

172 029

UNCLASSIFIED

PROCESSING DATE--ZUNUV70

TITLE--APPARATUS FOR STUDYING THE THERMAL AND MECHANICAL PROPERTIES OF  
POLYMER FILMS -U-

AUTHOR--(04)-BORISOV, D.G., OBUKHOVICH, V.A., FADEYEVA, A.V., SHCHERBAK,  
P.N.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(5), 615-17

F

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT

TOPIC TAGS--PLASTIC FILM, MATERIAL TESTING EQUIPMENT,  
POLYTETRAFLUOROETHYLENE, THERMAL EFFECT, ANNEALING, PLASTIC MECHANICAL  
PROPERTY/(U)PTOROPLAST 4M FLUORINE PLASTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1970

STEP NO--UR/0032/70/030/005/0615/0617

CIRC ACCESSION NO--AP0132231

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132231

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SAMPLE FILMS WERE HELD HORIZONTALLY BY A FORCE JUST ADEQUATE TO PREVENT SAGGING DUE TO GRAVITY. DURING HEATING THE HORIZONTAL POSITION WAS MAINTAINED BY THE DISPLACEMENT OF THE HOLDING CLAMPS. THE TEMP. VS. DEFORMATION (EPSILON) CURVES WERE OBTAINED FOR POLY(TETRAFLUOROETHYLENE) (FTHOROPLAST 4M) FILMS ANNEALED AT VARIOUS TEMPS. THE FILMS ANNEALED AT 255DEGREES OR 280DEGREES HAD POS. EPSILON, AS WELL AS NEG. EPSILON (SHRINKAGE). THE FILMS ANNEALED AT 265DEGREES HAD ONLY POS EPSILON. FACILITY: NAUCH.-ISSLED. PROEKT. INST. POLIM. PLASTMASS, LENINGRAD, USSR.

UNCLASSIFIED

FADYEVA E.I.

Acc. Nr:

AP0047607

Abstracting Service:  
CHEMICAL ABST. 5/70

Ref. Code:

UR0057 3

105059r Breakdown of dielectric reflecting coatings under the influence of laser radiation. Kuznetsov, A. Ya.; Poplavskii, A. A.; Bonch-Bruевич, A. M.; Imaš, Ya. A.; Rozhdenskiĭ, Y. N.; Tikhomirov, G. P.; Fadıeva, E. I. (USSR). *Zh. Tekh. Fiz.* 1970, 40(1), 170-2 (Russ). The threshold of breakdown of coatings was measured as a function of the direction of the effect, the no. of coating layers, the temp. of the base during the application, the purity and structure of the starting materials, the degree of orientation of microcrystals in the layer, the presence of defects, and the structure of the layer. The breakdown threshold of vacuum dielec. coatings on K-8 glass depended on the degree of orientation and the structure of crystals in the ZnS layer, and on the compn. of the surface of the coatings.  
M. Tichy

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REEL/FRAME  
19791173

4/12

USSR

UDC 547.944/945

FADEYEVA, I. I., PEREL'SON, M. YE., TOLKACHEV, O. N., IL'INSKAYA, T. N.,  
and FESENKO, D. A., All Union Scientific Research Institute of Medicinal  
Plants

"Stephania Hernandifolia Alkaloids. IX. 3-O-Dimethylhernandifolin"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1972, pp 130-132

Abstract: A compound was isolated from the methanol fraction of the chroma-  
tographic separation on an alumina column of a mixture of alkaloids obtained  
from *Stephania Hernandifolia* grass. This compound had mp 148-149° and in  
contrast to hernandifolin, hernandine and methylhernandine showed a color  
reaction characteristic of o-diphenols. On the basis of IR and NMR spectro-  
scopic data, it was assigned the structure of 3-O-dimethylhernandifolin.

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USSR

UDC 547.944/945

IL'INSKAYA, T. N., PEREL'SON, M. YE., FADEYEVA, I. I., FESENKO, D. A., and  
TOLKACHEV, O. N., All Union Scientific Research Institute of Medicinal  
Plants

"Stephania Delovayi Alkaloids. II. 16-Ketodelavaine"

Tashkent, Khimiya Prirodnikh Soedineniy, No 1, 1972, pp 129-130

Abstract: A new alkaloid was isolated from the *Stephania Delovayi* Diels  
(Menispermaceae) grass, with mp 221-222°,  $[\alpha]_D^{25} -180^\circ$ . This compound  
showed a positive reaction for the dioxymethylene group. On the basis of  
UV, IR, and NMR spectroscopic analysis, this compound was claimed to be  
16-ketodelavaine.

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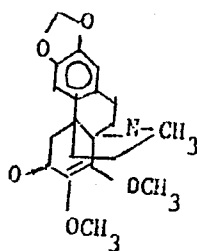
UDC 547.944/945

FADEYEVA, I. I., IL'INSKAYA, T. N., PEREL'SON, M. Ye., KUZOVKOV, A. D., All-Union Scientific Research Institute of Medicinal Plants

"Structure of Delavaine, an Alkaloid from *Stephania Delovayi*"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 6, 1971, pp 784-790

Abstract: Nuclear magnetic resonance spectra data are presented for delavaine and its derivatives. These spectra and the data of far spin-spin interaction in delavaine confirm the following structure for delavaine:



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FADEYEVA, I. I., et al., Khimiya Prirodnikh Soyedineniy, No 6, 1971, pp 784-790

A conversion diagram, experimental procedures, yields and some physical and chemical characteristics are presented for delavaine, D-delavaine, delavaine methiodide, the des-base of delavaine, acetoxymethylenedioxyphenanthrene, dimethoxymethylenedioxyphenanthrene, dimethylenedelavaine, and diacetyl-demethylenedelavaine.

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UDC 547.944/945

~~FADEVAYA, I. I.~~, FESENKO, D. A., IL'INSKAYA, T. N., PEREL'SON, M. YE., and  
TOLKACHEV, O. N., All- Union Scientific-Research Institute of Medicinal Plants

"Alkaloids of *Stephania hernandifolia*. VIII. Methylhernanine"

Tashkent, Khimiya Prirodnykh Soyedineniye, No 4, 1971, pp 455-456

Abstract: This a is a continuation of research begun on alkaloids extracted from the above-ground portion of *Stephania hernandifolia*.

From the hydrochloride, which is weakly soluble in alcohol, a new alkaloid was extracted with formula  $C_{20}H_{27}O_6N$  and melting point  $152-153^{\circ}C$  (ethanol-ether), which was named methylhernandine. The infrared and magnetic resonance spectra of this substance were obtained.

The alkaloid was finally identified with N-methylamine alcohol, which is obtained in the hydrolysis of hernandifoline.

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UDC 547.92

IL'INSKAYA, T. N., FESENKO, D. A., FADEYEVA, I. I., PEREL'SON, M. Ye., and  
TOLKACHEV, O.N., All-Union Scientific Research Institute of Medicinal Sub-  
stances

"Stephania Hernandifolia Alkaloids. VII. Hernandin"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 2, 1971, pp 180-184

Abstract: The chloroform mother liquors of the *Stephania hernandifolia* extracts left after the removal of hernandifolin was evaporated in vacuum. The tarry residue was treated repeatedly with 10% HCl solution, the combined acid extracts were thoroughly reextracted with chloroform, washed with 10% ammonia solution and water, dried and evaporated. The residue was crystallized from ethanol to yield harnandin, m.p. 197-199°,  $[\alpha]_D^{20} = -33^\circ$ . IR, NMR, and mass spectra were studied in an attempt to discover the structure of this product.

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UDC 547.92

FESENKO, D. A., FADEYEVA, I. L., II'INSKAYA, T. N., PEREL'SON, M. Ye., and  
TOLKACHEV, O. N., All Union Scientific Research Institute of Medicinal  
Plants

"Stephania Hernandifolia Alkaloids. VI. Hernandifolin"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 2, 1971, pp 158-164

Abstract: 10 kg of dry *Stephania hernandifolia* grass was immersed in 10% ammonia, and after decantation extracted with dichloroethane. The extract was treated with 10% sulfuric acid, neutralized with ammonia and extracted with ether, made alkaline (pH 9), and reextracted with chloroform. The extract was dried, concentrated and chromatographed on an alumina column. A mixture of three alkaloids was obtained from the chloroform eluate, and after a triple recrystallization from chloroform 1.2 g of hernandifolin (I) was obtained in the form of an addition product with chloroform, m.p. 227-227.5°; treatment of this material with ether followed by ammonia gave free (I), m.p. 128-229°,  $[\alpha]_D = -25^\circ$ . Reacting (I) with acetic anhydride in pyridine, followed by chromatography over alumina produced diacetylnernandifolin, m.p. 171-171.5° eluted with methanol. N-Methylhernandifolin was obtained by reacting (I) with methyl iodide. Hydrolysis of (I) in  
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FESENKO, D. A., et al., Khimiya Prirodnykh. Soyedineniy, No 2, 1971, pp 158-164

alcoholic NaOH followed by treatment with sulfuric acid and finally with ammonia gave hesperitic acid, m.p. 228-229°. The structure assignment was based on the analysis of NMR, IR and mass spectral data.

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1/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--STRUCTURE OF THE ALKALOID DELAVAIN U  
AUTHOR--(04)-FADEYEVA, I.I., ILINSKAYA, T.N., PERELSON, M.YE., KUZOVKOV,  
A.D. F  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. PRIR. SOEDIN. 1970, 6(1), 140-1  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PROCESSED PLANT PRODUCT, ALKALOID, NUCLEAR MAGNETIC RESONANCE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3005/0465 STEP NO--UR/0393/70/006/001/0140/0141  
CIRC ACCESSION NO--AP0132680  
UNCLASSIFIED

2/2 010

CIRC ACCESSION NO--AP0132680  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

(ETOH), (ALPHA) SUBD MINUS 240DEGREES, HCL SALT M. 203-3.5DEGREES  
(ETOH); METHIOIDE M. 190-2DEGREES, WAS ISOLATED FROM GRASS OF STEPHANIA  
DELAVAYI. TWO POSSIBLE STRUCTURES, I ((R PRIME1 R PRIME2 EQUALS) CH  
SUB2, R PRIME3 EQUALS ME) AND I ((R PRIME1 EQUALS ME, (R PRIME2 R PRIME3  
EQUALS )CH SUB2) WERE USGGESTED ON THE BASIS OF NMR SPECTROSCOPY,  
FUNCTIONAL GROUPS ANAL., AND HOFMANN DEGRADATION. FACILITY:  
VSES. NAUCH.-ISSLED. INST. LEK. RAST., BITTSA, USSR.

