

USSR

UDC 576.858.75.095.57

PODCHERNYAYEVA, R. Ya., ~~SOKOLOV, M. I.~~, PARASYUK, N. A., MYASNIKOVA, I. A.,
BASOVA, E. A., SOKOLOVA, N. N., and MOLIBOG, Ye. V., Institute of Virology
imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Study of Genetic Markers and Their Variability in Influenza Virus Isolated
During the 1968-1969 Influenza Epidemic. II. Variability of Genetic
Markers in Influenza Type A₂ (Hongkong) Virus In Passages in Mice at Low
Temperatures"

Moscow, Voprosy Virusologii, No 5, 1971, pp 543-548

Abstract: Ten passages of influenza type A₂ (Hong Kong) virus in mice re-
sulted in variants that produced lung changes typical of influenza in mice.
After the 20th passage, the pathogenic variants exhibited increased repro-
ductive activity at 36 and 40°C. All strains, except A₂ (Hong Kong) 1/68
M₂₀, resisted heating to 56°C. Like the original strains, they were com-
pleted adsorbed on chick erythrocytes but were more readily eluted from
them. Neuraminidase activity was half that in the original strains. The
pathological variants remained sensitive to normal animal serum inhibitors
and did not agglutinate mouse erythrocytes. They resembled the original
strains in resistance to trypsin, urea, and ultraviolet irradiation.

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PODCHERNYAYEVA, R. Ya., et al., Voprosy Virusologii, No 5, 1971, pp 543-548

After 10 passages of A2 (Hong Kong) 1/68 and its pathogenic variant A2 (Hong Kong) 1/68 M₂₀ in chick embryos incubated after inoculation at 28°C both strains reproduced actively and remained able to do so even at 40°C.

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UDC 576.858.75.095 5

SOKOLOV, M. I., PODCHERNYAYEVA, R. Ya., PARASYUK, N. A., MYASNIKOVA, I. A., MEN'SKIKH, L. K., MOLIBOG, Ye. V., SOKOLOVA, N. N., and STAKHANOVA, V. M., Institute of Biology imeni D. I. Ivanovskiy, Academy of Medical Sciences, USSR, Moscow

"Study of Genetic Properties and Their Variability in Viruses Isolated in the 1968-1969 Influenza Epidemic. Communication 1: Biological Properties of Strains of A2/Hong-Kong 1/68"

Moscow, Voprosy Virusologii, No 6, Nov/Dec 70, pp 677-680

Abstract: A study was made of the inhibitor ratio, thermal stability, neuramidase and eluent activities, stability against UV light, and pathogenic and toxic effects on white mice of the A2/Hong-Kong 1/68 flu strain and two similar strains isolated in the USSR. The latter strains did not differ significantly from the former. On the basis of the test results, it is assumed that evolution of the A2 virus in nature does not involve reversion to strains of group A0. Additional studies with laboratory varieties are required to elucidate this problem.

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USSR

UDC 576.858.73.095.57

VORONTSOVA, T. V., GERMANOV, A. B., and SOKOLOV, M. I., Institute of Virology
imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Induction of S-Mutation in Fowl Plague Virus by Ethylenimine"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 416-421

Abstract: Four mutants, formed spontaneously or induced by ethylenimine, were isolated from a population of the L_{p2} large-plaque strain of fowl plague virus: a micro-plaque mutant, a small-plaque mutant which was stimulated by protamine sulfate, a small-plaque mutant which was not stimulated by protamine sulfate, and a medium-plaque mutant. All mutants were genetically stable. Ethylenimine was very effective in inducing mutations when it was applied to a reproducing population of fowl plague virus. Optimal conditions for induction of S-mutations with ethylenimine were established. A correlation was found to exist between the lethal and mutagenic effects on one hand and the stage of virus replication on the other hand. The most pronounced lethal and mutagenic effects took place when ethylenimine was applied in the first two hours of virus replication.

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1/2 011

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--GENETIC MARKERS OF HERPES SIMPLEX VIRUS COMMUNICATION 2:
INVESTIGATION OF GENETIC MARKERS OF THE US STRAIN OF HERPES SIMPLEX

AUTHOR--(04)--RUDNEVA, I.A., GERMANOV, A.G., MYASNIKOVA, I.A., SOKOLOV, M.I.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIROLOGII, 1970, NR 2, PP 182-186

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HERPES SIMPLEX VIRUS, TISSUE CULTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAF--1990/0729

STEP NO--UR/0402/70/000/002/0132/0186

CIRC ACCESSION NO--AP0108935

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0108935

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A VARIANT OF THE US STRAIN OF HERPES SIMPLEX VIRUS PRODUCING A CYTOPATHIC EFFECT IN HUMAN EMBRYO AND CHICK EMBRYO FIBROBLAST CULTURES WAS STUDIED. DIFFERENT SENSITIVITY OF THE US STRAIN TO SULFATED AGAR POLYSACCHARIDES DEPENDING ON THE TYPE OF CELL CULTURE WAS DEMONSTRATED: COMPLETE INHIBITION OF PLAQUE PRODUCTION WAS OBSERVED ONLY IN CHICK EMBRYO FIBROBLAST CULTURE BUT NOT IN HUMAN EMBRYO FIBROBLASTS. THE VARIANT UNDER STUDY WAS FOUND TO BE SENSITIVE TO 5-BROMODEOXYURIDINE AND TO BE INCAPABLE OF REPRODUCTION AT HIGH TEMPERATURE.

UNCLASSIFIED

1/2 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--GENETIC MARKERS OF HERPES SIMPLEX VIRUS COMMUNICATION 1: SOME
GENETIC MARKERS OF K STRAIN OF HERPES SIMPLEX VIRUS OF THE SECOND

AUTHOR--(03)-GERMANOV, A.G., RUDNEVA, I.A., SOKOLOV, M.I.

S

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIROLOGII, 1970, NR 2, PP 166-170

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HERPES SIMPLEX VIRUS, TISSUE CULTURE, MICROORGANISM GENETICS,
ANTIGEN, DRUG RESISTANCE, BROMINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0726

STEP NO--UR/0402/70/000/002/0166/0170

CIRC ACCESSION NO--AP0108932

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0108932
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. NINE CLONES OF THE K STRAIN OF HERPES SIMPLEX VIRUS PRODUCING OPAQUE PLAQUES IN CHICK EMBRYO FIBROBLAST CULTURES WERE ISOLATED. THESE CLONES JUST AS THE ORIGINAL STRAIN SHOWED NO CYTOPATHIC EFFECT IN CHECK EMBRYO FIBROBLAST CULTURES. MARKED AUTOINTERFERENCE OF PLAQUE FORMATION IN THE CLONES UNDER STUDY WAS DEMONSTRATED. THESE CLONES WERE FOUND TO INDUCE SYNTHESIS OF A SIGNIFICANT AMOUNT OF INTERFERON IN CHICK EMBRYO FIBROBLAST CULTURES. INVESTIGATION OF OTHER PROPERTIES, INCLUDING RESISTANCE TO 5-BROMODEOXYURIDINE AND CAPACITY FOR REPRODUCTION AT HIGH TEMPERATURE, PERMITS TO CHARACTERIZE THE ISOLATED CLONES OF THE K STRAIN AS ATYPICAL VARIANTS OF HERPES SIMPLEX VIRUS.

UNCLASSIFIED

USSR

GUZEVICH, Ya. N., SOKOLOV, M. M.

UDC 691.396.677:621.396.662.6(088.8)

"Device for Adjustment of a Wide Band Discharger"

USSR Author's Certificate No 251015, Filed 29 Dec 63, Published 5 Feb 70 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8B96 P)

Translation: The proposed device for tuning a wide band discharger contains a resonance diaphragm with a regulatable gap soldered into a wave guide. In order to exclude slipping out of adjustment in the case of temperature deformations during the sealing process, the device is executed in the form of a copper bushing with a thin bottom and a cone at the end. The bushing is soldered into the wave guide together with the diaphragm. Here, the adjustment -- moving of the cone -- takes place by deformation of the bottom of the bushing with the help of a detaching mechanism. There is one illustration.

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USSR

UDC 241.+ 547.26.118 + 547.281

RAZUMOV, A. I., LIORBER, B. G., MOSKVA, V. V., and SOKOLOV, M. P., Kazan'
Chemical Technological Institute imeni S. M. Kirov

"Phosphorylated Aldehydes"

Moscow, Uspekhi Khimii, Vol 42, No 7, Jul 73, pp 1199-1224

Abstract: A review with 120 references reporting systematically analyzed data on the synthetic methods and chemical properties of phosphorylated aldehydes. Principal attention has been given to the analysis of the organophosphorus compounds containing a formyl group in the alkyl radical connected with the phosphorus atom by a C-P bond. The aldol-enol tautomerism of the phosphorylated aldehydes is discussed in detail, the effect of various factors on the position of aldo-enol equilibrium having been analyzed. The geometric structure of the enols formed is reported.

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USSR

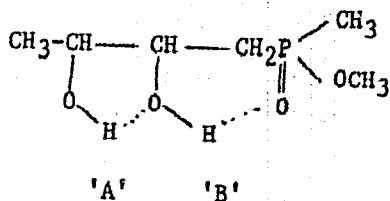
UDC 547.241.422 + 541.571.6

LIORBER, B. G., SOKOLOV, M. P., KHAMMATOVA, Z. M., and RAZUMOV, A. I.,
Kazan' Chemical Technological Institute Imeni S. M. Kirov

"The Nature of the Hydrogen Bond in Phosphorylated Glycols"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 2, Feb 73, p 438

Abstract: Hydrogen bonding in a phosphorylated glycol -- methyl 2,3-dihydroxybutylmethylphosphinate -- was studied by IR spectroscopy. A single band at 3260 cm^{-1} was observed in a concentrated sample, two bands at 3270 and 3370 cm^{-1} at a 0.02 M concentration in CCl_4 , C_2Cl_4 , C_6H_6 , corresponding to two intramolecular hydrogen bonds.



Diluting the glycol with a solvent of low polarity -- dioxane -- breaks the bond A, showing only one IR band at 3388 cm^{-1} .

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USSR

UDC 547.341

RAZUMOV, A. I., SOKOLOV, M. P., LIORBER, B. G., MOSKVA, V. V., SAZONOVA, Z. YA.,
and LOGINOVA, N. G., Kazan' Chemical-Technological Institute Imeni S. M. Kirov

"Synthesis and Properties of Phosphorylated Imines and Enamines"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 1019-1026

Abstract: Several methods exist for the synthesis of phosphorylated secondary and tertiary enamines and imines: direct reaction of primary amines with aldehydes, reaction of secondary enamines with phosphorylated aldehydes in presence of p-toluenesulfonic acid, reaction of the diamides of allylphosphorous acid with aldehydes, and transamination of enamines. Imine-enamine tautomerism of these products was studied showing that the position of tautomeric equilibrium depends principally on the nature of substituents at the nitrogen atom and on the type of solvent used. Hydrogen bonding of the enamine forms depends mainly on the substituents at nitrogen and phosphorus atoms and on the steric distribution of proton acceptors.

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USSR

UDC 547.241

RAZUMOV, A. I., SAVICHEVA, G. A., ZYKOVA, T. V., SOKOLOV, M. P.,
SMIRNOVA, G. G., LIORBER, B. G., SALAKHUTDINOV, R. A., Kazan'
Institute of Chemical Technology imeni S. M. Kirov

"Reactivity and Structure of Phosphorylated Carbonyl Compounds.
8. NMR and IR Spectra of Arylalkoxyphosphinylacetaldehydes"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971, pp 2164-
2167

Abstract: In a continuation of the previous study of dialkoxy-
phosphorylacetaldehydes, tautomerism in alkoxyarylphosphoryl-
acetaldehydes (I) was studied on the theory that an aryl substi-
tuent at the P atom may affect the aldol-enol equilibrium.
Measurements of the P-31 chemical shift in compounds I hinted at
a shift in equilibrium toward the enol form. This was confirmed
by NMR spectra of 20% I solutions in carbon tetrachloride: the
NMR band of α -ethyleneic proton revealed the presence of the enol
form. The IR spectra of nondiluted I compounds indicated simul-
taneous existence of two enol forms: B with intermolecular and
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RAZUMOV, A. I., et al, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971, pp 2164-2167

C with strong intramolecular hydrogen bonds in addition to aldol form. The IR spectra of 5-20% I solutions in carbon tetrachloride reflected a sequential shift toward the aldol form with increasing dilution, so that practically only the aldol form existed in the 5% solutions. The IR spectral data showed that in triethylamine solutions of I, in contrast to carbon tetrachloride solutions, the equilibrium shifts toward the B chelated enol form which incorporates triethylamine.

