in air and N_2 . In air on the light plateau, the intensity of photosynthesis was the same in red and blue light. It was increased in either kind of light in N_2 , but to a greater extent in blue than red light. In air blue light activated incorporation of C^{14} into glycine, serine, alanine, aspartic acid, and glutamic acid, while inhibiting its inclusion, as
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USSR

VOSKRESENSKAYA, N. P., et al, Fiziologiya Rasteniy, Vol 18,
No 3, May/Jun 71, pp 488-493

compared with red light, into starch. In N₂ in either kind of light there was a change in the principal path by which C left the Calvin cycle; the way over phosphoglyceric acid was activated (particularly in red light), while that over glycolate was inhibited. The activating effect of blue light on the inclusion of C₁₄ into the amino acids mentioned above was retained in N₂, being increased greatly in the case of serine. Furthermore, blue light had an activating effect in N₂ on the incorporation of C₁₄ into phenylalanine, while reducing greatly, vs. red light, the incorporation of C₁₄ into alanine. The inhibiting effect of blue light on the biosynthesis of starch disappeared in N₂. While O₂ had only a small effect on the activation of the biosynthesis of amino acids by blue light, it enhanced greatly the inhibiting effect of this light on the synthesis of starch. The reasons for the latter phenomenon are not quite clear.

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USSR

UDC: 577.4

GRINSHPON, M. S.

"Properties of Simple Implicants of a Threshold Logic Function and Features of Nonrealizability"

Tr. ucheb. in-tov svyazi. M-vo svyazi SSSR (Works of Academic Institutes of Communications. Ministry of Communications of the USSR), 1971, vyp. 55, pp 196-202 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V343)

Translation: The author establishes certain necessary properties possessed by the set of simple implicants of any threshold function. Many patently non-threshold functions can be screened out on the basis of a check of these properties. L. Sholomov.

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GRINSHPON, M. S.

"The d -Property of Minimum Subcubes of a Logic Function, and an Abbreviation of an Algorithm for Checking Threshold Realizability"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Academic Institutes of Communications. Ministry of Communications of the USSR), 1970, vyp. 52, pp 161-165 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V699)

Translation: The following property of a Boolean function $f(\vec{x}) = f(x_1, \dots, x_n)$ is a test of its complete monotonicity (and hence a necessary condition for it to be a threshold function). For any two vertices \vec{a} and $\vec{\beta}$ of a cube $\{0,1\}^n$ which are such that $f(\vec{a}) = f(\vec{\beta}) = 1$, the minimum subcube stretched on \vec{a} and $\vec{\beta}$ does not contain a pair of opposite (with respect to the subcube) vertices $\vec{\gamma}$ and $\vec{\delta}$ such that $f(\vec{\gamma}) = f(\vec{\delta}) = 0$. A fairly simple method of checking the formulated property is proposed in this paper. L. Sholomov.

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USSR

UDC: None

GOL'DENBERG, L. M. and GRINSHPON, M. S.

"Method of Computing the Reliability of Logic Circuits"

Moscow, Radiotekhnika, Vol. 26, No 1, 1971, pp 94-101

Abstract: Because the procedure given in an earlier article (V. I. Levin, Veroyatnostnyy analiz nenadezhnykh avtomatov -- Probability Analysis of Unreliable Automata -- "Zinatne," Riga, 1969) for computing the reliability of combination Boolean circuits is too difficult, the authors of the present article propose a simpler method. They begin by considering as given a logic function F of n arguments determined by N sets of these arguments, where N may assume any value between 1 and 2^n inclusive. They then examine a possible circuit L for realizing F . They define the integral reliability of L as the reliability of realizing F by circuit L , and state that it can be determined as the probability of the correct value of the signal at the circuit output. An example of the method, involving tables given in this article, is submitted. The authors assert that their method can be used for determining the probability of errors of the $1 \rightarrow 0$ and $0 \rightarrow 1$ type at the circuit output as well as computing its reliability.

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UDC: 621.374.5(088.8)

USSR

GRINSHPON, M. S.

"A Pulse Shaper"

USSR Author's Certificate No 259968, filed 22 Jul 65, published 4 May 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G231 P)

Translation: This Author's Certificate introduces a pulse shaper which contains a delay line connected to a pulse oscillator. A semiconductor diode is connected in parallel with the delay line in the reverse direction with respect to the polarity of the pulses coming from the oscillator. In order to use the shaper to produce pulse groups and to divide the repetition frequency of the pulse train by two, the shaper uses a semiconductor diode with charge accumulation, and the delay line is matched at input and output.

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