UNCLASSIFIED

USSR

UDC 615.281.8:547.678.3

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YERMOL'YEVA, Z. V., Academician of the Academy of Medical Sciences USSR, KORNEYEVA, L. Ye., BALEZINA, G. I., NIKOLAYEVA, O. D., GVAZAVA, I. S., and FADEYEVA, L. L., Institute of Virology imeni D. I. Ivanovskiy of the Academy of Medical Sciences USSR and the Chemical Therapy Group of Academician of the USSR Academy of Medical Sciences Z. V. Yermol'yeva

"Tyleron as an Interferon Inductor"

Moscow, Antibiotiki, Vol 18, No 6, Jun 73, pp 517-520

Abstract: In the current investigation the harmlessness, interferonogenic activity, and protective action (against infectious viral diseases) of tyleron hydrochloride were tested by administering the drug to white mice hypodermically and orally and to monkeys orally. It was established that there is no toxic effect from various dosages of tyleron hydrochloride with either method of introduction. A marked interferonogenic action was obtained where tyleron hydrochloride was given to mice in dosages of 5, 10, and 20 mg/kg and where 25 mg/kg were administered to monkeys. Oral administration proved more beneficial, while no difference was found between a dosage given in one part daily and given in three equal parts daily. Combining tyleron and prodigiozan made it possible to cut the dosage of 1/2

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YERMOL'YEVA, Z. V., et al., Antibiotiki, Vol 18, No 6, Jun 73, pp 517-520

tyleron in half and increased the titer and length of interferon circulation in the blood by 50%. Tyleron was found to have a marked protective effect for influenza pneumonia in mice, despite low titers of circulating interferon. On the basis of this investigation, tyleron hydrochloride may be recommended as an effective interferon inductor.

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USSR

UDC 576.858.095.38.095.18:[615.373.6:457.962

KUL'BERG, A. Ya., PRIYAYAGI, L. S., BARTOVA, L. M., SHMELEVA, N. Ye., and FADEYEVA, L. L., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Tallin Institute of Epidemiology, Microbiology, and Hygiene, Ministry of Health, Estonian SSR, and Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Study of the Interferon-Inducing Activity of Gamma Globulin and Its Fab<sup>7</sup> Fragment"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 11, 1972, pp 63-66

Abstract: Human gamma globulin in aggregated form is capable of inducing interferon in mice. Its interferonogenic activity is higher than that of the fraction free of aggregates or that of the original gamma globulin. The difference is even more pronounced when it is heated to 63°C. The aggregate-free fraction has virtually no interferonogenic activity, whereas that of the aggregated fraction fraction is 3 to 4 orders higher than that of crude gamma globulin. To evaluate the species specificity of the proteins, the interferonogenic activity of highly purified preparations of lapine and bovine gamma globulins was investigated in experiments on rabbits. Both induced interferon but heterologous gamma globulin was more active than homologous globulin. The Fab<sup>7</sup> fragment of gamma globulin, which constitutes only one-third of the molecule, 1/2



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KUL'BERG, A. YA., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 11,  
1972, pp 63-66

induced as much interferon as the unsplit molecule. The authors conclude that the interferon-inducing activity is caused by the gamma globulin proper and not by any admixtures that it may contain such as viruses or polysaccharides.

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1/2 019  
UNCLASSIFIED  
PROCESSING DATE--30OCT70  
TITLE--CHRONIC INFECTION OF CONTINUOUS CELL CULTURES, RES, CAUSED BY CHETA  
ARBOVIRUS -U-  
AUTHOR-(03)-GAVRILOV, V.I., LEONTYEVA, N.A., FADEYEVA, L.L.  
COUNTRY OF INFO--USSR  
SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 3, PP 270-274  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--ARBOVIRUS; CONTINUOUS CULTURE; INTERFERON; TISSUE CULTURE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/1850  
STEP NO--UR/0402/70/000/003/0270/0274  
CIRC ACCESSION NO--AP0125461  
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125461

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CHRONIC INFECTION OF CONTINUOUS PIG EMBRYO KIDNEY CELL CULTURE CAUSED BY GHETA ARBOVIRUS (AMM 2021 STRAIN) WAS REPRODUCED. DURING THE OBSERVATION PERIOD (302 DAYS) A TYPICAL FEATURE OF EVOLUTION OF THESE CULTURES CONSISTED IN SUCCESSIVE ALTERNATION OF PHASES OF DEGENERATION AND REPOPULATION OF THE CELL MONOLAYER. THE PER CENT OF INFECTED CELLS IN THE REPOPULATION PHASE ESTABLISHED BY THE METHOD OF INFECTIOUS CENTERS WAS 5-7. THE PROLIFERATIVE ACTIVITY OF RES-GHETA CULTURES WAS ABOUT 3 FOLD LOWER THAN THAT OF NORMAL RES CULTURES. THE PERSISTENT INFECTION OF RES-GHETA CULTURES WAS UNDERBID BY INTERFERON PRODUCTION BY THE CELLS. THE RES-GHETA CELL CULTURES WERE RESISTENT TO SUPERINFECTION WITH HOMOLOGOUS VIRUS. AN ATTEMPT OF "TREATMENT" OF RES-GHETA CULTURES BY ADDITION OF HYPERIMMUNE SPECIFIC SERUM TO THE CULTURE MEDIUM WAS UNSUCCESSFUL.

FACILITY: INSTITUT VIRUSOLOGII IMENI D. I. IVANOVSKOGO AMN SSSR, MOSKVA.

UNCLASSIFIED

1/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--INVESTIGATION OF INTERFERON INDUCTION IN ANIMALS BY MEANS OF  
DIFFERENT STIMULATORS -U-

AUTHOR--(05)--OGANESYAN, R.KH., FADEYEVA, L.L., TIKHONENKO, T.I.,  
NIKOLSKAYA, I.I., PARFANOVICH, M.I.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIROLOGII, 1970, NR 3, PP 287-291

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INTERFERON, MEASLES, GAMMA GLOBULIN, HEPATITIS, MOUSE, RNA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/1853

STEP NO--UR/0402/70/000/003/0287/0291

CIRC ACCESSION NO--AP0125464

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125464

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS THE RESULTS OF TESTS OF DIFFERENT PREPARATIONS AS INTERFERON STIMULATORS IN MICE. SYNTHETIC DOUBLE STRANDED COMPLEX OF POLYADENYLIC AND POLYURIDILIC ACIDS (POLY-AU), DOUBLE STRANDED REPLICATIVE FORM OF RNA OF MEASLES VIRUS, GAMMA GLOBULINS OF HUMAN AND HORSE ORIGIN WERE FOUND TO BE ACTIVE INDUCERS ON INTERFERON IN MICE. THE PREPARATIONS UNDER STUDY WERE NOT TOXIC FOR THE ANIMALS. THESE INTERFERON INDUCERS SHOWED ANTIVIRAL ACTIVITY IN MICE AGAINST VIRUS OF MURINE HEPATITIS PROVIDED THE PREPARATION WAS INOCULATED BEFORE THE INFECTION. FACILITY: INSTITUT VIRUSOLOGII IMENI D. I. IVANOVSKOGO AMN SSSR, MOSKVA.

UNCLASSIFIED

USSR

UDC 576.858.25.095.6.095.18

LEONT'YEVA, N. A., GAVRILOV, V. I., FADEYEVA, L. L., and GALEGOV, G. A., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Stimulation of Gbeta and O'nyong nyong Virus Reproduction by L-Glutamine and Low Concentrations of 5-Bromo-w-Desoxyuridine"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 70, pp 452-456

Abstract: Cultures of BHK-21 cells were grown on Eagle's medium with 10% calf serum and then inoculated with Gbeta or O'nyong nyong virus. Addition to the medium of L-glutamine (500 micro g/ml) or 5-bromo-2-desoxyuridine (20 to 40 micro g/ml) markedly intensified viral reproduction. Despite the different chemical nature of the two substances, their effects were similar and directly related to the time at which they were added. The effect was most pronounced when they were added 2 hours after inoculation of the cultures. The amino acid provided greater stimulation. In the presence of L-glutamine and under optimal conditions, accumulation of Gbeta virus was 2500 times higher and that of O'nyong nyong virus 5200 times higher than in the control. For 5-bromo-2-desoxyuridine under optimal conditions, reproduction of Gbeta and O'nyong nyong viruses was only 250 and 80 times higher, respectively.

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USSR

UDC 576.858.25.085.35

GAVRILOV, V. I., LEONT'YEVA, N. A., and FADEYEVA, L. L., Institute of Virology  
imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Chronic Infection of Cultures of Transplanted RES Cells Caused by Gmeta  
Arbovirus"

Moscow, Voprosy Virusologii, No 3, May-Jun 70, pp 270-274

Abstract: Chronic infection of a culture of transplanted fetal pig kidney cells was produced by the Gmeta arbovirus (strain AMM 2021). During the observation period (302 days), a typical feature in the development of these cultures was the successive alternation of phases of degeneration and repopulation of the cell monolayer. The percentage of infected cells in the repopulation phase, established by the method of infection centers, was 6-7 percent. The proliferative activity of the RES-Gmeta cultures was about three times lower than that of normal RES cultures. The chronic infection of the RES-Gmeta cultures was accompanied by the production of interferon in the cells. The RES-Gmeta cell cultures were resistant to superinfection with homologous virus. An attempt to treat RES-Gmeta cultures with hyperimmune specific serum was unsuccessful.

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USSR

UDC 547.26'11

VIZEL', A. O., KRUPNOV, V. K., ARBUZOV, B. A., and FADEYEVA, L. M., Institute of Organic and Physical Chemistry imeni A. Ye. Arbutov, Academy of Sciences USSR

"Production of 1-Halophospholenes With a Trivalent Phosphorous Atom and Syntheses Based on These Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 10, Oct 73, pp 2137-2143

Abstract: A simple, one stage synthesis of 1-halophospholenes with a trivalent phosphorus has been described based on the reaction of a conjugated diene hydrocarbon with phosphorus trihalide and white phosphorus, best results being obtained with the reagent ratio of 3:1:2. The products are very reactive compounds which could be used in synthesis of novel phospholene derivatives: ethers, thioethers, and amides with trivalent phosphorus; they also react easily with conjugated dienes via a 1-4 cycloaddition, yielding novel spirophosphonium salts. The cyclic phosphonates obtained undergo easily the Arbuzov and Perkov rearrangement reactions.

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USSR

FADEYEVA, L. M., Candidate of Biological Sciences, Kazakh Scientific Research Institute of Regional Pathology

"Hepatotropic Properties of Mycotoxins"

Alma-Ata, Zdravookhraneniye Kazakhstana, No 8, 1972, pp 33-34

Abstract: Aflatoxins, thermostable substances produced by some fungi, cause necrosis of hepatocytes and proliferation of bile ducts in various mammals, birds, and fishes. In subacute intoxication, they are eliminated from the mammalian body with milk and urine. In Kazakhstan, multiple cases of food poisoning of whole families were recorded in 1960-1972, and subsequent investigations revealed the presence of various fungi, including those producing aflatoxins, in improperly stored wheat, barley, and rice grain, bread, beer malt, meat, and jams and preserves. In southern regions of Kazakhstan, food products are contaminated with these fungi much more frequently than in northern regions. Since the republic supplies the Soviet Union with large quantities of rice and other grain, it is recommended that strict storage and inspection standards be introduced and that the hepatotropic effects of aflatoxins on the human body be extensively investigated.