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UDC 547.241+547.26'118

RAZUMOV, A. I., SAVICHEVA, G. A., ZYKOVA, T. V., SOKOLOV, M. P., LIORBER, B. G., and SALAKHUTDINOV, R. A., Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Reactivity and Structure of Phosphorylated Carbonyl Compounds. Part VII. NMR and IR Spectra of Dialkoxyphosphonylacetaldehydes"

Leningrad, Zhurnal Obschey Khimii, Sep 71, Vol 41, No 9, pp 1954-1957

Abstract: The considerable value of phosphorylated carbonyl compounds lies in the fact that they, like β -carbonyl compounds, exhibit keto-enolic tautomerism. The application of polarography and IR spectroscopy (in earlier studies) indicates that some β -phosphorylated aldehydes are mixtures of keto- and cis-enolic forms whose equilibrium depends on both the solvents and the pH of the aqueous solutions. This paper reports on tautomeric transformations of diethoxy- (I) and diisopropoxyphosphonylacetaldehydes (II) using NMR and IR spectroscopy. The tautomerism of both compounds was studied from the NMR spectra of (I) and its 5, 10 and 20% solutions in carbon tetrachloride, 30 and 50% solutions in triethylamine and from the NMR spectra of aldehyde (II) and its 10% solution in triethylamine at 20°C.

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RAZUMOV, A. I., et al., Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1954-1957

Readings of the NMR spectra were made on a YaMR-5535 spectrometer, the P^{31} NMR spectra were read on the RYa-2303 spectrometer and the IR spectra were read on UR-10 and UR-20 units. Both NMR and IR spectra indicate that dialkoxyposphenyraldehydes and their solutions in CCl_4 are an aldo-form with a small admixture of the enolic structure. In triethylamine, the chelated enolic structure is predominant.

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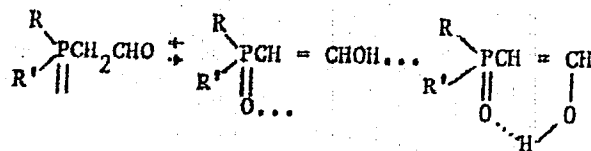
UDC 547.241

RAZUMOV, A. I., SOKOLOV, M. P., ZYKOVA, T. V., LIORBER, B. G., SAVICHEVA, G. A., SALAKHUTDINOV, R. A.

"Reactivity and Structure of Phosphorylated Carbonyl Compounds. IX. Ketoenol Equilibrium of Phosphorylated Acetaldehydes"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 47-51

Abstract: Tautomeric conversions of dialkoxyphosphonyl and arylalkoxyphosphinyl acetaldehydes have been described previously (A. I. Razumov, et al., ZhOKh, No 41, 1954, 1971; No 41, 2164, 71]. The study of alkylalkoxyphosphinyl acetaldehydes from this point of view is a logical development of this previous work. The methods of infrared and nuclear magnetic resonance ^1H and ^{31}P spectroscopy has been used to show that the ketoenol equilibrium of phosphorylated acetaldehydes



depends to a significant extent on the alkalinity of the P=O radical, spatial

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RAZUMOV, A. I., et al., Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 47-51

effects and the effects of solvents. The calculated ketoenol equilibrium constants of both the undeveloped substances and 20, 10 and 5 percent molar solutions of them in carbon tetrachloride and the free energy ΔF are tabulated. In the aliphatic series, with an increase in the alkalinity, successive shifting of the equilibrium toward the enol form is observed. The values of ΔF found correlate satisfactorily with the Kabachnik constants [T. A. Mastryukova, M. I. Kabachnik, *Usp. khim.*, No 38, 1751, 1969]. On dissolving the investigated substances in carbon tetrachloride (20, 10 and 5% molar solutions) a gradual shift in the aldo direction takes place.

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USSR

UDC 547.341

RAZUMOV, A. I., LIORBER, B. G., SOKOLOV, M. P., and ZYKOVA, T. V., Kazan'
Institute of Chemical Technology imeni S. M. Kirov

"Reaction of Phosphorylated Acetaldehydes With Allyl Phosphonous Acid Diamides"
Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2106-2107

Abstract: Studies on the conversion of phosphorylated aldehydes indicate that in reactions with allyl phosphonous acid diamides they yield enamines. It is assumed that the reaction passes through the enolic form since the presence of basic agents (in this case allyl phosphinous acid diamides) moves the keto-enol equilibrium of the phosphorylated acetaldehydes toward the enol forms. The structure of the synthesized compounds is supported by both IR and PMR spectra. They show absorption bands at 1616 cm^{-1} ($\nu\text{C=C}$), 1227 cm^{-1} ($\nu\text{P=O}$), 1170 and 1030 cm^{-1} ($\nu\text{P-O-C}_2\text{H}_5$). The NMR spectra show peaks for CH_3 , CH_2 and OCH_2 .

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USSR

UDC 547.341

RAZUMOV, A. I., LIORBER, B. G., SOKOLOV, M. P. Kazan Chemical-Technological
Institute imeni S. M. Kurov

"Study of a Series of Derivatives of Phosphonic and Phosphonous Acids"
LXVIII. The Diamides of Allylphosphinous Acids, Their Synthesis and Properties.

Leningrad, Zhurnal Obshchei Khimii, Vol 40, No 6, Jun 70, pp 1252-1255

Abstract: The reaction of allyl dichlorophosphine with secondary amines in an inert solvents (ether, hexane) in the presence of triethylamine or excess secondary amine yields the corresponding diamides of allylphosphonous acid (I) I easily add Group VI elements, such as sulfur (in polar solvents) or selenium (without solvent), and thereby form diamides of alkylthioor allylselenophosphonic acids. The IR spectra of the diamides were studied.

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USSR

UDC 547.241

RAZUMOV, A. I., LIORBER, B. G., SOKOLOV, M. P., MOSKVA, V. V., NAZVANOVA, G. F., ZYKOVA, T. V., CHEMODANOVA, L. A., and SALAKHUTDINOV, R. A.,
Kazan' Chemical-Technological Institute Imeni S. M. Kirov

"Reactivity and Structures of Phosphorylated Carbonyl Compounds. XI. Study of the Aldol-Enol Equilibrium of Phosphorylated Aldehydes as a Function of Temperature"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, pp 568-572

Abstract: The aldol-enol equilibrium of a series of alkyl substituted and non-substituted phosphorylated aldehydes has been investigated as a function of temperature using IR, NMR-¹H and NMR-³¹P spectroscopical analyses. With increasing temperature the nonsubstituted compounds go from the trans-enol form through the aldol form into the cis-enol form. In case of the alkyl substituted phosphorylated aldehyde only the conversion from trans-enol form into the aldol form has been observed. Quantitative determination of the ratios of aldol to trans-enol form has been made.

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USSR

UDC 632.95

SOKOLOV, M. S.

"Some Requirements for Methods of Determining Trace Quantities of Herbicides and Their Metabolites in Water and Soil"

Tr. 2-go Vses. soveshch. po issled, ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on Investigation of Residues of Pesticides and Prevention of Pesticide Contamination of Foodstuffs, Fodder and the External Environment), Tallinn, 1971, pp 370-372 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N460)

Translation: The decomposition of herbicides in water and soil obeys an exponential law. In order to calculate the "half-life of decay", the samples of soil and water for analysis of the toxicant concentration should be taken on a dynamic schedule over intervals which conform to a logarithmic law of multiplicity. The results of analyses can be used to calculate the "waiting time". The method of analyzing for trace quantities of pesticides in the soil should utilize a soil specimen with mechanically heavy composition containing 5-7% humus. The conditions for extraction and distillation of the solvent should be standardized.

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USSR

UDC 632.954

SOKOLOV, M. S., ZHUKOV, N. P., SEICHEGLOV, YU. V., KASIKHIN, A. N., and
MUSIKAYEV, D. A., All-Union Scientific Research Institute of Phytopathology

"Determination of the Volatility and Phytotoxicity of Vapors of Hormonal
Herbicides"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 3, Mar 70, pp 52-54

Abstract: The article suggests a modification of the "isolated system" method for a comparative estimate of the volatility and phytotoxicity of vapors of hormonal herbicides. This method was used to determine the phytotoxicity of the vapors of six 2, 4-D derivatives, viz. the butyl, butoxyethyl, chlorocrotyl and octyl esters (synthesized at the All-Union Scientific Research Institute of Phytopathology), the trichloroallyl ester (synthesized at the Institute of Organic Chemistry, Academy of Sciences USSR, and tested at the All-Union Scientific Research Institute of Phytopathology) and the triethanolamine salt, using beans as the test plants. The herbicides are ranked as follows in ascending order of phytotoxicity: triethanolamine salt < trichloroallyl ester < butoxyethyl ester < octyl ester < chlorocrotyl ester < butyl ester. It was found that there is a negative correlation between the volatility of a substance and its molecular weight and boiling point.

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USSR

UDC: 632.954:632.911

SOKOLOV, M. S., IZUBENKO, Y. V., MAKEYEVA-GUR'YANOVA, L. T., NIKITIN, N. V.,
and TEREKHOV, V. I.

"Determining the Absorption of Herbicides by Plants With the Use of
Artificial Irrigation"

Moscow, Khimiya v Sel'skom Khozyaystve, no 11, Nov 70, pp 48-52

Abstract: In agricultural practice, rains falling immediately after the treatment of seedings generally necessitate repeated application of herbicides. The effectiveness of systemic herbicides largely depends on their rate of penetration. It also depends on the composition, form, dose of the toxic agent, the development of the plants, their sensitivity to the agent and the characteristics of the cover tissue of the plant. It was found that the rate of penetration of hydrophilic toxic agents and the rain resistance of herbicides can be readily established using

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SOKOLOV, M. S., et al, Khimiya v Sel'skom Khozyaystve, no 11, Nov 70,
pp 48-52

artificial sprinkling to imitate rain with an intensity of 0.83 mm/min at a precipitation norm of 10 mm. The herbicide absorption is arbitrarily characterized by its semilethal dose penetration time. The rate of penetration of aqueous solutions of herbicides in ready-to-use solutions is higher than that of their chemically pure form. The experimental data on the penetration rate and wash-off of 2,4-D sodium salt were confirmed by the microquantitative determination of the toxic agent absorbed by the plants. Tables in the original article cite data on absorption and retaining of the triethanolamine salt of 2,4-D with irrigation and those on the sodium salt of 2,4-D with irrigation and wash-off.

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1/2 023
UNCLASSIFIED
PROCESSING DATE--27NOV70
TITLE--DETERMINATION OF THE VOLATILITY AND PHOTOTOXICITY OF THE VAPOR FROM
HORMONAL HERBICIDES -U-
AUTHOR--(05)-SOKOLOV, M.S., ZHUKOV, N.P., SHCHEGLOV, YU.Y., KASIKHIN, A.N.,
MUSIKAYEV, D.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. SEL. KHOZ. 1970, 8(3), 212-14
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HERBICIDE, LEGUME CROP, ESTER, VAPOR STATE, TOXICITY, PLANT
PHYSIOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/0183
STEP NO--UR/0394/70/008/003/0212/0214
CIRC ACCESSION NO--AP0130942
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130942

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN POT EXPTS. BEAN PLANTS WERE HELD IN CLOSED CONTAINERS TOGETHER WITH FILTER PAPER STRIPS, PREVIOUSLY WETTED WITH 0.02PERCENT SOLNS. OF 2,4-D ESTERS IN ETHANOL OR DIOXANE, FOR 24 HR AT 27DEGREES. THE ORDER OF VOLATILITY AS WELL AS PHYTOTOXICITY OF THE ESTERS WERE: TRIETHANOLAMINE SALT SMALLER THAN TRICHLOROALLYL ESTER SMALLER THAN BUTOXYETHYL ESTER SMALLER THAN OR EQUAL TO OCTYL ESTER SMALLER THAN CHLOROCTYL ESTER SMALLER THAN BUTYL ESTER. A CORRELATION BETWEEN MOL. WT., B.P., AND VOLATILITY WAS FOUND.