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USSR

UDC 534-14

BABKIN, V.P., FADEYEVA, L.M.

"Model Experiments On Attestation Of Spherical Targets"

Tr.Akust.in-ta (Works Of The Institute Of Acoustics), 1971, Issue 17, pp 80-98  
(from RZh--Elektronika i yeye primeneniye, No 3, 1972, Abstract No 3A360)

Translation: An experimental study is made in a hydroacoustic basin of returns dispersed by various screens during their irradiation by audio pulses of ultrasonic frequency. The results are presented of experiments on measurement of the frequency response of the scattering amplitude by spherical targets with a 25-mm radius, made from steel, Dural, brass, ebonite, organic glass, and lead. It is shown that the average interval between neighboring maxima is monotonically connected with the velocities of the shear waves originating in the material of the target by the action of an incident wave. The frequency spectra are given of the back scattering of the UE (?ultrasonic echoes) by pairs of targets located at various azimuthal angles to the direction of the incident wave. 12 fig. 3 tab. 14 ref. L.K.

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USSR

VORONTSOVA, N. A., VLASOV, O. N., FADEYEVA, M. L., BASKAKOV, YU. A.

"Alkaline Hydrolysis of O-Acyl-N-carboisopropoxy-N-arylhydroxylamines"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protective Agents -- collection of works), No 2, Moscow, 1972, pp 295-298 (from RZh-Khimiya, No 19, Oct 73, Abstract No 19N552)

Translation: Alkaline hydrolysis of the derivatives of N-carboisopropoxy-N-acylhydroxylamine has been studied in temperature range +25 to -17°. The hydrolysis occurs by the second order reaction. The activation energies have been calculated. It has been shown that in addition to the inductive effect, other factors influence the reaction rate, principally the steric factors. O-Acyl-N-carboisopropoxy-N-acylhydroxylamines exhibit herbicidal properties.

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1/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--CHANGES IN A SYSTEM OF ENDOGENOUS GROWTH REGULATORS IN BEAN PLANTS  
UNDER THE INFLUENCE OF 2,4-D -U-

AUTHOR--(05)-CHIGRIN, V.V., FILINKOLDAKOV, B.V., FADEYEVA, O.I.,  
BORTNIKOVA, T.P., SYKALO, N.I.  
COUNTRY OF INFO--USSR

SOURCE--KHIM. SEL. KHOZ. 1970, 8(4), 301-2

DATE PUBLISHED-----70

F

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LEGUME CROP, PLANT PHYSIOLOGY, PLANT GROWTH REGULATOR,  
HERBICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3008/0021

STEP NO--UR/0394/70/008/004/0301/0302

CIRC ACCESSION NO--AP0137220

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137220

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWENTY FOUR HR AFTER TREATMENT OF KIDNEY BEAN PLANTS WITH A SOLN. OF THE K SALT OF 2,4-D (2 TIMES 10 PRIME NEGATIVE 3 M), THE CONTENT OF INDOLEACETIC ACID (I) IN THE LEAVES WAS UNCHANGED, BUT AFTER 6 DAYS IT WAS DOUBLED. IN THE STEMS OF THE PLANTS THE AMT. OF I DOUBLED, 24 HR AFTER APPLICATION OF THE HERBICIDES. THE ACTIVITY OF I OXIDASE, AND THE CAPACITY OF FIBER HOMOGENATES TO SYNTHESIZE I FROM TRYPTOPHAN, WAS CONSIDERABLY HIGHER FOR PLANTS TREATED WITH 2,4-D. FACILITY: SEVEROKAVKAZ, NAUCH.-ISSLED. INST. FITOPATOL., USSR.

UNCLASSIFIED

Acc. Nr:

AP0044403

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskii Zhurnal, 1970, Vol 56,  
Nr 1, pp 48-54  
INFLUENCE OF HYPOTHALAMIC AREA ON CILIARY BODY SECRETORY  
ACTIVITY

Bekauri, N. V.; Fadeyeva, O. N.; Chuzhkov, M. I.; Shenger, I. F.

From the I. P. Pavlov Institute of Physiology, USSR Ac. Sci., Leningrad

The effect of electro-stimulation in the hypothalamic area on the secretory activity of the ciliary body has been studied in rabbits and cats. This activity was evaluated by the level of intraocular pressure. Acute experiments in cats have demonstrated that stimulation of various parts of the hypothalamic area (particularly its posterior part) brings about a lowering of intraocular pressure during the 2-3 hrs following stimulation without a corresponding fall in arterial pressure.

In chronic experiments in rabbit stimulation of the mammillary body in the hypothalamic region by electric current or adrenalin electrophoresis into this area evoked during 3-4 hrs following stimulation a lowering of intra-ocular pressure, preferably on the stimulated side.

Data obtained point to the participation of the hypothalamic area in regulating the ciliary body activity and to the role of both the neural and hormonal factor therein.

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19771021

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1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--CYCLIC UNSATURATED COMPOUNDS. 31. CONVENIENT METHOD FOR DETERMINING  
SUBSTITUENT CONFIGURATION IN POSITION SEVEN OF THE NORBORNENE SKELETON  
AUTHOR--MIKOS, E.P., FADEYEVA, T.M., AKHREM, A.A., MIRONOV, V.A.,  
POLKOVNIKOV, R.D.  
COUNTRY OF INFO--USSR

F

SOURCE--IZV. AKAD. NAUK SSR, SER. KHIM, 1970, (1), 129-34

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ANHYDRIDE, DICARBOXYLIC ACID, CYCLIC GROUP, HEPTENE,  
HYDROGENATION, THERMAL DECOMPOSITION, NMR SPECTRUM, IR SPECTRUM,  
CHEMICAL KINETICS, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1984/2671

STEP NO--UR/0062/70/000/001/0129/0134

CIRC ACCESSION NO--AP0200275

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UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0200275

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROGENATION OF ENDO, ANHYDRIDES OF 7, SYN, METHYL, AND, 7, ANTI, METHYLBICYCLO (2.2.1) HEP, 2, TENE, 5, 6, DICARBOXYLIC ACIDS WAS STUDIED KINETICALLY; THE SYN ISOMER WAS HYDROGENATED AT ABOUT HALF THE RATE DISPLAYED BY THE ANTI ISOMER OR BY THE UNSUBSTITUTED ANHYDRIDE. THE HYDROGENATION MIXT. FROM THE SYN ISOMER GAVE 7, SYN, METHYLBICYCLO (2.2.1) HEPTANE, 5, 6, DICARBOXYLIC ANHYDRIDE, M. 122 TO 3DEGREES, WHICH HYDROLYZED TO FREE DICARBOXYLIC ACID, DECOMP. 178 TO 9DEGREES (DI ME ESTER, B SUB2 4R TO 9DEGREES, N PRIME20 SUBD 1.4933, WAS PREPD. WITH CH SUB2 N SUB2). SIMILARLY THE ANTI ISOMER WAS HYDROGENATED TO THE SATD. ANALOG, M. 134 TO 6DEGREES, WHICH GAVE THE FREE 7, ANTI, METHYLBICYCLO (2.2.1) HEPTANE, 5, 6, DICARBOXYLIC ACID, DECOMP. 169 TO 71DEGREES. NMR AND IR SPECTRAL CURVES WERE SHOWN. THE CONFIGURATION OF THE SUBSTITUENT IN THE 7 POSITION IN THE BICYCLOHEPTENE SKELETON CAN BE CONVENIENTLY DETD. BY THE DETN. OF RELATIVE RATES OF HYDROGENATION.

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1/2 030 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--KINETICS OF THE REACTION OF METHANE WITH A WATER VAPOR OXYGEN  
MIXTURE ON A NICKEL CATALYST -U-  
AUTHOR-(03)-LEYBUSH, A.G., GRUZINTSEVA, A.N., FADEYEVA, T.V.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1), 18-24  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--METHANE, NICKEL CATALYST, CATALYTIC OXIDATION, PRESSURE,  
THERMAL EFFECT, PARTICLE SIZE, ACTIVATION ENERGY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3005/0040 STEP NO--UR/0064/70/046/001/0018/0024  
CIRC ACCESSION NO--AP0132335  
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132335

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE CATALYTIC OXIDN. OF CH SUB4 BY H SUB2 O AND O (1:1.5:0.6 VOL. CH SUB4 -H SUB2 O-O) ON A NI-AL CATALYST (4-6PERCENT NI), THE RATE CONSTS. K OF THE REACTION AT 700DEGREES AND 800DEGREES WAS 95 AND SIMILAR TO 200 L.-(ATM-HR-G) RESP., REGARDLESS OF SUBSTANTIAL VARIATIONS IN THE PARTIAL PRESSURES P OF THE REACTANTS; E.G., PCH SUB4 WAS 0.04-0.21 ATM. AT 900DEGREES, K DECREASED FROM 552 TO 383 L.-(ATM-HR-G) WHEN PCH SUB4 WAS INCREASED FROM 0.025 TO 0.034 ATM. THE ABOVE DATA WERE OBTAINED WITH A CATALYST WITH A PARTICLE SIZE (P.S.) OF 2.5 MM; INCREASING THE P.S. DECREASED K; E.G., WITH A CATALYST WITH A P.S. 15 MM AT 800DEGREES, K WAS SMALLER THAN OR EQUAL TO 25-6 L.-(ATM-HR-G); AT 900DEGREES, K WAS SMALLER THAN 39-51 L.-(ATM-HR-G), DEPENDING ON THE SHAPE OF THE CATALYST. THE APPARENT ENERGY OF ACTIVATION OF THE REACTION ON THE CATALYST WITH P.S. 1.5-2.5 MM WAS 19-9.7 KCAL-MOLE AND THE CONST. A IN THE ARRHENIUS EQUATION WAS 2.5 TIMES 10 PRIME6; THE RESP. VALUES FOR P.S. 10-15 MM WERE 9-11 KCAL-MOLE AND 1.8 TIMES 10 PRIME3, RESP.