UNCLASSIFIED

1/2 027

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--DETERMINATION OF VOLATILITY AND PHYTOTOXICITY OF VAPORS OF HORMONAL
HERBICIDES -U-

AUTHOR--(05)-SOKOLOV, M.S., ZHUKOV, N.P., SHCHEGLOV, YU.V., KASIKHIN, A.N.,
MUSIKAYEV, D.A.

COUNTRY OF INFO--USSR

SOURCE--KHIMIYA V SEL'SKOM KHOZYAYSTVE, 1970, NR 3, PP 52-54

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HERBICIDE, HORMONE, TOXICITY, AROMATIC ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1359

STEP NO--UR/0394/70/000/003/0052/0054

CIRC ACCESSION NO--AP0136723

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136723

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PURPOSE OF THE WORK WAS TO DEVELOP A RELIABLE METHOD FOR DETERMINATION OF THE VOLATILITY AND PHYTOTOXICITY OF VAPORS OF ESTER DERIVATIVES OF 2,4-D. BUTYL, BUTOXYETHYL, CHLOROCROTYL, OCTYL AND TRICHLOROALLYL ESTERS WERE USED. AN ASSUMPTION WAS MADE THAT THE PHYTOTOXICITY OF THE ABOVE COMPOUNDS (CHEMICALLY PURE) WAS PRACTICALLY IDENTICAL. THE PHYTOTOXICITY WAS DETERMINED BY A MODIFIED "ISOLATED SYSTEM" METHOD. THE METHOD WAS BASED ON DETERMINATION OF PLANT WEIGHTS AFTER EXPOSURE OF JUST SPROUTED SEEDLINGS TO THE VAPORS FOR 24 HOURS AND THEIR SUBSEQUENT DEVELOPMENT AND GROWTH FOR 10 DAYS. THE RESULTS OBTAINED INDICATED THAT THE METHOD IS RELIABLE WITH 4-12PERCENT ERROR, THAT VOLATILITY OF THE COMPOUNDS TESTED DIFFERS CONSIDERABLY IN REVERSE DEPENDENCE TO THE MOLECULAR WEIGHT AND BOILING POINT OF THE COMPOUNDS, AND THAT THESE HERBICIDES CAN BE ARRANGED ACCORDING TO THEIR INCREASING PHYTOTOXICITY ACCORDING TO THE FOLLOWING SERIES: TRIETHANOLAMINE SALT OF 2,4-D, TRICHLOROALLYL ESTER, BUTOXYETHYL ESTER, OCTYL ESTER, CHLOROCROTYL ESTER, BUTYL ESTER. FACILITY: VSESOUZNYI NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT FITOPATOLOGII.

UNCLASSIFIED

1/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70
OPAQUE GLASSES-U-

TITLE--USE OF PHOSPHORUS COMPOUNDS FOR PRODUCING LIGHTING ENGINEERING
AUTHOR--(04)-TSARITSYN, M.A., PROSHKINA, A.I., SOKOLOV, M.S., SHAPIRO, M.D.

COUNTRY OF INFO--USSR

SOURCE--STEKLO KERAM. 1970, 27(3),13-16

DATE PUBLISHED-----70

S

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GLASS COMPOSITION, OXIDE GLASS, PHOSPHOURS COMPOUND, GLASS
OPACITY, GLASS PROCESSING, LIGHT SCATTERING GLASS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1255

STEP NO--UR/0072/70/027/003/0013/0016

CIRC ACCESSION NO--AP0116717

UNCLASSIFIED

2/2 007

CIRC ACCESSION NO--AP0116717
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT. CONCD. SUPERPHOSPHATE CONTG. P
SUB2 O SUB5 49.05 MINUS 50.92PERCENT AND CAO 21.7-2.46PERCENT WAS USED
FOR OPACIFYING LIGHTING ENGINEERING GLASSES. IT WAS DRIED AT 400DEGREES
AND SIFTED THROUGH A SIEVE 81 MESHES-CM PRIME2. GLASS BATCHES WERE
PREPD. OF THE CHEM. COMPN. SID SUB2 60.8-3.2, B SUB2 O SUB3 4-4.8, AL
SUB2 O SUB3 7.9-8, P SUB2 O SUB5 5-6, CAO 2.2-2.6, NA SUB2 O 10.7-10.8,
K SUB2 O 7, AND ADDNL. F 1.5PERCENT. THE MATERIAL WAS MELTED AT
1470-90DEGREES.

UNCLASSIFIED

Organ and Tissue Transplantation

USSR

UDC: 616.12-089.843-089.168

FAL'KOVSKIY, G. E., KAZAKOV, E. N., YARLYKOVA, Ye. I., ASTRAKHANTSEVA, G. I.,
ALEKSEYEVA, L. A., KOBKOVA, I. D., SOKOLOV, M. V., GALANKINA, I. Ye., BOL'SHUKHINA,
L. A., and GUDKOVA, R. G., Institute of Cardiovascular Surgery imeni A. N. Bakulev,
Academy of Medical Sciences USSR, Moscow

"The fate of an Heterotopic Heart Allograft"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 6, Nov/Dec 70, pp 3-12

Abstract: Donor hearts transplanted to the iliac arteries of recipient dogs survived up to 16 days. The causes of cessation of transplant function during the first 48 hours were surgical complications (death of the recipient from the anesthetic, hemorrhages from the sutures, thrombosis). In the absence of such complications, the transplants continued to function 3 to 12 days average, (4.75 days) when immunodepressants were not used, and 3 to 8 days (average, 6.16 days) when they were. Cardiac arrest was preceded by arrhythmias, a decrease in voltage of the ventricular complex, and increase in lymphocytes in the peripheral blood following leukopenia. Immunomorphological changes in the recipient's lymphatic system preceded the morphological signs of rejection in the transplant (pronounced lymphoid-histiocyte infiltration, changes in the arteris, and metabolic disturbances in the myocardium).

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USSR

SOBOLEVA, N. A.

UDC 537.533.2+537.534

"Effective Photoemitters. (A Survey)"

Effektivnyye fotoemittery. (Obzor) (cf. English above), VINITI, Moscow, 1970, 29 pp, ill., 74 references (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12Zh648 DEP)

Translation: A survey of literature published from 1968 through 1970. Basic achievements in improving the emission characteristics of traditional photo-cathodes achieved chiefly by technological means with the application of optical methods of raising their effectiveness are briefly summarized. Methods for determining the depth of the photoelectron yield are discussed. Work concerning the preparation and investigation of a new class of effective emitters based on highly doped hole semiconductors $A_{III}B_V$ with a reduced work function are analyzed. Directions of research toward explaining the factors effecting the emission properties of new emitters, optimization of methods for preparing them, the development of

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USSR

SOBOLEVA, N. A., Effektivnyye fotoemittery. (Obzor), VINITI, Moscow, 1970

29 pp, ill., 74 references

practical methods for producing photocathodes based on GaAs (including semitransparent), and the search for new materials for preparing photocathodes that are sensitive in the IR region of the spectrum are discussed. Also discussed are secondary emitters and cold cathodes based on materials with negative electron affinity. 74 references. N. S.

2/2

- 62 -

Acc. Nr:

A0048940

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code:

UR0079

100209e Synthesis and properties of potassiumcumyl- and potassium-tert-butyl peroxides. Sokolov, N. A.; Usov, L. G.; Shushunov, V. A. (Nauch.-Issled. Inst. Khim. Gork. Gos. Univ. im. Lobachevskogo, Gorki, USSR). *Zh. Obshch. Khim.* 1970, 40(1), 209-12 (Russ). Treating 2.2 g powd. KNH₂ in MePh with 3.04 g PhCMe₂O₂H gave 92% PhCMe₂O₂K (I); prepd. in heptane and treated with PhCMe₂O₂H, this salt formed a 1:1 complex, a hygroscopic solid. In C₆H₆, I trimerizes. Similarly was prepd. Me₂CO₂K and its 1:1 complex with Me₂CO₂H., and 1:2 complex with the peroxide. Treating PhCMe₂O₂K with H₂O-MePh gave a cryst. dihydrate, also formed from similar reaction of dry KOH with the peroxide in MePh.

G. M. Kosolapoff

REEL/FRAME
19800712

70h

USSR

UDC 621.387

DUBITSKIY, L.G., KOSLOV, R.I., MOROZOV, I.I., SOKOLOV, N.A., SRETENSKIY, V.N.
"System Approach To Analysis Of Causes And Nature Of Failures Of Products Of
Electronic Technology"

Elektron. tekhnika. Nauchno-tekhn. sb. Upr. kachestvom i standartiz.
(Electronic Technology. Scientific-Technical Collection. Quality Management
And Standardization), 1970, Issue 3, pp 3-12 (from RZh--Elektronika i yeye
primeneniye, No 4, April 1971, Abstract No 4A2)

Translation: The principles are considered of a system approach which makes it possible to determine operationally the causes of failures and to increase the effectiveness of operation of a system of supervision and control of the quality of the products of electronics technology. Examples are presented of the realization of a system approach for gas-discharge devices (with gas filling) which assumes use of a computer for processing of the results obtained. M.V.

1/1

1/2 023
UNCLASSIFIED
TITLE--PREPARATION OF NITROALKATRIENES -U-
AUTHOR--SOKOLOV, N.A., POPOVA, L.A.
COUNTRY OF INFO--USSR
SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. KHIM. NAVUK 1970, (1), 112
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, AROMATIC NITRO COMPOUND, BENZENE
DERIVATIVE, UV SPECTRUM, IR SPECTRUM, SPECTROSCOPIC ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/1076
CIRC ACCESSION NO--A0104474
STEP NO--UR/0419/70/000/001/0112/0112
UNCLASSIFIED

2/2 023

CIRC ACCESSION NO--AP0104474

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDING 1.3 G MEND SUB2 TO 1 G NAOH
IN 20 ML MEQH, FOLLOWED BY, AT 0DEGREES, 2.7 G PHENYLSORBALDEHYDE IN
MEQH AND HOLDING THE MIXT. 0.5 HR GAVE DN DILN. WITH H SUB2 O AND
ACIDIFICATION WITH H SUB2 SO SUB4, 95PERCENT
1, PHENYL, 6, NITRO, 1, 3, 5, HEXATRIENE, M. 106-7DEGREES. UV AND IR SPECTRAL
DATA WERE GIVEN.

UNCLASSIFIED

USSR

UDC: 621.396.677.7(088.8)

KISLÓV, A. G., SOKOLOV, N. F., Leningrad Military Engineering Academy imeni A. F. Mozhayskiy

"A Coaxial Radiator"

USSR Author's Certificate No 250226, filed 17 Jul 67, published 16 Jan 70 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7B67 P)

Translation: The proposed radiator consists of an asymmetric dipole which supplies a coaxial feeder with a slot cut in its outer rigid shell, and a disc back reflector. The radiator is designed for setting up circular field polarization. The dipole provides the vertical component of the electric field, and the slot provides the horizontal component. The dipole should be shorter than a $\frac{1}{2}$ -wavelength for its input impedance to be capacitive, and the slot should be shorter than a $\frac{1}{2}$ -wavelength for its input impedance to be inductive. By trial and error, the lengths of the dipole and slot are selected to give a phase shift of close to $\pi/2$ between the vertical and horizontal components of the radiated electromagnetic field, which is necessary to produce circular polarization. By locating the dipole and slot on one side of the axis of the coax feed line and using an unbalanced dipole, the phase center of the radiator is shifted from the axis of symmetry of the feed line. This

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KISLOV, A. G. et al., USSR Author's Certificate No 250226

makes it possible to rock the radiation pattern of the antenna by rotating the radiator about the axis of symmetry without moving it away from the focal axis of the paraboloid. The simplicity of the radiator design is noted. One illustration.
A. K.

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USSR

UDC 629.78.017.2

SOKOLOV, N. I. and LIPATOV, A. V.

"Necessary Conditions of Linear System Continuity"

Tr. Mosk. Aviats. In-ta (Works of the Moscow Aviation Institute) No 240, 1972, pp 26-30 (from Referativnyy Zhurnal--Raketostroyeniye, No 5, May 73, Abstract No 5.41.148)

Abstract: Two necessary conditions were obtained for the continuity of linear systems for which the characteristic polynomials

$$a_0 z^n + a_1 z^{n-1} + \dots + a_n$$

have positive coefficients a_i . One of the conditions consists of the fact that for a continuous system the sequence

$$\frac{a_2}{a_0}, \frac{a_3}{a_1}, \frac{a_4}{a_2}, \dots, \frac{a_n}{a_{n-2}}$$

should be diminishing. The second condition is reduced to the following relationship of the polynomial coefficients:

$$a_1^2 - C_i a_{i-2} a_{i+2} \quad 0, i = 2, 4, 6, \dots, n-2,$$

where $C_i = \frac{(n-i+2)(i+2)}{(n-1)i}$

3 bibliographic references.