UNCLASSIFIED

USSR

UDC 542.61+546.631

LITVINCHEVA, A. S., FADEYEVA, V. I., and ALIMARIN, I. P., Moscow State University imeni M. V. Lomonosov

"Heptylphosphoric Acid Tetraethyl Diamide Extraction of Scandium, Thorium and Zirconium From Perchloric Acid Solutions in the Presence of Thiocyanate Ion"

Moscow, IAN SSSR, Seriya Khimicheskaya, No 9, Sep 70, pp 1,935-1,940

Abstract: Heptylphosphoric acid tetraethyl diamide  $C_7H_{15}OP(O)[N(C_2H_5)_2]_2$  (HPADA) in benzene was used to extract scandium, thorium and zirconium from perchloric acid solutions. An investigation of extraction as a function of the concentration of hydrogen ions in the aqueous phase showed that optimum extraction of Sc is observed at pH of 1-3, while optimum Th extraction is at pH of 1.7-3. Extraction of zirconium thiocyanates at concentrations of 0.15-2.5 M  $HClO_4$  remains constant, with somewhat of a reduction when the concentration is raised to 4 M. A further increase of perchloric acid concentration in the aqueous phase causes precipitation of a yellow substance -- products of decay, polymerization and isomerization of thiocyanic acid. Graphic and analytical data showed existence of the following complexes in the organic phase:  $Sc(SCN)_3 \cdot 3HPADA$  (pH 1),  $Sc(OH)(SCN)_2 \cdot 3HPADA$  (pH 2.5),  $Th(SCN)_4 \cdot 2HPADA$  and  $Zr(OH)_2(SCN)_2 \cdot 2HPADA$ .  
1/1

USSR

UDC 612.3-0.6:613.34

BOKINA, A. I., and FADEYEVA, V. K., Institute of General and Communal  
Medicine imeni A. N. Sysin, Academy of Medical Sciences USSR, Moscow

"Characteristics of the Action of Desalinated Drinking Water on the State  
of the Gastrointestinal Tract"

Moscow, Gigiyena i Sanitariya, No 2, Feb 73, pp 93-94

Abstract: At the city of Shevchenko, the regularly supplied drinking water that is consumed by the inhabitants consists of sea water desalinated by distillation to which highly mineralized artesian well water of the chloride-sulfate-sodium type is added. The content of sulfates in this water during 1967-71 varied from 70 to 550 mg/l. Determinations were carried out of the acidity of the gastric juice of adult inhabitants of Shevchenko who had consumed the water supplied there for periods from less than 1 year to more than 5 years. In the study conducted, inhabitants of Moscow who consumed Moscow city water were used as controls. The results showed that consumption of the water supplied at Shevchenko tended to produce hypoacidity of the gastric juice. The frequency of occurrence of hypoacidity increased with the length of the sojourn in Shevchenko and with an increasing age of the inhabitants of this city. Women were affected to a somewhat greater  
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USSR

BOKINA, A. I., and FADEYEVA, V. K., *Gigiyena i Sanitariya*, No 2, Feb 73, pp 93-94

extent than men. Determinations of enterokinase and alkaline phosphatase in the feces of children at Shevchenko showed that the enzyme formation in the small intestine was within normal limits, although the content of the two enzymes had a tendency to be lower than that for Moscow children.

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- 65 -

FADEYEVA, Z.M.

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In Reply Refer to:  
FSTC HT-23-72-73  
DMA Task No. 770-23-01

U.S. ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER  
210 AVIATION BRIDGE RD.  
CHARLOTTESVILLE, VIRGINIA 22901

Date: November 3, 1972

FADEYEVA Z.M. / FSTC  
HT-23-72-73

TRANSLATION

ENGLISH TITLE: HYGIENIC EVALUATION OF CASEOUS IMPURITIES IN THE AIR OF A  
SHOP PRODUCING SMS-30 LATER IN THE OMSK SYNTHETIC RUBBER PLANT

AUTHOR: Z.M. Fadeyeva  
LANGUAGE: Russian

SOURCE: Trudy Onkogo Nedistia- TRANSLATOR: Universal Language Services,  
skogo Instutca Ieml  
N.I. Kollina, 89, 1969, REQUESTOR: SRUFA,  
pp. 56-61.

COUNTRY: USSR

USSR

UDC 577.1:615.7/9

FADEYEVA, Z. M., and EYKHLER, Yu. N.

"Experimental Data on Combined Action of Butadiene and Alpha-Methylstyrene on Animal Organism"

Nauch. tr. Omsk. med. in-t (Scientific Works of Omsk Medical Institute), 1971, No 107, pp 166-174 (from RZh-Biologicheskaya Khimiya, No 16, 25 Aug 72, Abstract No 16F2125 by D. M. Glukharev)

Translation: Male rats underwent inhalation inoculation with butadiene (I:  $99.8 \pm 4$  mg/cu m) and alpha-methylstyrene (II:  $5.2 \pm 0.3$  mg/cu m) and a determination was made of the amount of Hb, erythrocytes and leukocytes in the peripheral blood, ChE activity, and sulfhydryl-group and nucleic-acid content of the whole blood, as well as prothrombin activity of the blood, the amount of coproporphyrin in the urine, vitamin C, B<sub>1</sub> and B<sub>2</sub> content of the urine, blood and some organs. The administration of I plus II induced a lowering of the quantity of leukocytes and their phagocytic activity, depression of ChE activity, a significant lowering of endogenic liver respiration, an increase in the total sulfhydryl-group content of the blood, elevated excretion of coproporphyrin in the urine, an increase in the amount of ascorbic acid in 1/2

USSR

FADEYEVA, Z. M., and EYKHLER, Yu. N., Nauch. tr. Qmsk. med. in-t, 1971,  
No 107, pp 166-174

the urine and a diminution thereof in the blood and liver and brain tissues,  
and a decrease in the thiamine content of the urine and liver and in the  
excretion of riboflavin in the urine. The combined action of I and II also  
entailed changes in tissue elements and signs of vascular dystonia in  
respiratory organs and nervous systems, heart, liver, kidneys (histochemical  
analyses).

2/2



FADIN, V. G.

Semiconductors

*Image conversion/semiconductors*

2

JPRS 59636  
27 July 1973

*EM*  
*Carla*

IMAGE CONVERTER BASED ON MULTI-LAYER SEMICONDUCTOR-DIELECTRIC STRUCTURES UIC 621,383.8

[Article by N. P. Kozlovskiy and V. G. Fadin, Minsk, Zhurnal Fizicheskoy Spektroskopii, Bismark, Vol 18, No 1, January 1973, translated 6 December 1971, pp 127-132]

Experimental investigations of image storing and reading systems are described in works [1-4]. When an image impinges on a structure, the relief of the electric field, corresponding to the different intensity of illumination of the individual crystal points, is formed in the bulk of a high-ohmic semiconductor. The relief of the electric field is also created in the layers of the dielectric, but of opposite sign to the relief of a field in the semiconductor. In the section, where the minimum value of the field exists in the semiconductor, the maximum value of the field exists in the dielectric, and vice versa.

Reproduction of the recorded pattern is accomplished either by recording the photoconductivity signal by scanning with a light beam, or by in a strong electric field. In this case, the possibility exists for simultaneous reproduction of the whole image.

The arrangement, in which the reproduction of the recorded image is accomplished by recording the variation in the electrooptical properties in the layers of the dielectric, can be of significant interest. In this case, for recording an image the light of one spectral region can be employed, for example the infrared region, and for reproduction -- the light of another spectral region, for example the visible region, i.e., it is possible to create an image converter, which converts an image in infrared rays into a visible image. The present report is dedicated to the analysis of the operation of these types of converters.

A diagram of a converter is represented in Fig. 1. The visible light, passing through the transparent metallic electrode 3 into the

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UDC 621.382.2

KOVTONYUK, N. F., MOROZOV, V. A., FADIN, V. G., BOGOMOLOV, P. A., ALISULTANOV, YU. B., POTAPOV, I. S.

"Storage of Light Pulse Action in Metal-Dielectric-Semiconductor-Dielectric-Metal Structures Operating in the Prebreakdown Mode"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 575-576

Abstract: A study was previously made of the phenomenon of accumulation of free carriers under the effect of pulse and stationary illumination in metal-dielectric-semiconductor-dielectric-metal structures in which there were no continuous currents through the dielectric layers [N. F. Kovtonyuk, et al., FTP, No 5, 1174, 1971]. A study has now been made of the case where significant leakage currents flow through the dielectric layers and accumulation of carriers does not occur in practice. Storage of the short light pulse action was detected. On inclusion of the voltage pulse in the absence of illumination of the sample, a capacitive current pulse is observed on the leading edge of the pulse. This capacitive current pulse is characteristic of structures without leakage. Then comes a segment where the continuous current has a comparatively low value (segment I) and only after this is a significant increase in the continuous current through the structure observed. After some time, it

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USSR

KOVTONYUK, N. F., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 575-576

reaches a constant value (segment II). The length of segment I is less the greater the voltage pulse amplitude. The magnitude of the saturation current in segment II approaches saturation with an increase in voltage. Under the effect of a light pulse, a photoconductivity signal is observed in segment II. Current oscillograms and the length of segment I and magnitude of the current of segment II as functions of the voltage pulse amplitude are presented.

Structures were manufactured so that the dielectric resistance was commensurate with the semiconductor resistance, and it was discovered that the sensitivity of such structures is no lower than in good metal-dielectric-semiconductor-dielectric-metal structures operating in the pulse accumulation mode. The data indicate that the prebreakdown operating mode of the investigated structures can be used in creating dynamic storage elements and also certain types of photoreceivers.

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USSR

UDC: 669.018

KHON, Yu. A., FADIN, V. P., and KUZNETSOV, V. N.

"Some Characteristics of Atom Segregation in Antiphase Boundaries of Triple Alloys With a Face-Centered Cubic Lattice"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy--Fizika, No 5, 1973, pp 18-25

**Abstract:** This paper examines the theory of the formation of atom segregation at antiphase boundaries of the {111} type in ternary alloys with face-centered cubic lattices. The interaction of the atoms in the first two coordination spheres is taken into account in this investigation into the effect of the size of the domains and the relationships between the atomic interaction energies on the extent of the segregations. It is assumed that the effect of the antiphase boundary erosion can be neglected. The authors begin their analysis with the equation for the energy configuration per unit volume of the triple alloy and the expression for the configuration part of the entropy. Analysis of the equations of the solution derived in the article showed that the density of the antiphase boundary has little effect on the amount of segregation. It was  
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USSR

UDC: 669.018

KHON, Yu. A., et al, Izvestiya vysshikh uchebnykh zavedeniy--fizika,  
No 5, 1973, pp 18-25

also found that with relatively strong interaction of the A and D atoms of the A-B-D components of the triple-alloyed material, substantial segregation of the B element occurs, with consequent delay in the ordering processes at the stage of domain growth. This conclusion agrees qualitatively with the known experimental results.

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USSR

UDC: 539.21:536.72

KHON, Yu. A., FADIE, V. P., and NAZHALOV, A. I.

"Theory of the Ordering Phenomenon in Triple Alloys, Part I"

Tomsk, Izvestiya VUZ--Fizika, No 1, 1972, pp 17-22

Abstract: As indicated by the title, the present article is the first part of a two-part article dealing with the phenomenon of atomic ordering in triple alloys with center-faced crystal lattices from a theoretical point of view. In this first part, an investigation is made of possible types of superstructures in such triple alloys, with computations made on an alloy model, taking into account the interaction of atoms in the first two coordination spheres. The conditions of existence of the various types of superstructure are also investigated. The second part of this paper will theoretically investigate the effect of the interatomic action on the nature of the atomic distribution in such triple alloys, using the same sort of model as that mentioned above. The authors are associated with the V. D. Kuznetsov Siberian Physico-Technical Institute at the Tomsk State University.

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Acc. Nr:

A70047569

Abstracting Service:  
CHEMICAL ABST.

5/70

Ref. Code:

UR0139

92841n Nature of the acceleration of ordering processes during the alloying of Ni<sub>3</sub>Mn with iron, cobalt, and chromium. Prushinskii, V. V.; Panin, V. E.; Radin, V. P.; Lotkov, A. I. (Sib. Fiz.-Tekh. Inst. im. Kuznetsova, Tomsk, USSR). *Izv. Vyssh. Ucheb. Zaved., Fiz.* 1970, 13(1), 73-8 (Russ). Ordering processes of alloying were studied of Ni<sub>3</sub>(Mn, M) alloys, where M = Fe, Co, or Cr. The study reveals that the basic reason for the acceleration of the ordering processes in the alloys is the change of the mechanism of ordering from homogeneous in Ni<sub>3</sub>Mn to heterogeneous in ternary alloys.

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REEL/FRAME  
19791135

18

Acc. Nr:

A70047567

Abstracting Service:  
CHEMICAL ABST.

5/70

Ref. Code:

4A 0139

92821f Theory of the concentration of vacancies on antiphase boundaries of ternary ordering alloys. Fadin V. B. (Sib. Fiz.-Tekh. Inst. im. Kuznetsova, Tomsk, USSR). Izv. Vyssh. Ucheb. Zaved., Fiz. 1970, 13(1), 119-24 (Russ). Theory is discussed of the dependence of the vacancy concn. at antiphase boundaries of ternary ordering alloys with bcc. lattice, on the long range order parameters, on temp., and on the magnitude of the interactions of atoms of a 3rd alloying element with the atoms of the basic components of the ternary alloy. The theory is applied to actual types of antiphase boundaries of ternary alloys of the quaternary section BA-AD.

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REEL/FRAME  
19791133

18



1/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--EFFECT OF CHROMIUM ALLOYING ON ELECTRON STRUCTURE AND ORDERING IN  
NI SUB3 MN ALLOY -U-  
AUTHOR--(04)-FADIN, V.P., RYABYSHKINA, G.A., PANIN, V.YE., PRUSHINSKIY,  
V.V.  
COUNTRY OF INFO--USSR F  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 44-51  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS, MATERIALS  
TOPIC TAGS--ELECTRON STRUCTURE, CHROMIUM ALLOY, NICKEL ALLOY, MANGANESE  
ALLOY, MODEL  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1993/1916 STEP NO--UR/0139/70/013/002/0044/0051  
CIRC ACCESSION NO--AT0114356  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0114356

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF PARAMETERS WHICH CHARACTERIZE THE STATE OF THE ALLOYS (RESISTANCE R, INTERNAL INDUCTION SATN.,  $\delta$  SUBS, ABS. THERMAL EMF. S) AND OF THE NEUTRON DIFFRACTION DIAGRAMS WAS USED TO DET. THE EFFECT OF CR ALLOYING ON THE STRUCTURE OF THE D BAND AND ON THE ORDERING PROCESSES. THE ADDN. OF CR DECREASES THE VALUES OF  $\delta$  SUBS FOR THE DISORDERED ALLOY AS WELL AS THE CHANGE IN  $\delta$  SUBS UPON ORDERING. THUS, THE ANTIFERROMAGNETIC INTERACTION OF THE ATOMS IN THE MN-CR PAIRS IS GREATER THAN IN THE MN-MN PAIRS. THE NEUTRON DIFFRACTION DATA SHOW THAT EVEN FOR SMALL AMTS. OF CR (SIMILAR TO 9 AT PERCENT) A HIGH DEGREE OF LONG RANGE ORDER IS ESTABLISHED IN THE ALLOY. THE VALUES OF R ARE GREATER IN THE ORDERED THAN IN THE DISORDERED ALLOY DUE TO THE INCREASE IN THE D. OF THE ELECTRON STATES IN THE 3D BAND OF THE ORDERED ALLOYS RESULTING IN AN INCREASED PROBABILITY FOR THE SCATTERING OF THE 4S ELECTRONS IN THE 3D BAND. THE VALUE OF S EQUALS F(R) INDICATES THAT THERE IS A CLOSED FERMI SURFACE IN BOTH THE DISORDERED AND ORDERED ALLOYS FOR LOW CR CONCNS. (SMALLER THAN 6 AT. PERCENT) AND AN OPEN FERMI SURFACE FOR HIGHER CONCNS. FOR ALLOYS WITH LOW CR CONCNS. THE MODEL WITH A RIGID 3D BAND IS APPLICABLE. LARGER CONCNS. PERTURB THE STRUCTURE OF THE 3D BAND. FACILITY: SIB. FIZ.-TEKH. INST. IM. KUZNETSOVA, TOMSK, USSR.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--HALL EFFECT IN TERNARY ORDERED ALLOYS NI SUB3, MN, FE, AND NI SUB3,  
MN, CO -U-  
AUTHOR--(02)-ZHUKOVA, V.M., FADIN, V.P.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(3), 21-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--ORDERED ALLOY, SOLID SOLUTION, NICKEL ALLOY, MANGANESE ALLOY,  
IRON ALLOY, HALL CONSTANT, INTERMETALLIC COMPOUND, COBALT ALLOY, FERMI  
SURFACE, HALL EFFECT, PHONON  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3005/0849 STEP NO--UR/0139/70/013/003/0021/0029  
CIRC ACCESSION NO--AT0132939  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132939

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NORMAL ( $R_{SUB0}$ ) AND ANOMALOUS ( $R_{SUB8}$ ) HALL CONSTS. AND THE SP. RESISTANCE WERE MEASURED FOR DISORDERED ALLOYS OF THE QUASIBINARY CROSS SECTIONS NI  $SUB_3$  MN-NI  $SUB_3$  FE AND NI  $SUB_3$  MN-NI  $SUB_3$  CO. IN NI  $SUB_3$  MN AND IN THE TERNARY ALLOYS WITH LOW FE AND CO CONCNS., THE HOLE PORTION OF THE FERMI SURFACE MAKES A LARGE CONTRIBUTION TO THE VALUE OF  $R_{SUB0}$ . THE MAIN MECHANISM IN THE SCATTERING OF THE CARRIERS FOR THE ANOMALOUS HALL CURRENT FOR THE ALLOYS CONTG. FE AT ROOM TEMP. IS SCATTERING ON PHONONS. AN ANAL. OF THE CONC. DEPENDENCE OF  $R_{SUB0}$  FOR THE ALLOYS OF THE NI  $SUB_3$  MN-NI  $SUB_3$  FE CROSS SECTION SHOWS THAT THESE ALLOYS ARE CHARACTERIZED BY A CLOSED FERMI SURFACE. THE RESULTS CAN BE PUGH, 1955). THE NATURE OF THE CONC. DEPENDENCE OF  $R_{SUB0}$  FOR THE ALLOYS OF THE NI  $SUB_3$  MN-NI  $SUB_3$  FE CROSS SECTION AGREES WITH THE RESULTS OBTAINED EARLIER (J. YAMASHITA, ET AL., 1966) AND INDICATES THE APPLICABILITY OF THE RIGID 3D BAND MODEL TO THESE ALLOYS.

FACILITY: TOMSK, GOSUNIV., TOMSK, USSR.

UNCLASSIFIED

USSR

UDC 669.017:537

ZHUKOVA, V. M., FADIN, V. P.

"Investigation of the Hall Effect in Ternary Ordered  $Ni_3(Mn, Fe)$  and  $Ni_3(Mn, Co)$  Alloys. II. Ordered Solid Solutions"

Tomsk, Izvestiya Vysshykh Uchebnykh Zavedeniy; Fizika, No 5, 1970, pp 99-105

Abstract: An experimental study was made of the changes of the normal Hall constant  $R_0$  and the anomalous Hall constant  $R_S$ ; the internal saturation induction  $B_S$ ; the specific resistance  $\rho$  in the ordering of alloys of quasibinary profiles  $Ni_3Mn-Ni_3Fe$  and  $Ni_3Mn-Ni_3Co$ ; and the concentration relationships  $R_0$ ,  $R_S$ ,  $\rho$ , and  $B_S$  of the indicated alloys in an ordered state. On the basis of an analysis of the experimental results, conclusions are drawn that the decrease of  $R_0$  and  $\rho$  in ordering of the alloy  $Ni_3Mn$  and in alloying of the ordered alloy  $Ni_3Mn$  with small ( $\sim 5$  atomic %) quantities of iron is brought about essentially by a decrease in the contribution of holes to the transfer phenomena and a decrease in the density of the states in the 3d-bands of the indicated alloys in the vicinity of the Fermi level. The experimental data are in satisfactory agreement with the character of the density curve of 3d states that had been computed in a cited reference for ordered  $Ni_3Mn$  and  $Ni_3Fe$  alloys.

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USSR

FADIN, V. S. and KHOZE, V. A., Leningrad Institute of Nuclear Physics, Academy of Sciences USSR

"The Angular Distribution of Photon Brehmsstrahlung During the Collision of Ultra-relativistic Electrons"

Moscow, Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 560-570

Abstract: The authors study brehmsstrahlung during the collision of ultrarelativistic electrons and positrons. Expressions are obtained, with logarithmic accuracy, for the angular distribution of photons which are valid for all angles  $\theta_k$  and frequencies  $\omega$  (except for the hard end of the spectrum). Incident particles with transverse polarization are also considered. An applicability analysis is made of the following methods: the Weizsacker-Williams method, the classical current method, and the pole approximation method for obtaining the angular distributions and spectra in c.m.s. and l.s. according to the electron propagator designator.

1/1

USSR

BAYYER, V. N., and EADIN, V. S., Institute of Nuclear Physics, Siberian Department, Academy of Sciences USSR

"Inelastic Contributions to Electromagnetic Pion Form Factor"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 4, 20 Feb 72, pp 219-224

Abstract: Recent experiments on  $\pi^+\pi^-$ -pair production on counter electron-positron beams in Novosibirsk and Frascati, measuring the electromagnetic pion form factor  $F_\pi(s)$ , at energies  $\sqrt{s} = 2\epsilon > 1$  Gev disclosed that  $|F_\pi(s)|$  considerably exceeds the Breit-Wigner curve, which approximates  $|F_\pi(s)|$  in the  $\rho$ -resonance region. Experiments in this same energy region also established that there is a great likelihood of a photon passing into many-hadron states. In this connection the indicated increase in the form factor  $|F_\pi(s)|$  can be explained as follows: the photon passes into many-hadron states (this is very likely to occur), which are then transformed into a pair of pions. Intermediate states with a large number of particles thus are

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BAYYER, V. N., and PADIN, V. S., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoj Fiziki, Vol 15, No 4, 20 Feb 72, pp 219-224

important. In other words, we are dealing with inelastic contributions to the unitarity relation for the form factor. This relation takes the following form:

$$\text{Im} F_{\pi}(s) = \beta f_{11} F_{\pi}^{-}(s) \theta(s - 4\mu^2) + \frac{(2\pi)^4}{2} \sum_{\substack{n \neq \pi^+\pi^- \\ (J=1=1)}} \delta(p_+ + p_- - p_n) \times \\ \times \langle \pi^+\pi^- | T | n \rangle \frac{(p_+ - p_-)^{\mu} \langle 0 | J_{\mu}(0) | n \rangle}{(s - 4\mu^2)} = \beta f_{11} F_{\pi}^{-}(s) \theta(s - 4\mu^2) + D.$$

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USSR

BAYYER, V. N., and ~~EADIN, V. S.~~ Institute of Nuclear Physics, Academy of Sciences USSR, Siberian Department

"The Process of Electron-Induced Production in Counterbeam Experiments"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 13, No 6, 20 Mar 71, pp 293-297

Abstract: The process of electron-induced production in counterbeam experiments ( $e^+ e^- \rightarrow e^+ e + N$ ) lately has been discussed a number of times, particularly at the Kiev conference. The present article gives a more detailed analysis of the process of electron-induced pair production for the purpose of comparing it with the results of the latest counterbeam experiments. Two-photon and brake diagrams are considered. The authors thank A. ONUCHIN for discussing the experimental situation and S. EYDEL'MAN for assisting in the numerical calculations.