1/1

USSR

UDC 629.78.017.2

SOKOLOV, N. I. and MAKOVLEV, V. I.

"Synthesis of Parametrically Invariant Compensation Systems in the Measurement of Two Output Magnitudes of the Control Object"

Tr. Mosk. Aviats. In-ta (Works of the Moscow Aviation Institute), 1972, No 240, pp 16-25 (from Referativnyy Zhurnal--Raketostroyeniye, No 5, May 73, Abstract No 5.41.140 by the authors)

Abstract: In the design of automatic control systems it is often possible to use data about several coordinates of the control object. Thus, for example, in the examination of the longitudinal movement of an aircraft it is difficult to obtain information about the angular velocity of pitch and normal overload. Consequently, the sensors of angular velocities and linear accelerations react differently to a change in the aircraft motion parameters which occur when the aircraft vibrates around its center of mass. If the sensor of linear accelerations reacts to a change of forces, occurring during a change in angles of attack, then the sensor of angular velocities reacts to the effect of moment changes. An approach is presented in this work toward synthesis of parametrically invariant compensation systems for the possibility of measuring two output magnitudes of the control object which provides for stability and the

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USSR

SOKOLOV, N. I. and MAKOVLEV, V. I., Tr. Mosk. Aviats. In-ta, 1972, No 240,
pp 16-25

required indicators of system quality in any finite range of parameter changes
of the control object. 1 figure, 3 bibliographic references.

2/2

SOKOLOV, N. L.

STUDY OF THE COMPETITION OF AIR EXHALED BY MAN
EXPOSED TO SOME EXTREMAL FACTORS

Article by N. L. Sokolov, Yu. S. Zhelezov, V. P. Shelton and K. M. Vyzhikov
Moscow, ~~USSR~~ *Journal of Biological Chemistry*, Vol. 241, No. 1, 1972,
pp 57-60, abstracted for publication [7 August 1970]

SO: JPRS 53382
14 June 71
UCC 612-2212-012

Abstract: This paper presents the results of an analysis of
contaminants present in the air exhaled by human subjects
exposed to different stress effects (20-day bed confinement,
20-day starvation, 10-day diet of lyophilized food, high
temperature and humidity). The calorimetry, nephelometry and
gas chromatography methods were used. The most significant
air changes were detected during exposures to prolonged
starvation and high temperature (40°C).

Formation of an atmosphere within a pressurized closed space of
restricted volume is dependent to a considerable degree on the processes of
man's vital functions. It has been established that through his lungs, skin
and gastrointestinal tract man releases a whole series of gaseous substances
which under the conditions prevailing in the pressurized volume can accu-
late and exert an influence on the state of the atmosphere within this space
(Yu. G. Nevelov, et al.; V. V. Kurov and L. A. Rumov; Condit, et al.).
The release of microimpurities in the exhaled air impurities with
different intensity and is dependent to a considerable degree on the param-
eters of the microclimate, food ration and schedule, physical load, phar-
macological medication, and a number of other factors (V. V. Kurov and
L. A. Rumov, and others). It is noted that the percentage of microimpurities
retained with the exhaled air is extremely high.

This paper gives the results of qualitative and quantitative investi-
gations of gaseous microimpurities present in air exhaled by human subjects
even the body is exposed to some external factors: 20-day hypodynamia, 20-day
total starvation, around-the-clock exposure to high temperature (up to 40°C)
and prolonged consumption of dehydrated foods.

SOKOLOV, N. L.

JKRS 57577
15 Nov 72

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ENG 616,391-092,9-006,7-07-1507,100
GAS CHROMATOGRAPHIC INVESTIGATIONS OF VOLATILE PRODUCTS OF HUMAN METABOLISM
ACCOMPANYING REDUCED FOOD INTAKE AND STARVATION

Article by N. P. Savina, L. N. Stepanov, N. L. Sokolov and Yu. G. Kozlov
Moscow, Kosmicheskaya Biologiya i Meditsina, 1972, Vol. 6, No. 2, pp. 101-104
October 1972, pp. 67-69, submitted for publication 21 June 1972

Abstract: This paper gives the results of comparative studies of volatile metabolites eliminated together with the urine, exhaled air and expired air by human subjects during prolonged starvation. It also presents data obtained by examining the gas-liquid phase of urine from human subjects kept on calorie-reduced diets. Changes in the content of ketones and alcohols were similar in all the three analyzed media. Changes of this type may develop in patients suffering from certain metabolic disorders. Accordingly, they can be used as an additional test during functional diagnosis of some diseases.

Study of the gaseous metabolites released by man during his vital functions and changes in the qualitative and quantitative composition of the exhaled air and expired air under the influence of dieters with a reduced caloric content and during starvation are of definite interest for the study of the metabolism process, diagnosis of different diseases and clarification of the influence of these metabolites on the processes of forming the metabolic medium in pressurized, enclosed chambers.

It has been demonstrated in a number of studies that with treatment of fat or carbohydrate metabolism, particularly during diabetes, pregnancy, starvation, or an irregular food intake, the number of ketone bodies (B-oxopholytic acid, acetone, acetoacetic acid) in the urine, blood and exhaled air changes considerably (V. V. Rubcov and L. A. Timov; D. F. Frenkel; M. V. Kozlov, et al.).

It was recently established that in addition to ketones the human body eliminates a number of other volatile compounds. A detailed investigation of the composition of exhaled air with the use of highly sensitive

1/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--TERNARY SYSTEMS OF SODIUM NITRATE, SODIUM NITRITE, AND THE SODIUM SALT OF AN ALIPHATIC ACID -U-

AUTHOR--(03)-TSINDRIK, N.M., SOKOLOV, N.M., KHAITINA, M.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 852-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--EUTECTIC MIXTURE, SODIUM NITRATE, SODIUM NITRITE, ALIPHATIC CARBOXYLIC ACID, CRYSTALLIZATION, ORGANOSODIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1728

STEP NO--UR/0078/70/015/003/0852/0855

CIRC ACCESSION NO--AP0115557

UNCLASSIFIED

2/2 012

CIRC ACCESSION NO--AP0115557

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. TRIANGULAR PHASE DIAGRAMS OF NA PRIME POSITIVE PARALLEL TO HCO SUB2 PRIME NEGATIVE, NO SUB3 PRIME NEGATIVE, NO SUB2 PRIME NEGATIVE, AND NA PRIME POSITIVE PARALLEL TO ACO PRIME NEGATIVE, NO SUB3 PRIME NEGATIVE, NO SUB2 PRIME NEGATIVE SYSTEMS (SYSTEMS (1) AND (2), RESP.) WERE CONSTRUCTED BY USING DTA AND VISUAL POLY THERMIC DETNS. SYSTEM (1) HAS 4 CRYSTN. FIELDS (OF NAO SUB2 CH, NANO SUB3, AND 2NANO SUB3 .3NANO SUB2) MEETING AT THE EUTECTIC AT 142DEGREES AND 33.5, 29, AND 37.5 OF THE COMPONENT SALTS, RESP., AND AT THE TRANSITION POINT AT 152DEGREES AND 30.5, 32, AND 37.5PERCENT OF THE COMPONENT SALTS, RESP. ANALOGOUSLY, THE 4 CRYSTN. FIELDS OF (2) MEET AT THE EUTECTIC POINT AT 173DEGREES AND NANO SUB3 32, NANO SUB2 42, AND NAOAC 26PERCENT AND AT THE TRANSITION POINT AT 178DEGREES AND 47, 33, AND 20PERCENT OF THE COMPONENT SALTS, RESP.).

UNCLASSIFIED

Genetics

USSR

UDC 575

SIDOROV, B. N., and SOKOLOV, N. N., Doctors of Biological Sciences

"Genetic Recombination: The Mechanism of Exchange on the Cytological and Molecular Level"

Moscow, Priroda, No 4, 1970, pp 30-36

Abstract: The behavior of ring chromosomes in mitosis was studied in cells of *Crepis capillaris* treated with colchicine. Polyploids showed not an increase in the number of ring chromosomes, but an enlargement of chromosomes. Thus, all the material of chromosomes formed by reproduction enters into one ring chromosome, increasing its size. Such a structure is possible only by exchange between two ring chromatids, forming one common ring. The process of "break-binding" in chromatids, repeated several times, is evident. This confirms McClintock's position about the instability of ring chromosomes in *Zea*, and the subsequent exchange between the chromatids. The formation of ring chromosomes of increased size indicates a spontaneous exchange between the chromatids, confirming Taylor's autoradiographic results, and contradicting the theory of the "matrix" change. Exchange between two sister chromatids growing from the halves of the mother chromosome is also noted. This type of recombination cannot show any genetic differences. The behavior of ring chromosomes is very similar to that of the ring molecules of DNA in mitochondria observed by D. Vinograd. It was suggested that the exchange is a result of the physicochemical properties of DNA molecules.

1/1

USSR

SOKOLOV, N. P., Kiev

UDC: 512.831:517.944

"Concerning Stability of the Zero Solution of Systems of Partial Differential Equations"

Kiev, Ukrainskiy Matematicheskiy Zhurnal, Vol 25, No 1, 1973, pp 66-72

Abstract: Multidimensional matrices are applied to the investigation of stability, in the Lyapunov sense, of the zero solution of systems of partial differential equations. Criteria of stability and instability of the zero solution of linear and linearized first-order systems of partial differential equations solved with respect to their partial derivatives are formulated in terms of the theory of multidimensional matrices. The coefficients in these equations are assumed to be constants or periodic functions. It is noted that similar results can be obtained as well for systems of higher-order partial differential equations solved with respect to the highest derivatives, since the solution of such systems reduces to solution of first-order systems of partial differential equations.

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- 2 -

USSR

SOKOLOV, N. P. (Kiev)

"Application of Functions of Multivariate Matrices to the Solution of Systems of Linear Partial Differential Equations of Higher Order"

Kiev, Ukrainskiy Matematicheskii Zhurnal; July-August, 1971; pp 494-507

ABSTRACT: The author studies a system of linear partial differential equations of higher order with variable (and constant) coefficients which is solved for the higher derivatives, whose orders are assumed to be the same. Taking the unknown functions and their partial derivatives to the order of one below the order of the system for the new unknown functions, the author replaces the given system with a linear system of first-order partial differential equations, which is then broadened in a certain way to an equivalent system consisting of those equations partially repeating and considered by him in a previous work. For this system and, consequently, for the given one, necessary and sufficient conditions are established for complete integrability, and an expression is obtained for the complete integral of the given system which depends on the initial values, arbitrarily selected, of the desired functions and their partial derivatives to the order of one below the order of the system.

USSR

UDC: None

GROSS, Ye. F. (deceased), SOKOLOV, N. S., and TITKOV, A. N.

"Phononless Annihilation Radiation of Indirect Excitons in Germanium Crystals With Isoelectronic Impurities"

Leningrad, Fizika Tverdogo Tela, vol 14, No 7, 1972, pp 2004-2007

Abstract: The results are given of experiments performed to study the luminescence of indirect excitons in germanium crystals with isoelectronic admixtures of Si and Sn at a temperature of 4.2° K. The DFS-12 spectrometer with a PbS photoresistor was used as a receiver for recording purposes. The luminescence spectrum of a germanium crystal containing an isoelectronic Si impurity of 0.7 at. % and a small amount ($5 \cdot 10^{14}$ per cc) of Sb donor material, in which the radiation bands typical of germanium with no silicon are clearly indicated is shown. These bands are the result of the annihilation of free as well as bonded excitons with phonon excitation. The effect on the spectrum of increasing the sensitivity of the equipment and of adding silicon to the crystal specimens is also noted. Investigations were made of the luminescence of free germanium crystal excitons containing Sn, in which phononless annihilation of free excitons with elastic dispersion of the Sn atoms was observed

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USSR

GROSS, Ye. F., et al., Fizika Tverdogo Tela, vol 14, No 7, 1972, pp 2004-2007

The authors, associated with the A.F. Ioffe Physico-Technical Institute of Leningrad, express their gratitude to V. I. Safarov for his comments, to I. N. Belokurova and V. S. Zemskov for growing the Ge-Si crystals used in the experiments, and to Dr. V. Airo of France for preparing the germanium, tin-alloyed specimens.