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USSR

UDC 532.526

TUPICHENKOV, A. A., FAFURIN, A. V., KUZ'MIN, V. V.

"Hydrodynamic Characteristics of a Flow in the Initial Sections of Flow-Meter Devices"

Tr. metrol. in-tov SSSR (Works of the Metrology Institutes of the USSR), 1972, No. 135(195), pp 79-87 (from RZh-Mekhanika, No 6, Jun 72, Abstract No 6B764)

Translation: The development of a turbulent boundary layer in the initial section of a tube was studied considering the roughness of the walls. The theoretical study was conducted from the posits of boundary layer theory. Tubes with a natural and artificial roughness were used in the experiments, where the magnitude of the roughness was  $k_{\alpha}/r_0 = 10^{-3}$  and  $k_{\alpha}/r_0 = 1.44 \cdot 10^{-2}$ . The Reynolds number varied over the range  $5.1 \cdot 10^4 - 3.4 \cdot 10^5$ . The computational method proposed is in good agreement with experimental results. 7 ref. Authors abstract.

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USSR

UDC 681.121

KUZ'MIN, V. V., PAFURIN, A. V., TUPICHENKOV, A. A., MATVEYEV, Yu. F.

"The Problem of Determination of Optimal Points for Installation of Flow Rate Measuring Devices Considering Wall Roughness"

Tr. Metrol. In-tov SSSR [Works of Metrology Institutes, USSR], 1972, No 135 (195), pp 98-106, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, 1972, No 5, Abstract No 5.32.734).

Translation: Results are presented from experimental determination of lengths of sectors of hydrodynamic stabilization with even distribution of velocity at the inlet to a tube. The experiments were performed using water in the range of Reynolds numbers from  $5.1 \cdot 10^4$  to  $3.4 \cdot 10^5$ , both in the smooth flow mode and with natural and artificial roughness

$$\left( \frac{k_a}{r_0} = 10^{-3} \text{ or } \frac{k_a}{r_0} = 1.44 \cdot 10^{-2} \right) \quad \text{and} \quad \frac{k_a}{r_0} = 10^{-4} \text{ or } \frac{k_a}{r_0} = 1.44 \cdot 10^{-3}$$

The results show that an increase in roughness causes a decrease in the length of the initial sector. 5 Figures; 18 Biblio. Refs.

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USSR

UDC 532.517.3

KUZ'MIN, V. V., TUNICHENKOV, A. A., FAFURIN, A. V., Kazan'

"Turbulent Boundary Layer in the Initial Sector of a Pipe with Rough Walls"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 5, 1971, pp 109-116.

ABSTRACT: The development of the turbulent boundary layer in the initial sector of a pipe with rough walls is studied within the framework of boundary layer theory. It is demonstrated that consideration of roughness can be performed by introducing a function to the "standard" rule of friction, considering this factor. The experimental study was performed on an experimental pipe sector with natural roughness, the relative value of which is  $10^{-3}$ . The range of Reynolds numbers was  $5.1 \cdot 10^4 - 3.4 \cdot 10^5$ .

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1/2 025

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--REAL STRUCTURE OF THE HIGHER VANADIUM CARBIDE -U-

AUTHOR--(03)-ARBUZOV, M.P., FAK, V.G., KHAYENKO, B.V.

COUNTRY OF INFO--USSR

SCURCE--KRISTALLGGRAFIYA 1970, 15(1), 196-9

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--X RAY DIFFRACTION ANALYSIS, VANADIUM COMPOUND, CARBIDE,  
CRYSTAL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0754

STEP NO--UR/0070/70/015/001/0196/0199

CIRC ACCESSION NO--AP0107296

UNCLASSIFIED

2/2 025

CIRC ACCESSION NO--AP0107296

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANNEALED (1600-1950DEGREES) SAMPLES OF V CARBIDE WERE STUDIED BY X RAY DIFFRACTION. AT 43-5 AT. PERCENT C CONTENTS, THE SAMPLES HAVE A STRUCTURE OF NaCl TYPE ONLY; FOR C IS GREATER THAN 45 AT. PERCENT, SOME VERY WEAK REFLECTION LINES, THE INTENSITY OF WHICH ARE MAX. FOR THE COMPN. VC SUBO TIMES 88, WERE ALSO OBSD. IN THE DIFFRACTION PATTERNS. FOR THE INTERPLANAR DISTANCES OF THE CUBIC UNIT CELL, ALPHA EQUALS 8.334. IN AGREEMENT WITH D. (EXPTL.) EQUALS 5.67, 32 V ATOMS AND SIMILAR TO 28 C ATOMS OCCUR IN THE UNIT CELL OF VC SUBO TIMES 88, SPACE GROUP P4 SUB1 32 (P4 SUB3 32). THE COMPLEMENTARY REFLECTIONS SHOW AN ORDERED DISTRIBUTION OF VACANCIES IN THE SUBLATTICE OF C WITH DOUBLED LATTICE PARAMETER (ALPHA EQUALS 2A SUB1) AND ALSO SLIGHT SHIFTS (0.07-0.08 ANGSTROM) OF V NEAREST OF THESE VACANCIES IN THE DIRECTION OF A VACANCY NODE. THE SAME TYPE OF DIFFRACTION SPECTRUM OF COMPLEMENTARY REFLECTIONS, WAS OBSD. ALSO FOR THE CONCNS. VC SUBO TIMES 82 MINUS VC SUBO TIMES 88.

UNCLASSIFIED

USSR

UDC 539.3:534.1

KOCHERGIN, Yu. G., FAKEYEV, N. P., ALESHIN, N. N.

"Experimental Study of Vibrations of Foundations Joined by a Reinforced Concrete Plate"

V sb. Issled. po stroit. konstruktsiyam (Studies in Structural Designs -- Collection of Works), Tomsk, Tomsk University, 1972, pp 66-77 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V238)

Translation: The results of experimental studies on vibrations of foundations of pillars after their ends are joined by reinforced concrete plates are discussed. The reason for initiating the study was to determine the extreme vibrations of foundations of pillars and building structures. The reason for these vibrations was irrigation of the area which brought on a drop in the rigidity of the foundation. It is noted that the joining of the pillar foundations by reinforced concrete plates did not give the expected results. The experimental data obtained require careful processing. O. V. Luzhin.

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FARHRUTDINOV

Acc. Nr: **AP0053460**

Abstracting Service:  
CHEMICAL ABST.

Ref. Code:  
**4R0366**

**5/70**

110715f Synthesis of 2-nitroisopropyl hemiformals. Fakhrutdinov, R. Z.; Burmistrov, V. I. (Kazan. Khim.-Tekhnol. Inst. im. Kirova, Kazan, USSR). Zh. Org. Khim. 1970, 6(2), 285-9 (Russ). The reaction of  $O_2NCH_2CHMe$  (I) with aq. HCHO [contg.  $HO(CH_2O)_nH$ ] gave  $O_2NCH_2CHMeO(CH_2O)_nH$  (II) ( $n$  is 1, 2, or 3). Similarly, the reaction of  $O_2NCH_2CHMeOH$  with aq. HCHO gave II. At higher temps. in the presence of  $p-MeC_6H_4SO_3H$  I reacted with HCHO to give  $H_2C(OCHMe-CH_2NO_2)_n$ .  
CPJR

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REEL/FRAME  
**19830485**

7

1/2 015  
UNCLASSIFIED  
PROCESSING DATE--20NOV70  
TITLE--EFFECT OF REACTION CONDITIONS ON THE PREPARATION OF NITRO ALCOHOLS.  
VI. HYDRATION OF CHLORO SUBSTITUTED NITRO OLEFINS -U-  
AUTHOR--(03)-BURMISTROV, V.I., FAKHRUTDINOV, R.Z., SAKHIBGARAYEVA, A.KH.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 915-17  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--HYDRATION, CHLORINATED ALIPHATIC COMPOUND, ORGANIC NITRO  
COMPOUND, BUTENE, BUTANOL, PROPYLENE, PROPANOL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3004/1942 STEP NO--UR/0080/70/043/004/0915/0917  
CIRC ACCESSION NO--AP0132203  
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132203

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE EFFECT OF TIME, TEMP., MOLAR RATIO OF THE REAGENTS, SOLVENTS, BASE AND ACID ADDNS. ON THE HYDRATION OF 1,1,1,TRICHLORO,3,NITRO,2,PROPENE (I) AND 1,1,1,TRICHLORO,3,NITRO,2,BUTENE (II) TO 1,1,1,TRICHLORO,3,NITRO,2,PROPANOL (III) AND 1,1,1,TRICHLORO,3,NITRO,2,BUTANOL (IV), RESP., WAS STUDIED. COMPARISON OF THE HYDRATION OF I AND II, NITROPROPYLENE SHOWED THAT THE REACTION EQUIL. WERE MORE FAVORABLE FOR THE HYDRATION OF I AT THE SAME TEMP. HOWEVER, THE RATE OF HYDRATION OF I WAS LOWER. THE USE OF DIOXANE OR ME SUB2 CO SOLVENTS GAVE A LOWER TEMP. HOMOGENEOUS PHASE REACTION. HOWEVER, THE HYDRATION OF I IN DIOXANE GAVE III SOLVENT ADDUCT, M. 98DEGREES, WHICH WAS STABLE UNDER REACTION CONDITIONS AND DECOMPD. ONLY AT 130DEGREES IN VACUO TO GIVE PURE III. THE ACIDS HAD LITTLE EFFECT ON THE HYDRATION OF I, EXCEPT AT HIGH CONCNS. OF THE STRONG ACIDS WHERE INHIBITION OCCURRED, A SLIGHT CATALYTIC EFFECT OF THE BASES WAS OBSD. IT WAS FOUND THAT THE HYDRATION OF I WAS BEST CARRIED OUT IN THE ABSENCE OF BOTH SOLVENT AND OTHER ADDITIVES. IN THE BEST RUN, VIGOROUS STIRRING OF 0.1 MOLE I WITH 1 MOLE II SUB2 O 10 HR AT 100DEGREES, FOLLOWED BY WORK UP GAVE 90PERCENT III, & SUB2S 102DEGREES, M. 45DEGREES. ATTEMPTS TO HYDRATE II WERE GENERALLY UNSUCCESSFUL, ONLY THE HYDRATION IN DIOXANE GAVE 5PERCENT IV, & SUB1 97DEGREES, N PRIME20 SUBD 1.5020, D PRIME20 1.5520. FACILITY: KAZAN. KHIM.-TEKHNOL. INST. I.M. KIROVA, KAZAN, USSR.