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USSR

GROSS, Ye. F., NOVIKOV, B. V., and SOKOLOV, N. S.

"Luminescence of Bonded Excitons in Germanium Crystals"

Leningrad, Fizika Tverdogo Tela, vol 14, No 2, 1972, pp 443-447

Abstract: Because little is known of the glow phenomena of germanium doped with elements of the III and V groups, this paper attempts to fill part of that gap by discussing the luminescence of exciton-doped complexes in germanium monocrystals alloyed with Sb, P, As donors and Ga, In acceptors. In the experiments, doping concentrations varied from $5 \cdot 10^{15}$ to $5 \cdot 10^{16}/\text{cm}^3$, and the device used for recording the luminescence was the screen spectrometer type DFS-12 with a photoresistive PbS as the sensor. Most of the measurements were made at a temperature of 4.2°K , attained by directly submerging the specimens in liquid helium, and an incandescent lamp or helium-neon laser was used to excite the luminescence. The authors, connected with the Semiconductor Institute

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USSR

GROSS, Ye. F. et al, Fizika Tverdogo Tela, Vol 14, No 2, 1972,
pp 443-447

of Leningrad and the A. A. Zhdanov Leningrad State University, express their gratitude to R. I. Korchazhkina for preparing the specimens, to S. A. Permogorov for discussing the results, and to V. V. Kulakov for his assistance in running the experiments.

2/2

30KOLOV, D.G.

STUDY OF THE PROCESS OF STRENGTHENING SOLID BODIES BY MEANS OF NUCLEAR GAMMA-RESONANCE

G. N. Beloborodkiy, V. N. Giltsovich, O. G. Sokolov, and Yu. P. Khimich, Leningrad State University imeni A. A. Zhdanov, submitted to press 28 September 1971

UDC 669.017.3:519.4

This work was attempted for the purpose of studying the physical processes responsible for the strengthening of real bodies, in particular alloys, by using the method of nuclear gamma-resonance (YaGR).

The application of nuclear gamma-spectroscopy for these purposes seems to be very justified to us because of its great sensitivity to the phase composition of the specimens. Aside from this, the strengthening of solids is associated in one way or another with the change in the structural state of the crystalline lattice, in particular with the change of the degree of its defect occurrence, which must be felt on the magnitude of the degree of absorption factor.

For the investigation, iron-vanadium steel was selected (1% V, 0.2% C) and steel of brand 20KhN1MF (0.2% C, 3% Ni, 1% Mo, Cr < 1%, V < 1%), which may be strengthened not only by the hardening method, but also by cold rolling but also as a result of the processes of secondary hardening, caused by the precipitation of dispersed special carbides in the tempering of hardened specimens.

The experiments were conducted on specimens which had passed through various types of treatment for the purpose of changing their strength properties: cold-rolled (degree of deformation 75%); hardened at 1100 and 850°C; and tempered at 900°. Specimens hardened at 850°C were subjected to tempering at temperatures of 400, 550, and 650°. In which the processes of secondary hardening occur.

*Selected Publications of
The Academy of Sciences USSR
30 March 1973 - From File
Metals & Metallurgy
Vol. 34, # 6, 1973*

The spectra were recorded by a 800-channel analyzer of the Mossbauer spectrometer of the electrodynamic type, with a constant acceleration, and were processed on an PVM (electronic computer).

All the spectra are Zeeman groups of six, or more, at equality, by superposition of several groups of six, corresponding to various states of the nearest surroundings of iron atoms. At $1\% \text{ V}_2\text{O}_5$ vanadium, states with only one replacement atom in the nearest coordinate spheres have a non-disappearing probability. According to data from reference [1], the presence of one atom of vanadium in the first two spheres decreases the field in the iron by approximately 8%, and in the third sphere increases it by 1.6%. Thus, ignoring the effect of the third and subsequent spheres, in simplified phase analysis we may consider the spectrum to be consisting of two groups of six. In this case we will not consider less than 1% of iron atoms, having two or more atoms of vanadium in the first two coordination spheres, having reasonable values of χ^2 obtained by us in the processing of the spectra on the EVM (usually of the order of the number of points of the experimental spectrum) also show the permissibility of such an approximation.

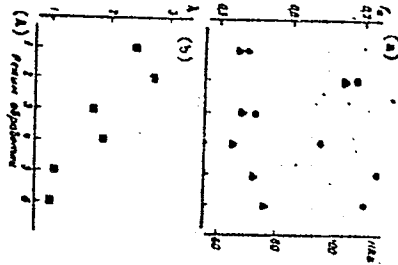


Figure 1. Dependences of the magnitude of the resonance absorption factor f_0 (a) and the IRB hardness (b) upon the form of treatment of the specimen (a). The comparative dependence of χ^2 (■) of the degree of asymmetry of the lines of the spectrum upon the form of the specimen is also shown (b). Along the abscissa axis are plotted: (1) annealing at 900°C; (2), (3) hardening at 1100 and 850°C; (4)-(6) tempering at 400, 550, and 650°C. (A) treatment regime.

USSR

UDC: 621.371.332.3:621.391.883.6

SOKOLOV, O. L., SHAMSHUR, V. B.

"On a Method of Increasing Interference Suppression in Reception of Doppler Radio Signals"

Tr. Sev.-Zap. zaach. politekhn. in-t (Works of the Northwest Polytechnical Correspondence Institute), 1972, No 20, pp 8-11 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 1286 [résumé])

Translation: A method based on counting the number of fluctuation spikes and comparing with a threshold N_0 is used for detecting Doppler radio signals. Expressions are presented for calculating the probabilities of false alarms $P_{f.a}$ and signal detection P_{det} , and also the results of calculations of interference suppression.

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USSR

SOKOLOV, O. I.

UDC: 621.391.8

"Noise Immunity of Phase-Time Detectors of Signals in Non-Gaussian Noise"

Kiev, Izvestiya VUZ SSSR--Radioelektronika, No 6, 1972, pp 786-792

Abstract: The detector discussed in this article is of the type to be found in radar systems using continuous radiation, the received signal appearing against a background of noise formed from reflections made by various interfaces, such as water-air and water-ground boundaries. The noise spectrum at the receiver antenna output then has a discrete part at the carrier frequency. Mathematically, the mixed noise background can be put in the form of two terms, one at the carrier frequency and the other in the Gaussian character determined by the parasitic amplitude-phase modulation of the reflected field. This paper considers a phase-time detector and limiter circuit, and its immunity to noise of this type. In the analysis, it is assumed that the effect of amplitude variations of the envelope is completely eliminated by the ideal limiter, and that the signal information is therefore in the phase only. The author concludes that phase-time detectors are effective when the useful signal duration is much greater than the correlation interval of the noise.

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USSR

UDC 621.396.96

SOKOLOV, O.L., SHAMSHUR, V.B.

"Detection Of Doppler Radio Signals By Receiver With A Counter Of The Number Of Overshoots Of Additive Noise"

Radiotekhnika, Vol 27, No 6, June 1972, pp 1-5

Abstract: The analytical dependences are considered of a method of detection of doppler radio signals based on counting of the number of overshoots of the fluctuations at two polar levels. An engineering method of calculating the noise immunity of the receiver is developed. Graphs are presented of: (1) The characteristics of noise immunity calculated by formulas developed in the work; and (2) The experimental and calculated values for the mean values and dispersion of the number of overshoots of fluctuations used during calculation of the noise immunity of the detector. 4 fig. 7 ref. Received, 5 July 1970; after further improvement, 2 March 1971.

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Radar

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USSR

UDC 621.396.963

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BARANOV, I. M., DYMOVICH, N. D., SKVORTSOV, S. M., SOKOLOV, P. M., MOROZ, V. G.,
POGORELOV, B. P.

"Radar Display for Determining the Parameters of Atmospheric Inhomogeneities"

USSR Author's Certificate No 253178, Filed 11 Dec 67, Published 24 Feb 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9G51P)

Translation: A radar display containing a video amplifier and a plan position indicator has been patented for determining the parameters of atmospheric inhomogeneities. In order to represent the radar image of atmospheric inhomogeneities in the form of a series of concentric black and white rings, a coding tube is included between the video amplifier and the plan position indicator via a pulse amplifier. This coding tube converts the video signals from the atmospheric inhomogeneities into a train of pulses equal with respect to magnitude and different with respect to width and duty factor depending on the distribution of the instantaneous values of the video signal voltage. The joint effect of radial-circular scanning of the plan position indicator and rectangular pulse voltage create concentric black and white circles on the screen. The width of each circle corresponds to a defined interval of atmospheric inhomogeneity intensity. This facilitates determination of the inner structure of the inhomogeneity at the given point in time, and it permits

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USSR

BARANOV, I. M., et al., USSR Author's Certificate No 253178, Filed 11 Dec 67,
Published 24 Feb 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9G51P)

information about the intensity of precipitation with respect to area to be
obtained and zones safe for aircraft flights to be determined. There are
two illustrations.

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USSR

UDC 621.396.967:551.501.81

SOKOLOV, P. M., BARANOV, I. M.

"Effect of the Duration of the Main Bang of a Radar on the Magnitude and Shape of the Echoes from Meteorological Objects"

Sb. nauch. tr. Kiev, in-t inzh. grazhd. aviatsii (Collection of Scientific Works of Kiev Institute of Civil Aviation Engineering), 1971, vyp. 6, pp 25-28 (from RZh-Radiotekhnika, No 5, May 72, Abstract No 5(4.0))

Translation: The effect of the finite pulse duration on the magnitude of the error during radar measurements of the parameters of meteorological subjects is analyzed. It is demonstrated that the error is small if the horizontal dimensions of the subject are appreciably greater than the spatial extent of the main bang, but they can reach a significant magnitude if the extent of the pulse is comparable to the extent of the object. There are 4 illustrations and a 2-entry bibliography.

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USSR

UDC 621.396.967:551.501.81

BARANOV, I. M., DYMOVICH, N. D., SOKOLOV, P. M.

"Errors in Measuring the Intensity and Size of Meteorological Objects as a Result of the Finite Width of the Radiation Pattern of the Radar Antenna"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Collection of Scientific Works of Kiev Institute of Civil Aviation Engineering), 1971, vyp. 6, pp 22-25 (from RZh-Radiotekhnika, No 5, May 72, Abstract No 5G41)

Translation: A study is made of the effect of the space factor (the ratio of the volume filled by meteorological particles to the entire simultaneously reflecting object) on the magnitude and shape of the echo when rocking the beam with respect to the cross section of the cloud in the azimuthal direction. It is demonstrated that in order to decrease the errors caused by the finite width of the radiation pattern it is necessary to use a narrow beam antenna. There are 2 illustrations and a 3-entry bibliography.

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SOKOLOV, P.P.

Virology

50: JPRS 54153
29 SEP 71

1-083

DOC: 616.5-0924-097.5-072.0

SCORE OF THE RESULTS OF A STUDY OF DEEPAL HERPESCENTIZATION INDUCED BY A
LATENT VIRUS OF CS701/63 WIDE PHENOMENON

Induced by A.L. Iakovlev, N.Y. Sviridovskiy, D.R. Kozlov, N.P. Sokolov, Vira-Preparations, USSR Ministry of Health, Institute of Experimental and Microbiology, USSR Academy of Medical Sciences, Institute of Epidemiology and Infection, N.F. Gubalova, USSR Academy of Sciences, Vsesoyuznyy Nauchno-Issledovatskiy Tsentr, Moscow, No 7, 1971, pp 74-81

In 1965, in our experiments with sarcoma K-237, induced in inbred CS701/63 mice with the chemical carcinogen nipa, we discovered the unusual phenomenon of tissue incompatibility. Skin transplants from mice with sarcoma to recipients of the same line consistently underwent rejection just as in the case with skin transplants of allogeneic origin from another inbred line of mice (G.Ya. Svetovidovskiy et al., 1979, b, c). Further investigation of this phenomenon, which was named "skin heterogenization," established that its onset is linked with the effect of a distinctive virus associated with sarcoma K-237 (G.Ya. Svetovidovskiy et al., 1968, b). These investigations by a number of authors in many laboratories the world over: 1) investigation of appearance of new antigens in normal tissues of tumor carriers and, as a more general question, investigation of antigen exchange between cell systems in the organism and in vitro; 2) investigation of viral heterogenization of normal cells and the role of such phenomena in pathology, in particular with reference to immunopathological states. Thus, investigation of this problem is timely both for general immunology and for such directions in its application as transplantation and antitumor immunity. In this report we should like to sum up some of the results of investigation of skin heterogenization on the example of the experimental model we have described, and to discuss the present status of the problem as a whole. Like any new problem, this one presents a number of debatable aspects which are also going to be discussed.