UNCLASSIFIED

USSR

UDC 621.371.332.2

TEPTIN, G. M., FAKHRUTDINOVA, A. N., Kazan' State University

"Study of Fading Radio Echoes from Meteor Trails. I"

Gorkiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 9, 1972, pp 1286-1292

Abstract: A study was made of the statistical characteristics of fading required both for practical applications using meteor scattering of radio waves and for theoretical constructions. An analysis was performed on experimental data on fading radio echoes from meteor trails measured on 800 and 1,600 km paths at frequencies of 40.3, 42.3, 57.4 and 44 megahertz and radar data at frequencies of 34 and 68 megahertz. The experimental statistical characteristics of the echoes are presented in the various stages of development of fading. The quantitative characteristics agree well with fading theory based on turbulence principles.

During the formation of fading, there is a tendency toward an increase in the probability of appearance of fading of a meteor radio echo of given duration with an increase in the radiation frequency used. The number of fading echoes decreases with an increase in depth of fading. The fading distribution as a function of the magnitude of the first periods is as follows:  
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TEPTIN, G. M., et al., Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol. XV, No 9, 1972, pp 1286-1292

at a frequency of 42.3 megahertz the mean period is  $\sim 0.27$  seconds, and at a frequency of 57.7 megahertz it is  $\sim 0.22$  seconds. For all the radio echoes, the spectral density increases with a decrease in frequency.

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- 59 -

FAKHRUTDINOVA, A. N.

HORIZONTAL STRUCTURAL WIND VELOCITY FUNCTION IN THE UPPER ATMOSPHERE  
UDC 551.508.314.551.557

Article by Candidate of Physical and Mathematical Sciences G. M. Tomlin, A. N. Fakhruddinova, Kazan' State University; Moscow, Meteorologiya i Gidrologiya, Известия, No 2, 1972, submitted 5 July 1971, pp 104-106]

A study was made of the horizontal structural function at altitudes of 80-100 km in the scale range of 5-200 km with respect to radio reflections from meteor trails obtained on a radar with an angle range. The maximum horizontal scale of the turbulence was 30-40 km; the anisotropy of the structural function was established relative to the mean wind direction.

One of the most important properties of the radioecho method of studying atmospheric movements by comparison with other methods is the possibility of investigating large-scale turbulence. In this paper a study is made of the properties of the spatial structural function  $D_{ij}(r)$  for the medium and large scales.

$$D_{ij}(r) = |U_i(x+y) - U_j(x)U_j|$$

where  $U_i(x), U_j(y)$  are the projections of the wind velocity in the horizontal plane in the direction of the radar at points with a relative distance  $r$ .

Knowing the coordinate of the reflecting points, it is possible to determine  $r$  by the formula

$$r = \sqrt{(R_1 \sin Z_1 \cos A_1 - (R_2 \sin Z_2 \cos A_2 + R_0 \sin Z_0))^2 + (R_1 \sin Z_1 \sin A_1 - (R_2 \sin Z_2 \sin A_2 + U_0 \sin Z_0))^2}$$

where  $R_1, A_1, Z_1$  are the range, azimuth, and zenith angle of the reflection points,  $U_0, U_0'$  are the projections of the mean velocity  $\bar{U}$  in the northerly and easterly directions.

APR 55-899  
5 May 72

1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--EFFECT OF A STONG, PULSED MAGNETIC FIELD ON MAGNETIC  
TRANSFORMATIONS IN MN SUB3 B SUB4 -U-  
AUTHOR--(02)-FAKIDOV, I.G., TIMOSHCHUK, V.I.  
COUNTRY OF INFO--USSR **F**  
SOURCE--FIZ. TVERD. TELA 1970, 12(1), 273-6  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS, PHYSICS  
  
TOPIC TAGS--MAGNETIC FIELD EFFECT, ANTIFERROMAGNETIC MATERIAL, MAGNETIC  
SUSCEPTIBILITY, MANGANESE COMPOUND, BORDON  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1980/0251 STEP NO--UR/0181/70/012/001/0273/0276  
  
CIRC ACCESSION NO--AP0048530  
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0048530

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM MEASUREMENTS OF MAGNETIC SUSCEPTIBILITY AND MAGNETIZATION USING A PULSED MAGNETIC BALANCE, THE DEPENDENCE WAS DETD. OF THE TEMPS. OF MAGNETIC TRANSFORMATIONS OF THE ANTIFERROMAGNETIC COMPD. MN SUB3 B SUB4 ON THE EXTERNAL MAGNETIC FIELD. FROM THE EXPT. RESULTS A MAGNETIC PHASE DIAGRAM WAS CONSTRUCTED.



Acc. Nr: AP0037232

Ref. Code: UR 0391

PRIMARY SOURCE: Gigiyena, Truda i Professional'nyye  
Zabolevaniya, 1970, Nr 2, pp 37-40

| PROBLEMS OF INDUSTRIAL HYGIENE IN THE PRODUCTION OF HIGH-GRADE  
COMMERCIAL GLASS

Suponitskiy, M. Ya.; Shelyfman, F. M.; Zelentsova, S. P.;  
Faktorov, I. Ye.; Tupchiy, Ye. P.; Voloshina, E.I.; Levin, M. V.

Summary

Pollution of atmospheric environment with arsenous acid anhydride, lead, manganic oxide and other substances is possible in production of high-grade commercial glass. Workers engaged in the latter are, at the same time, exposed to the effect of infrared radiation, elevated air temperature, noise, vibration. They demonstrate physiological shifts of thermoregulation and the incidence of affections implicating cardiovascular system, digestive organs, etc is elevated among them. The authors suggested a number of measures aimed at improving hygienic conditions of work, some of which had been implemented. |

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D.n.

REEL/FRAME  
19730157

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1/2 045 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--NEW SYNTHETIC HEAT AND SOUND INSULATING MATERIAL ISOKAPRON -U-

AUTHOR--(03)--TAUBIN, M.G., VAPNIK, Z.A., FAKTOROVICH, L.M.

COUNTRY OF INFO--USSR

SOURCE--STRIT. MATER. 1970, (3), 27-8

DATE PUBLISHED-----70

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

TOPIC TAGS--CAPRONE, POLYAMIDE RESIN, VARNISH, ACOUSTIC INSULATION, HEAT  
INSULATION, CONSTRUCTION MATERIAL, AIRCRAFT MATERIAL/(U)ISOKAPRON  
INSULATING MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1241

STEP NO--UR/0228/70/000/003/0027/0028

CIRC ACCESSION NO--AP0128657

UNCLASSIFIED

2/2 045

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128657

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ISGKAPRON (I) (A MIXT. OF TWISTED AND STRAIGHT KAPRON (II) FIBERS BONDED WITH A POLYAMIDE VARNISH) WAS OBTAINED FROM CURLY II FIBER BY PRODUCTS. I CAN BE EXTENSIVELY USED IN THE CONSTRUCTION AND AIRCRAFT INDUSTRIES FOR HEAT AND SOUND INSULATION.

UNCLASSIFIED

USSR

UDC: 533.69.01+533.662.013

VOLOBUYEV, A. N., FAKTOROVIN, I. O.

"Investigation of Conditions of Stoppage of a Lifting Rotor With Hinged Vanes in Horizontal Flight"

Uch. zap. Tsentr. aerofidrodinam. in-ta (Scientific Notes of Central Aerohydrodynamics Institute), 1972, 2, No 5, pp 109-111 (from RZh-Mekhanika, No 5, May 72, Abstract No 5B388)

Translation: The paper outlines the procedure and the principal results of mathematical modeling on an analog computer to simulate flywheel motion in the thrust plane of an absolutely rigid blade of the lifting rotor of a helicopter fastened in a horizontal hinge by means of an elastic element. An investigation was made into safe conditions for reducing the angular velocity of rotation of the lifting rotor to 1 rad/s; at the same time, a parametric estimate was made of the way that flywheel motion of the blade is affected by the angle of attack and overall pitch of the rotor, the mass characteristics of the blade, the velocity of horizontal flight of the helicopter, and the rigidity of the horizontal hinge. The aerodynamic load of the blade was determined on the basis of the classical theory of a lifting

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1/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--USE OF A COMPUTER TO CALCULATE SECOND MOMENTS OF EXPERIMENTAL NMR SPECTRA -U-

AUTHOR--(04)-FALALEYEV, O.V., FALALEYEVA, L.G., LUNDIN, A.G., GURYEVICH, A.S.

COUNTRY OF INFO--USSR

F

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 249

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NMR SPECTRA, COMPUTER CALCULATION, SPECTRUM ANALYSIS, MATHEMATIC MODEL, AUTOCORRELATION FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1553

STEP NO--UR/0120/70/001/000/0249/0249

CIRC ACCESSION NO--AP0106299

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106299

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ORDER TO FIND THE OPTIMUM METHODS FOR SPECTRUM PROCESSING WITH BACKGROUND NOISES THEIR MATH. MODELS WERE USED. THE MODELS OF THE NMR SPECTRA WERE SELECTED IN THE FORM OF A GAUSSIAN CURVE AND ALSO AS AN UNRESOLVED DOUBLET. THE NOISES WERE MODELED AS A SERIES OF ORDINARY NOS. WITH AN AUTOCORRELATION FUNCTION  $K(\tau) = \sigma^2 \exp(-\tau/\tau_c)$  WHERE  $\sigma$  IS ROOT MEAN SQUARE VALUE OF THE NOISES,  $\tau_c$  IS CONST. OF TIME FOR THE FILTER OF LOWER FREQUENCIES AT THE RADIOSPECTROMETER EXIC. THE 2ND MOMENT WAS CALCD. ACCORDING TO THE ABSORPTION CURVE WHICH WAS REGENERATED BY INTEGRATION OF THE DERIV. FACILITY: INST. FIZ., KRASNOYARSK, USSR.