Material and methods. The experiments were conducted on inbred CS701/63, BAB/c, GBA, C3H, 7676 mice which were obtained from the Steubovskiy Nursery of the USSR A.S. Hybrids from crosses between CS701/63 and BAB/c mice were obtained in our animal shelter. To induce tumors, we gave the

also intracutaneous injections of 7,12-dimethylbenzanthracene (DMBA) in streptococcal infection. In a dosage of 0.5 mg, tumors developed at the site of infection of the earlobe within 3-9 months. They were transferred to syngeneic mice by means of subcutaneous implantation of small pieces. The method of preparing virus-containing cell-free tumor extracts and of testing them on mice was described previously (G.Ya. Svetovidovskiy et al., *Izvestiya*, 5, 1970).

Skin transplants were transferred following a slight modification of the method of Billingham and Medawar (1951). Body skin transplants, including all layers, 3.5x2 or 2x2 cm in size were applied to recipients by means of an adhesive strip along the margins of the transplant and site. For this purpose we used a special preparation of DF-6 adhesive (adhesive for this purpose we first excision of the transplanted skin was made on the 2nd-5th day after transplantation); primary acceptance of any type of transplant normally occurred within this time. At this time we rejected all recipients showing signs of injury or infection of the transplants. The percentage of such rejects ranged from zero to ten in the different experiments. In order to ascertain the time of transplant rejection, they were examined daily. The final criterion of acceptance or rejection was the presence or absence of hair growth, which was in the opposite direction from growth on the recipient's back because the graft was twisted at the time of transplantation.

Chief phenomenon and etiological agent. The reaction of rejection of skin grafted to syngeneic (S721/6J) recipients from carriers of sarcoma S-337 was identical to the reaction of rejection of allogeneic transplants (of skin transplants, shown vasculization by the 6th day and were accepted. Development of rejection occurred between the 8th and 11th experimental day (Table 1). Histological examination of the transplants also revealed complete similarity (Figure 1-4), on the tenth day the reaction was characterized by marked dilatation of vessels and arrested circulation. In both instances infiltration of the transplants, and this is quite typical precisely for the rejection reaction in mice (Brent, 1955). In addition to mononuclear there was a considerable number of polymorphonuclear leukocytes in the plant. There were also marked signs of activation of connective tissue in the transplanted dermis and subcutaneous layer. The agent "responsible" for development of heterologization of the skin presented properties that were typical for sarcoma G.Ya. Svetovidovskiy et al., 1970). Table 2 gives the summary data on the heterologizing effect of the tumor and of extracts thereof. As seen in Table 2, in almost 1,000 cases of transplantation, there was heterologization of the skin by the tumor or virus-containing extract, whereas in the control provided accurate consideration of primary healing of the grafts was seen in no rejections were observed. It has been shown (D.M. Kholodov et al., 1970; G.Ya. Svetovidovskiy et al., 1970) that skin heterologization occurs both after infection with tumor extract and after transplantation of heterologized skin. In the latter event, the phenomenon developed after each successive transplantation for 15 passages, starting in 1966. Thus, the viral nature of the agent is confirmed by the fact that it can be separated from cells, it

MATHEMATICS

Differential and Integral Equations

USSR

UDC 517.945

SOKOLOV, P. V., Ryazan Radio Engineering Institute

"Limiting Theorems Concerning the Existence of Integral Surfaces Adjacent to Critical Integral Elements"

Minsk, *Differentsial'nyye Uravneniya*, Vol 7, No 9, Sep 71, pp 1672-1683

Abstract: The author proves limiting theorems concerning the existence of solutions to first-order partial differential equations.

$$F = -z + f(x, y, p, q) = 0 \tag{1}$$

which satisfy the initial conditions given in the form of a line $x = x_0(v)$, $y = y_0(v)$, $z = \eta$ and a point $x = x_0(v) = 0$, $y = y_0(v) = 0$, $z = z_0(v) = 0$ for the singular solution to equation (1). The consequence of these theorems is a theorem concerning the existence of solutions which satisfy the initial condition given in the form of a critical characteristic element $x_0(v) = 0$, $y_0(v) = 0$, $z(v) = \pm c$, $p_0(v) = 0$, $q_0(v) = 0$ of equation (1). As illustrative examples the author looks at the geometric picture of the integral surfaces of several first-order equations with partial derivatives near their critical characteristic elements. The article contains 6 bibliographic entries.

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UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--DISTRIBUTION OF PARTICLES BY SIZES IN VARIOUS REGIONS OF SPRAYER
FLAME -U-

AUTHOR--(03)-PETROV, G.D., SOKOLOV, R.N., VASILVEV, V.A.

COUNTRY OF INFO--USSR

SOURCE--INZHENERNO-FIZICHESKIY ZHURNAL, 1970, VOL 18, NR 1, PP 105-109.

DATE PUBLISHED-----70

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

TOPIC TAGS--FLAME STRUCTURE, FLAME EMISSION, PLASMA TORCH SPRAYING,
PARTICLE DISTRIBUTION, FLOW RATE, LIGHT EMISSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0702

STEP NO--UR/0170/70/018/001/0105/0109

CIRC ACCESSION NO--AP0126414

UNCLASSIFIED

2/2 046

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0126414

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FIG. 1. DISTRIBUTION OF INTENSITY OF LIGHT DISSIPATED BY SPRAYER TORCH DEPENDING ON THE ANGLE OF DISSIPATION FOR BEAMS PASSING AT VARIOUS DISTANCES FROM TORCH AXIS (A); OF DISTANCE TO TORCH AXIS FOR DIFFERENT ANGLES OF DISSIPATION (SIGMA) (N, NUMBER OF ZONE); OF DISSIPATION ANGLE FOR VARIOUS TORCH ZONES (1-8) AFTER CALCULATING BY FORMULA (1) (B). FIG. 2. SCHEME OF SEPARATION OF TORCH ZONES INTO ANNULAR REGIONS (I AND II, PLANES WHERE MEASUREMENTS WERE CARRIED OUT. L, DISTANCE FROM NOZZLE CUT TO PLANE UNDER STUDY. 1, 2, 3, N, NUMBERS OF TORCH REGIONS). FIG. 3. DISTRIBUTION OF PARTICLES BY SIZES FOR VARIOUS TORCH REGIONS IN LINEAR (SIGMA, 2) AND NORMAL LOGARITHMIC SCALE (A, B) (ERF(E), KRAMP FUNCTION OF D). FIG. 4. PULSE PHOTOGRAPH OF TORCH. FIG. 5. MEDIAN DIAMETER BARDMUM OF PARTICLES IN DIFFERENT TORCH REGIONS (N, NUMBER OF REGION). SUMMARY THE RESULTS OF INVESTIGATION OF SIZE DISTRIBUTION OF PARTICLES SUSPENDED IN DIFFERENT POINTS OF AXI SYMMETRIC SPRAYER FLAME ARE CITED. THE DISTRIBUTION OF PARTICLES BY SIZES IS NORMALLY LOGARITHMIC. DISTRIBUTION OF MASS FLOW RATE OF PARTICLES IS ANALYZED IN VARIOUS REGIONS.

UNCLASSIFIED

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USSR

SOKOLOV, S., Candidate of Medical Sciences, TASS correspondent

"What is Neuropharmacology?"

Frunze, Sovetskaya Kirgiziya, 17 Mar 70, p 4

Abstract: Research being conducted by the Laboratory of Pharmacology of the Nervous System at the Institute of Pharmacology, USSR Academy of Medical Sciences, is described. V. V. Zakusov, Academician of the USSR Academy of Medical Sciences and director of the institute, and K. S. Rayevskiy, senior scientific associate, are in charge of an experiment which uses an automatic, multichannel register of motor activity. The instrument independently records all the movements of the animals located in a special chamber and transmits the signal to 40 counters. Nikolay Alekseyevich Kruglov, senior scientific associate of the laboratory, is using a modern radio-electronic device which can record the signals, of milli-second duration, by which neurons transmit information to each other. Kruglov and his colleagues have established that morphine, aminazine, and similar substances inhibit the signaling rhythm of nerve cells. These experiments yielded many new tranquilizers and stimulants. Even now, neurotropic drugs are making it possible not only to treat many diseases successfully, but also to intervene in the most important processes taking place in the organism.

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USSR

SOKOLOV, S. A., Institute of Inorganic Chemistry, Siberian Department, Academy of Sciences, USSR, Novosibirsk

"The Kinetic Equation Under Conditions of Magnetic Breakdown"

Leningrad, Fizika Tverdogo Tela, No 9, September 1970, pp 2578-2582

Abstract: A kinetic equation is derived, with account taken of the Pauli principle, on the basis of concepts of the semiclassical description of breakdown which assumes that as a fermion approaches the region of momentum space where the Blount criterion $\gamma \omega / \omega_H / \Delta^2 > 1$, is satisfied, the "particle" is trans-

ferred to a trajectory belonging to another zone with the probability of $P_0 \sim \exp(-H_0/H)$ (H_0 is a constant that does not depend upon the magnetic field H). Such a description is reasonable in the case in which the investigated materials have defects which bring about the "stochastization" of fermion motion. The Pauli principle is introduced into the kinetic equation via a collision term in which, due to the "directionality" of the interzone magnetic transfers, the probability of the transition is $W_{2s}(k \rightarrow k') \neq W_{2s}(k' \rightarrow k)$.

This brings about an essentially new result: with $P_0 = 1$, when the breakdown is

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USSR

SOKOLOV, S. A., *Fizika Tverdogo Tela*, No 9, September 1970, pp 2578-2582

maximal, only partial "overlapping" of the zones is obtained. It is shown that taking the Pauli principle into account brings about an additional redistribution of the particles in the magnetic field from one zone to another. The following result is obtained: for a simple model of "local" breakdown, consideration of the interzonal magnetic transfers may be introduced into the kinetic equation by the imposition of boundary conditions at the points of breakdown. The question of the influence of the magnetic field upon entropy change of the fermion gas is investigated. 1 figure, 9 bibliographic entries.

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85

1/3 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--ASYMMETRICALLY SUBSTITUTED MYO INOSITOL DERIVATIVES. I. SEPARATION OF A RACEMIC MIXTURE OF 1,4,5,6-TETRA-O-BENZYLMYO INOSITOL. COMPLETE
AUTHOR--(05)-KLYASHCHITSKIY, B.A., STRAKHOVA, G.D., SHVETS, V.I., SOKOLOV, S.D., PREOBRAZHENSKIY, N.A.
COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(1), 236-42

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, BROMINATED ORGANIC COMPOUND, ESTER, CHEMICAL SEPERATION, CARBOHYDRATE, ISOMER/(U)AMBERLITE IRA400 MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1737

STEP NO--UR/0079/70/040/001/0236/0242

CIRC ACCESSION NO--AP0112726

UNCLASSIFIED

2/3 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112726

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

TETRA-O-ACETYL-BETA-D-MANNOPYRANOSYL BROMIDE (14 G) KEPT WITH 9.1 ML
 2,6,LUTIDINE IN ETOH 3 HR GAVE AFTER EVAPN. AND AN AQ. TREATMENT
 67.5PERCENT 3,4,6,TRI-O-ACETYL 1,2,0-(ETHYL
 ORTHOACETYL)-BETA-D-MANNOPYRANOSE, M. 102.5-4DEGREES, (ALPHA) PRIME20
 SUBD MINUS 15DEGREES, WHICH (5.95 G) WITH 4.6 G
 1,4,5,6,TETRA-O-BENZYLMYO INOSITOL REFLEXED IN (CH SUB2 CL) SUB2 IN THE
 PRESENCE OF P-MEC SUB4 H SUB4 SO SUB3 H 8.5 HR WITH REMOVAL AND
 REPLENISHMENT OF THE DRIED SOLVENT, GAVE 18.6PERCENT
 3,4,6,TRI-O-ACETYL,1,2,0,(3,4,5,6,TETRA-O-BENZYL-SN
 MYO-INOSITYL,1,ORTHOACETYL)-BETA-D-MANNOPYRANOSE, M. 155.5-6DEGREES,
 (ALPHA) PRIME20 SUBD 9.8DEGREES, PPTD. BY ADDN. OF ET SUB2 O; THE
 FILTRATE PURIFIED ON AL SUB2 O SUB3 GAVE 9.68PERCENT
 3,4,6,TRI-O-ACETYL,1,2,0-(1,4,5,6,TETRA-O-BENZYL-SN MYO-INOSIT,3,YL
 ORTHOACETYL)-BETA-D-MANOPYRANOSE (I), M. 135-7DEGREES, (ALPHA) PRIME20
 SUBD 0.54DEGREES. I IN 1 HR AT 20DEGREES WITH 0.1N H SUB2 SO SUB4 IN
 90PERCENT AQ. ME SUB2 CO GAVE AFTER PASSAGE OVER AMBERLITE IRA-400 (OH
 FORM) 81.2PERCENT 1,4,5,6,TETRA-O-BENZYL-SN-MYO-INOSITOL, M.
 140.2-2.1DEGREES, (ALPHA) PRIME20 SUBD 25DEGREES. SIMILARLY WAS
 OBTAINED 86PERCENT 3,4,5,6,TETRA-O-BENZYL-SN-MYO INDSITOL, M.
 141-3DEGREES, (ALPHA) PRIME20 SUBD MINUS 24.30DEGREES. THIS HEATED 2 HR
 AT 100DEGREES WITH MEI AND POWD. KOH UNDER C SUB6 H SUB6 GAVE 25PERCENT
 L-O-METHYL,3,4,5,6, TETRA-O-BENZYL-SN-MYO-INOSITOL, M. 155-160DEGREES,
 (ALPHA) PRIME20 SUB3 MINUS 1.5DEGREES, WHILE THE MOTHER LIQUOR GAVE
 5.8PERCENT 2,0-METHYL ANALOG, M. 137-8DEGREES, (ALPHA) PRIME20 SUBD

UNCLASSIFIED

3/3 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC-ACCESSION NO--AP0112726

ABSTRACT/EXTRACT--THE L-ISOMER WAS HYDROGENATED OVER PD IN ACOH TO L-D-METHYL-SN-MYO-INSITOL, M. 204-5.5DEGREES, (ALPHA) PRIME20 SUBD MINUS 33.2DEGREES, IDENTICAL WITH ANTURALLY OCCURING (-).BORNESITOL. THUS AN EFFECTIVE SEPN. OF RACEMIC ASYM. SUBSTITUTED MYO-INSITOLS WAS PERFORMED VIA DIASTEREOMERIC ORTHO ESTERS WITH D-MANNOSE.

UNCLASSIFIED

USSR

UDC 621.314.57

SOLOVY, S.D., BEY, YU.M., DOBROVOL'SKIS, T.P., LUPYAN, A.G., FIRSOVA, L.D.,
AYZENSHTEYN, L.S., GURAL'NIK, YA. D.

"System Of Control Of Thyristorized Inverter"

Tr. VNIIE Zh.-d. transp. (Works Of The All-Union Scientific-Research Institute Of
Railroad Transportation), 1970, Issue 420, pp 69-85 (from RZh--Elektronika i veye
primeneniye, No 4, April 1971, Abstract No 4B665)

Translation: The paper describes a system of control of thyristorized converters
[sic] arranged according to the circuit "two reverse stars with an equalizing re-
actor" or according to a 3-phase bridge scheme which assures turn-on of a large
number of series-parallel connected thyristors. In the control circuit, individual
(for each thyristor) output current transformers are used. This assures high
efficiency and makes it possible to obtain identical currents through the thyris-
tor gates with a considerable dispersion of their input characteristics. The cir-
cuit for pulse shaping consists of two 3-loop networks and a discharge thyristor.
The first loop produces a steep initial burst, and the remainder the necessary
duration of the control pulse. The experimental characteristics are considered
of the pulse shapers with various parameters of the current of the output trans-
formers, parameters of the thyristors, and length of the connecting conductors.
A block diagram is presented of the modeling on an analog computer of the system
for control of thyristors. 10 ill. 2 tab. 4 ref. L.R.
1/1

USSR

UDC: 573.953+547.917+547.593.261

44
KLYASHCHITSKIY, B. A., PIMENOVA, V. V., BASHKATOVA, A. I., ZHELVAKOVA, E. G.,
SOKOLOV, S. D., SHVETS, V. I., YEVSTIGIYEVA, R. I., PREOBRAZHENSKIY, N. A.,
Deceased, Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov

"Research in the Area of Derivatives of Asymmetrically Substituted Myoinositol.
V. Complete Synthesis of sn-Myoinositol 1-Phosphate"

Leningrad, Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2482-2489

Abstract: A new method is used for synthesizing 1,2,4,5,6-penta-O-benzylmy-
oinositol. The compound is separated into antipodes through diastereomeric
orthoesters with D-mannose. Complete synthesis of the 1-phosphate of sn-myoin-
ositol identical to the natural compound is carried out on the basis of 2,3,4-
5,6-penta-O-benzyl-sn-myoinositol.

1/1

USSR

UDC: 681.333:621.391

KULAKOV, S. V., RAZZHIVIN, B. P., TIGIN, D. V., SOKOLOV, S. I.

"An Optico-acoustic Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsey, Tovarnyye Znaki, No 15, Apr 73, Author's Certificate No 374633, Division G, filed 18 Jun 71, published 14 Jul 73, p 112

Translation: This Author's Certificate introduces an optico-acoustic device which contains a delay circuit and electronic amplifiers, and installed on the optical axis: a light source, condenser, collimator, first ultrasonic light modulator, input lens, slit screen, shaping lens, second ultrasonic light modulator, output lens, and photoamplification module. As a distinguishing feature of the patent, the frequency band of signals which can be handled is extended, and the operating efficiency of the device is improved by adding a dispersion quadripole with linear dispersion characteristic and a pulse generator with linear frequency modulation. The inputs of the quadripole and pulse generator are connected to the input of the device, and the output of the dispersion quadripole is connected through the corresponding amplifier to the input of the second ultrasonic light modulator,

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USSR

KULAKOV, S. V. et al., USSR Author's Certificate No 374633

while the output of the pulse generator is connected through the series connected delay circuit and other amplifier to the input of the first ultrasonic light modulator.

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- 10 -

1/2 032 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ELASTIC OPTICALLY SENSITIVE MATERIAL -U-
AUTHOR--(03)-SOKOLOV, S.I., RISKINA, M.A., KUZMINSKIY, A.S.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 253,422
REFERENCE--UTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(8)
DATE PUBLISHED--10FEB70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--ELASTICITY, POLYBUTADIENE, VULCANIZATION, OPTIC PROPERTY,
CHEMICAL PATENT, SYNTHETIC RUBBER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/1158 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0116623
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0116623

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO INCREASE THE TRANSPARENCY AND OPTICAL SENSITIVITY WITH COEFF. OF ELASTICITY SMALLER THAN OR EQUAL TO 18 KG-CM PRIME2, STEREOREGULAR POLYBUTADIENE RUBBER OR CIS,TRANS,POLYBUTADIENE RUBBER IS VULCANIZED IN A PRESS AND ROLLED 3-5 MIN TO A GIVEN THICKNESS AT A HEATING RATE OF 5DEGREES-MIN. THE RUBBER IS HELD 20-50 MIN AT 220-40DEGREES AND COLLED AT 5DEGREES-MIN. FACILITY: MOSCOW INSTITUTE OF CHEMICAL ENGINEERING.

UNCLASSIFIED

1/2 035

TITLE--OPTICAL SENSITIVITY AND POLARIZABILITY ANISOTROPY OF CROSSLINKED POLYSILOXANES -U- UNCLASSIFIED PROCESSING DATE--30OCT70

AUTHOR--(04)--RISKINA, M.A., SOKOLOV, S.I., VARAKSIN, M.E., KURLOVA, T.V.

COUNTRY OF INFO--USSR

SOURCE--VYSOKHIM. SOEDIN., SER. A 1970, 12(4), 890-4

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYSILOXANE, BENZENE DERIVATIVE, NITRILE, FLUORINATED ORGANIC COMPOUND, ELASTOMER, ANISOTROPY, OPTIC PROPERTY, POLYMER CROSSLINKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/0681

STEP NO--UR/0459/70/012/004/0890/0894

CIRC ACCESSION NO--AP0124353

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124353
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE APPLICATION OF TENSION CHANGES THE BIREFRINGENCE OF POLY(METHYLVINYLSILOXANE), POLY(METHYLVINYLPHENYLSILOXANE), POLY(METHYL(GAMMA CYANOPROPYL)SILOXANE), AND POLY(METHYL(TRIFLUOROPROPYL)SILOXANE). THE INCREASE OF THE ELASTOMERS' CROSSLINKING HAS NO EFFECT ON THEIR OPTICAL SENSITIVITY (C SUB0) AND THE SEGMENTAL ANISOTROPY (DELTA ALPHA). THE REPLACEMENT OF ME WITH PH OR F SUB3 CCH SUB2 CH SUB2 GROUPS CHANGES DELTA ALPHA FROM NEGATIVE 16.5 TIMES 10 PRIME NEGATIVE 25 TO NEGATIVE 17.4 TIMES 10 PRIME NEGATIVE 25, OR NEGATIVE 2.4 TIMES 10 PRIME NEGATIVE 25, RESP. THE TEMP. INCREASE EITHER INCREASES OR HAS NO EFFECT ON C SUB0 DEPENDING ON THE CONFIGURATIONAL CHANGES OF THE ELASTOMER HELIXES AND THE SIDE GROUPS. FACILITY: MOSK. INST. KHIM. MASHINOSTR., MOSCOW, USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--02 OCT 70
 TITLE--OPTICAL PROPERTIES OF POLYBUTADIENE ELASTOMERS -U-
 AUTHOR--(03)-RISKINA, M.A., SOKOLOV, S.I., KUZMINSKIY, A.S.
 COUNTRY OF INFO--USSR
 SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(1) 119
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATERIALS
 TOPIC TAGS--OPTIC PROPERTY, POLYBUTADIENE, ELASTOMER, VULCANIZATE,
 BUTADIENE RUBBER/(UISKB BUTADIENE RUBBER
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1992/1414 STEP NO--UR/0063/70/015/001/0119/0113
 CIRC ACCESSION NO--A0112408
 UNCLASSIFIED

272 026

UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--AP0112408

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMAL VULCANIZATES OF
CIS, TRANS-POLYBUTADIENE (I) RUBBER (CONTG. 90-2.5 PERCENT DOUBLE BONDS
IN THE MAIN CHAIN) AND NA-BUTADIENE RUBBER SKB (CONTG. DOUBLE BONDS
MAINLY IN THE SIDE CHAIN) WERE STUDIED BY A COMPENSATION METHOD IN A
SYNCHRONIZED POLARIMETER AT 25-200 DEGREES. I VULCANIZATES EXHIBITED
HIGH POS. OPTICAL SENSITIVITY, THE OPTICAL SENSITIVITY COEFFS. BEING
3500-800 CM PRIME²-KG. PREDOMINANT DISTRIBUTION OF DOUBLE BONDS IN THE
MAIN CHAIN CAUSED INCREASED OPTICAL SENSITIVITY.

UNCLASSIFIED

USSR

UDC 681.3.001:518.5

SOKOLOV, S.N., BELYAYEVSKAYA, L.V., KALINCHENKO, P.A., et al.

"Fortran and Monitor System"

Moscow, Statistika Press, 1970, 144 pp, ill., 65 kop. (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 2, Feb 71, Abstract No 2B70K)

Translation: This is a handbook of practical utilization of the programming automation system developed at the Institute of High Energy Physics for the Minsk-22 Computer using Fortran as the input language. The book comprises two parts and an appendix. The first part of the book contains a description of the input language constructed on the basis of the CDC Fortran language descriptions for the CDC-1604 and CDC-6600 and TsERN Fortran. The second part of the book is devoted to the monitor system and is actually a description of a language permitting programmers and operators to communicate quite conveniently with the computer via the monitor system. In the several years of development of this language, it has approached a degree of universality permitting its use almost without changes on other computers (M-220, BESM-4, Minsk-32, and so on).

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Acc. Nr: AP0047344

Ref. Code: UR0589

PRIMARY SOURCE: S Vestnik Khirurgii imeni I. I. Grekova, 1970,
Vol 104, Nr 1, pp 1420

A CLASSIFICATION OF CHRONIC PNEUMONIA

By F. G. Uglov, S. N. Sokolov and Ya. K. Seleznev

The elaboration of the most rational classification of chronic pneumonia is an essential task of the science of pneumology. Therefore, principal efforts of the authors were directed toward the selection of a better approach to treatment of various forms of chronic pneumonia both by conservative and surgical methods, new conceptions of etiology and pathogenesis being taken into consideration. The pulmonary lesion usually starts from impairment of the drainage function in B_{4,5} that results from constriction of the bronchus by enlarged and consolidated perihilar lymph nodes. The classification is based on stage development of chronic inflammatory process. The first stage involves the affection of B_{4,5} and partly B₇, the second — B_{4,5,7,8} (or all basal segments), the third stage — also B₆, and the fourth stage includes the cases when the affection involves the upper lobe. The classification considers only the acquired pulmonary lesions.

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1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ELECTROCHEMICAL FLUORINATION OF DIMETHYLANILINE,
DIMETHYLCYCLOHEXYLAMINE, AND N,N-DIMETHYLPENTAFLUOROANILINE -U-
AUTHOR--(05)-PLASHKIN, V.S., PUSHKINA, L.N., MERTSALOV, S.L., KOLLEGOV,
V.F., SOKOLOV, S.V.
COUNTRY OF INFO--USSR

S
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1006-11

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FLUORINATION, ANILINE, AROMATIC AMINE, NUCLEAR MAGNETIC
RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1345

STEP NO--UR/0366/70/006/005/1006/1011

CIRC ACCESSION NO--AP0135019

UNCLASSIFIED

2/2 014

CIRC ACCESSION NO--AP0135019

UNCLASSIFIED

PROCESSING DATE--13NOV70

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

ABSTRACT. THE ELECTROCHEM. FLUORINATION OF THE TITLE COMPOS. AT MINUS 20DEGREES GAVE IN ALL CASES CF SUB3 (CF SUB2) SUB5 N(CF SUB3) SUB2 AND N,N,DIMETHYLPERFLUOROCYCLOHEXYLAMINE. THE YIELDS AND RELATIVE AMTS. OF THESE COMPOS. VARY WITH THE STARTING MATERIAL AND THE REACTION TIME. NMR SPECTRA OF THE PRODUCTS ARE DISCUSSED.

FACILITY: URAL. POLITEKH. INST. IM. KIROVA, SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--ANODIC OXIDATION OF POLYFLUOROALKOXY ACIDS --U--
AUTHOR--(03)--CHECHINA, O.N., LEVIN, A.I., SOKOLOV, S.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(1), 120

DATE PUBLISHED--70

S

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYTIC OXIDATION, FLUORINATED ORGANIC COMPOUND,
ALKOXIDE, ORGANIC ACID, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1632

STEP NO--UR/0063/70/015/001/0120/0120

CIRC ACCESSION NO--AP0125254

UNCLASSIFIED

2/2 030

CIRC ACCESSION NO--AP0125254
ABSTRACT/EXTRACT--(U) GP-G-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. ELECTROLYSIS OF 20 ML OF 1.5M
SOLN. OF H(CF SUB2 CF SUB2) SUB2 CH SUB2 OCH SUB2CH SUB2 CO SUB2 H IN
3:1 MEQH PYRIDINE AT ANODIC C.D. 10 A-DM PRIME2 AND 30-5DEGREES WITH PT
ANODE FOR 1.5 HR WITH A P.D. OF 43-80 V GAVE ON DILN. 30PERCENT (H(CF
SUB2 CF CUB2) SUB2 CH SUB2 OCH SUB2 CH SUB2) SUB2, B SUB10 135-6DEGREES,
N PRIME24 SUBD 1.3467. THE IR SPECTRUM FAILED TO SHOW ANY HO OR C TIMES
C BANDS.
FACILITY: URAL. POLITEKH. INST. IM. KIROVA,
SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

SOKOLOV, V. A.

UDC 577.4

"Notes on the Class of Partial Functions of Denumerable-Valued Logic"

V sb. Diskretn. analiz (Digital Analysis -- collection of works), Vyp. 19, Novosibirsk, 1971, pp 56-62 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V396)

Translation: Let P be a class of all partial functions of denumerable-valued logic. The author presents structures permitting the construction of precomplete classes in P using the precomplete classes of denumerable-valued logic. As a result, it is found that the power of the set of precomplete classes in P is equal to a hypercontinuum.

1/1

USSR

UDC 543.42 + 541.515 + 535.37

VOL: KENSHTEYN, F. F., SOKOLOV, V. A., Institute of Physical Chemistry, Moscow, Academy of Sciences USSR

"Theory of Radical-Recombination Luminescence in Semiconductors. I. Spectral Structure of Radical-Recombination Luminescence"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 70, pp 1247-1252

Abstract: Radical-recombination luminescence (RRL) is a relatively new field of investigation and in this paper an attempt is made to develop quantitative theory for it. The RRL spectrum consists of two bands, as a rule, one -- the "basic" -- is also observed in photo luminescence, while the other -- the "supplementary" -- appears only in RRL. According to the proposed mechanism, the act of a recombination of free atoms or radicals on the surface results in an appearance of a pair of free electron-free hole. If the recombination of the electron and the hole accompanied by release of a quantum goes through, a level of an activator, the "basic" band appears. If this recombination takes place through the local level of the chemisorbed atom itself (the radical),

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USSR

VOLKENSHTEYN, F. F., et al, Izvestiya Akademii Nauk SSSR, Seriya
Khimicheskaya, No 6, Jun 70, pp 1247-1252

the "supplementary" band appears. The experimental data, i.e. dependence of the "basic" band on the nature of the activator and independence of the nature of gas, and conversely dependence of the "supplementary" band on the nature of the surrounding medium and independence of the activator, fit this model well.

2/2

UNCLASSIFIED
 TITLE--A POSSIBLE MEANS OF MEASURING THE TEMPERATURE OF THE NEUTRAL
 COMPONENT OF THE UPPER ATMOSPHERE ABOVE 150 KM --U-
 AUTHOR--(02)--BELOTSEKOVSKI, M.B., SOKOLOV, V.A. PROCESSING DATE--04DEC70

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKIE ISSLEDOVANIYA, VOL. 8, MAY-JUNE 1970, P. 470-473
 DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--UPPER ATMOSPHERE, TEMPERATURE, CHARGED PARTICLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605013/C07 STEP NO--UR/0293/70/003/000/0470/0473
 CIRC ACCESSION NO--AP0140376

UNCLASSIFIED

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CIRC ACCESSION NO--AP0140376
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. DISCUSSION OF THE POSSIBILITY OF DETERMINING THE TEMPERATURE OF THE NEUTRAL COMPONENT OF THE UPPER ATMOSPHERE FROM THE THERMAL SPREAD OF A BEAM OF CHARGED PARTICLES SINGLED OUT OF THE ATMOSPHERE BY A DIAPHRAGM IN A PLATFORM MOVING AT A VELOCITY MUCH HIGHER THAN THE PROBABLE PARTICLE VELOCITY, AND LOCATED NORMAL TO THE VELOCITY VECTOR. A QUANTITATIVE OUTLINE OF THE CAPABILITIES OF THIS METHOD IS PRESENTED, AND THE ERROR INVOLVED IN ITS APPLICATION IS ASSESSED. MEANS OF REALIZING THE METHOD IN PRACTICE ARE EXAMINED.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--SPECIFIC HEAT OF TETRAAMMINEPALLADIUM CHLORIDE AND ITS HYDRATE -U-
AUTHOR--(02)--SCKCLOV, V.A., SHARPATAYA, G.A.

S

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 603-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HEAT CAPACITY, PALLADIUM COMPOUND, COMPLEX COMPOUND, VIBRATION
FREQUENCY, AMMONIA, MONOMER, DIMERIZATION

CONTRL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1634

STEP NO--UR/0076/70/044/003/0603/0608

CIRC ACCESSION NO--AP0125256

UNCLASSIFIED

2/2 023

CIRC ACCESSION NO--AP0125256

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DETN. OF THE HEAT CAPACITY OF
 (PD(NH SUB3) SUB4)CL SUB2 AT 100-300DEGREESK IS PRESENTED. FREQUENCIES
 OF SKELETAL VIBRATIONS OF THE COMPLEX ION HAVE BEEN CALCD. THE
 POTENTIAL BARRIER OF THE HINDERED VIBRATION OF NH SUB3 GROUP OF THE
 COMPLEX ION AROUND THE TRIGONAL AXIS IS ESTD. (1000 CAL-MOLE).
 CONTRIBUTION TO THE SP. HEAT OF THE (PD(NH SUB3) SUB4)CL SUB2 HYDRATE
 OWING TO THE MOTION OF H SUB2 O MOLS. IN THE STRUCTURAL CHANNELS HAS
 BEEN ESTD. IT IS CONCLUDED THAT MOLS. OF ZEOLITIC WATER CAN ENTER INTO
 THE LATTICE IN THE FORM OF MONMERS AND DIMERS. FACILITY: INST.
 ODSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 661.143.004.14

SOKOLOV, V. A., STYROV, V. V., NASLEDNIKOV, YU. M., KHORUZHIY, V. D.,
LUBYANSKIY, G. A., and URUSOV, B. G.

"On the Feasibility of Employing Radical Recombination Luminescence in the
Physicochemical Control of Phosphor Crystals"

Sb. nauch. tr. VNIИ lyuminoforov i osobo chist. veshchestv (Collection of
Scientific Works of All-Union Scientific Research Institute for Phosphors and
Ultrapure Substances), 1971, vyp. 6, pp 88-94 (English summary) (from RZh-
Khimiya, No 16, 25 Aug 72, Abstract No 16L135 from summary)

Translation: The article suggests a new method of physicochemical control of
the synthesis conditions and the quality of phosphor crystals, based on the
use of the phenomenon of radical recombination luminescence (RRL). RRL with
high sensitivity detects small concentrations of impurities in a phosphor,
polymorphic transformations, decay of solid solutions, etc. Some examples are
examined.

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Inorganic Compounds

USSR

UDC 541.11

PRUSAKOV, V. N., ~~SOKOLOV, V. B.~~, and CHAYVANOV, E. B.

"Reaction of Xenon Difluoride with Halogen Pentafluorides"

Moscow, Zhurnal Fizicheskoy Khimii, Vol XLV, No 5, 1971, pp 1102-1105

Abstract: The method of differential thermal analysis was used to study the binary systems $\text{XeF}_2\text{-ClF}_5$ and $\text{XeF}_2\text{-BrF}_5$. The experimental technique and the synthesis of XeF_2 and ClF_5 are described. The phase diagram of the $\text{XeF}_2\text{-ClF}_5$ system shows that these components do not react or dissolve in each other and in pure chlorine pentafluoride, a phase transition is observed in the solid state at -134°C . The phase diagram of the $\text{XeF}_2\text{-BrF}_5$ system shows that a congruently melting compound with the composition $\text{XeF}_2\cdot 2\text{BrF}_5$ (dystectic point at 23°C) and one incongruently melting compound with the composition $\text{XeF}_2\cdot 9\text{BrF}_5$ (peritectic point at -37°C) are formed in the system. The phase separation and solution mechanisms are described. The maximum solubility of Xenon difluoride in bromine pentafluoride does not exceed 11.2 moles per 1,000 grams of pentafluoride.

Binary systems of $\text{XeF}_2\text{-IF}_2$, $\text{XeF}_2\text{-BrF}_2$ and $\text{XeF}_2\text{-ClF}_5$ were also studied and the mechanism of formation and dissociation of the compounds $\text{XeF}_2\cdot\text{IF}_5$ and $\text{XeF}_2\cdot 2\text{BrF}_5$ is discussed briefly.

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USSR

UDC: 621.378.345.4

VOLOSOV, V. D., DUKHOVNYI, A. M., KRYLOV, V. N., SOKOLOVA, T. V.
"On Converting Radiation From a Laser in the Free Emission Mode
to the Second Harmonic"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972,
pp 101-102

Abstract: An investigation was made into the energy dependence
of the coefficient of conversion of radiation from a neodymium
laser operating in the free emission mode to the second harmonic.
When beam divergence is 20" and energy density is 75 J/cm², a co-
efficient of conversion of 0.105% is obtained. The destruction
threshold for a KDP crystal was 1100 J/cm². Three illustrations,
bibliography of two titles.

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