UNCLASSIFIED

1/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--USE OF A COMPUTER TO CALCULATE SECOND MOMENTS OF EXPERIMENTAL NMR SPECTRA -U-

AUTHOR--(04)-FALALEYEV, O.V., FALALEYEVA, L.G., LUNDIN, A.G., GURYEVICH, A.S.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 249

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NMR SPECTRA, COMPUTER CALCULATION, SPECTRUM ANALYSIS, MATHEMATIC MODEL, AUTOCORRELATION FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1553

STEP NO--UR/0120/70/Q01/000/0249/0249

CIRC ACCESSION NO--AP0106299

UNCLASSIFIED

F

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106299

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ORDER TO FIND THE OPTIMUM METHODS FOR SPECTRUM PROCESSING WITH BACKGROUND NOISES THEIR MATH. MODELS WERE USED. THE MODELS OF THE NMR SPECTRA WERE SELECTED IN THE FORM OF A GAUSSIAN CURVE AND ALSO AS AN UNRESOLVED DOUBLET. THE NOISES WERE MODELED AS A SERIES OF ORDINARY NOS. WITH AN AUTOCORRELATION FUNCTION  $K(\tau) = \sigma^2 \exp(-\tau/\tau_c)$  WHERE  $\sigma$  IS ROOT MEAN SQUARE VALUE OF THE NOISES,  $\tau_c$  IS CONST. OF TIME FOR THE FILTER OF LOWER FREQUENCIES AT THE RADIOSPECTROMETER EXIC. THE 2ND MOMENT WAS CALCD. ACCORDING TO THE ABSORPTION CURVE WHICH WAS REGENERATED BY INTEGRATION OF THE DERIV. FACILITY: INST. FIZ., KRASNOYARSK, USSR.

UNCLASSIFIED



1/2 008 UNCLASSIFIED PROCESSING DATE--19SEP70  
TITLE--OXIDES 2, ALLYLBORNEGL OXIDE AND ITS REACTION WITH SOME AMINES AND  
NITROGEN CONTAINING HETEROCYCLIC COMPOUNDS -U-  
AUTHOR--(02)-PANSEVICHKOLYADA, V.I., FALALEYEVA, L.N.

COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. KHIM. NAVUK 1970, (1), 106-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, AGRICULTURE

TOPIC TAGS--PROCESSED PLANT PRODUCT, EPOXY COMPOUND, ORGANIC OXIDE, AMINE  
DERIVATIVE, HETEROCYCLIC NITROGEN COMPOUND, IMIDAZOLE, AZO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1987/1077

STEP NO--UR/0419/70/000/001/0106/0108

CIRC ACCESSION NO--AP0104475

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--13SEP70

CIRC ACCESSION NO--A0104475

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KEEPING 30 G 2, ALLYLBORNEOL WITH  
17 G 78PERCENT ACOOH 10 DAYS GAVE 55.8PERCENT  
2, (2,3, EPOXYPROPYL) BORNEOL, B SUB2 123.5-4.5DEGREES, N PRIME20 SUBD  
1.4963, D PRIME20 1.0469. THIS KEPT WITH AMINES SEVERAL DAYS OR HEATED  
SEVERAL HR ON A STEAM BATH (C SUB5 H SUB11 NH SUB2 AND PIPERIDINE  
REQUIRED 2 HR AT 120DEGREES TO COMPLETE THE REACTION), GAVE 24-60PERCENT  
FOLLOWING 2, (3, (R SUBSTITUTED), 2, HYDROXYPROPYL) BORNEOLS: (R SHOWN):  
ETNH, M. 110DEGREES; ET SUB2 N, B SUB4 159-61DEGREES, N PRIME20 SUBD  
1.4880, D PRIME20 0.9798; C SUB5 H SUB11.NH, B SUB2 193DEGREES, N  
PRIME50 SUBD 1.4810, D PRIME50 0.9695; PIPERIDINO, B SUB2  
193-3.5DEGREES, N PRIME50 SUBD 1.4900, D PRIME50 1.0075; PHNH, M.  
85-7DEGREES; 2, BENZIMIDAZOLYL, M. 154-5DEGREES; AND 2, BENZOTRIAZOLYL, M.  
169DEGREES.

UNCLASSIFIED

USSR

UDC 669.285'27:620.17

PAVLOV, I. M., ~~FALALEYEVA, Z. S.~~, MAKUNIN, M. S., and SHELEST, G. Ye.,  
Institute of Metallurgy, Academy of Sciences USSR

"Effect of Tungsten on Structure and Properties of Electron-Beam-Melted  
Molybdenum"

Vliyaniye vol'frama na strukturu i svoystva molibdena elektronoluchevoy  
plavki (cf. English above), Moscow, 1971, 13 pp, ill, bibliography with 12  
titles, No 3334-71 Dep (from RZh-Metallurgiya, No 1, Jan 72, Abstract No  
II779 DEP by authors)

Translation of Abstract: The authors investigated vacuum-melted Mo with  
0.7-10% W. Ingots were processed by extrusion through an eyelet. The  
microhardness of as-cast and as-deformed alloys was determined. The mechani-  
cal properties of alloys (short-term fracture) were determined at 500, 600,  
700, and 1000°. The minimum microhardness for cast alloys is obtained with  
0.7-2.0% W. To judge by microhardness, all melts after extrusion were more  
homogeneous than as-cast. Softening of the investigated alloys occurs in  
the 700-1000° range. The optimum combination of strength and plastic prop-  
erties at room temperature is observed in the alloy with 2% W. Three  
illustrations. Bibliography with 12 titles.  
1/1

USSR

UDC 621.385.032.24

F  
FALALEYEVA, Z. S., SHELEST, A. YE.

"Method of Evaluation of Durability of Multi--Cross Piece Grid of Molybdenum Wire"

V sb. Plastich. deformatsiya tugoplavk. met. i spets. splavov (Plastic Flow of Refractory Metals and Special Alloys--Collection of Works), Moscow, "Nauka," 1970, pp 22-25 (from RZh--Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A98)

Translation: Multi-cross piece grids of the "stocking" type for electron tubes are produced from small-diameter molybdenum wire, direct determination of the durability characteristics of which is very difficult. In addition, in the process of manufacture of the grid cross piece and winding of the wire, various technological operations (heat treatment, deposition of coating, and soldering) are undergone, which effect the character of the finished grids. In order to evaluate the quality of grids of the "stocking" type, a method is proposed for checking them on a micromachine by bending between two mandrels. A description is given of the behavior of the grid during the recommended test method, and the character of the deformation of the individual components for construction of the grid is analyzed. Formulas are derived for determining the breaking force relative to one cross piece of the load corresponding to the start of breakdown of the grid and which is recorded at the testing machine. In the Novosibirsk Electrovacuum Institute, 1/2

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FALALEYEVA, Z. S., SHELEST, A. YE, Plastich. deformatsiya tugoplavk. met. i spets. splavov, 1970, pp 22-25 (from RZh--Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A98)

tests were conducted by the proposed method of finished grids of the "stocking" type, the results of which conformed well with the results of tests on the durability during stretching of individual wires. 1 ill. 2 ref. Summary.

2/2

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USSR

UDC 548.52

BRUK, V. B., BYKHOVSKIY, A. I., LARIKOV, L. N., and FAL'CHENKO, V. M.

"The Effect of the Geometry of Growth of  $\alpha$ -Sn Crystals on the Kinetics of Transformation of White Tin Into Gray"

Kiev, Metallofizika, No 32, 1970, pp 113-118

Translation: The general kinetics of the  $\beta \rightarrow \alpha$  transformation of the high-purity OVCh-000 (99.9995%) tin on specimens of various forms, i.e., massive in the form of small cubes, plates, and wire, was investigated by the method of hydrostatic weighing.

The overall rate of the polymorphic  $\beta \rightarrow \alpha$  transformation adheres to Avrami's equation

$$X = 1 - \exp(-At^k),$$

where X is the share of the transformed volume; A and k are the constants. At the same time, k depending on the form of specimens assumes various values: 2.3-2.7 for massive specimens, 1.5-2 for specimens in the form of plates, and 1 for the specimens in the form of wire of a diameter less than 0.8 mm.

1/1

- 75 -

USSR

UDC 539.219.3:548.3

LARIKOV, L. N., FAL'CHENKO, V. M., and CHERNAYA, L. F., Institute of Metal Physics, Academy of Sciences UkrSSR

"The Effect of the Type of a Crystal Lattice on the Diffusion Mobility of Atoms in Metals of the Iron Group"

Kiev, Metallofizika, No 31, 1970, pp 75-82

Translation: The effect of the type of crystal lattice on the parameters of volume and boundary diffusion in metals of the iron group and their alloys is examined on the basis of the data available in the literature. It is shown that the difference between the mobility in  $\alpha$ - and  $\gamma$ -iron is much greater than among the mobility in close-packed cubic modifications of  $\delta$ -iron, nickel, and  $\gamma$ -cobalt during the extrapolation of their values to the same temperature. In general, this conclusion also extends to the diffusion of other elements in these metals. The type of crystal lattice has a marked effect on the parameters of volume self-diffusion and has a weak effect on the mobility of atoms along grain boundaries.

Bibliography: 48 entries, 12 illustrations.

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- 71 -

USSR

UDC 621.791:546.621:532.72

LARIKOV, L.N., FAL'CHENKO, V.M., RYABOV, V.R., LOZOVSKAYA, A.V., KRAVCHENKO, A.G., and YEREMINA, A.N.

"Determination of Aluminum Self-Diffusion in Intermetallics Formed During Welding"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 71, pp 71-72

Abstract: In the present work, conducted by the Institute of Electric Welding jointly with the Institute of Metal Physics, Academy of Sciences Ukrainian SSR, with the use of isotope  $Al^{26}$  self-diffusion was studied in samples of pure aluminum and Fe-Al alloys having the following intermetallic phases:  $FeAl_3$ ,  $FeAl$ ,  $Fe_3Al$ ,  $Fe_2Al_5$ , and  $FeAl_2$ . Equations for the temperature relationship of self-diffusion coefficients were derived. 1 table, 2 bibliographical references.

1/1

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Acc. Nr.: 170046538

Ref. Code: U.S.C. 146

USSR

F

UDC 62 - 501.12

FALDIN, N.V.

"Time Optimal Control of Linear Plants with Limited Phase Coordinates"

Optimal'noye po vremeni upravleniye lineynymi ob'yektami pri ogranichennykh fazovykh koordinatakh (cf. English above), Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priboro-stroyeniye, 1970, No 1, pp 53-57

Translation:

Considered is the application of the optimality conditions to the synthesis of optimal response control of linear plants in problems with limitations on the phase coordinates. New necessary optimality conditions are formulated for the case of "nonregular" limitations.

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USSR

UDC 620.193.01

VODYANOV, YU. M., KONYAYEV, B. YA., and FALICHEVA, A. I., Voronezh Polytechnic Institute, Voronezh State Pedagogical Institute

"Effect of Ultrasound on Cathodic Processes on Iron and Nickel"

Moscow, Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 296-298

Abstract: The authors studied the effect of an ultrasonic field on cathodic reactions under aeration conditions and in an inert gas atmosphere, specifically the behavior of iron (0.08 percent C) and nickel (NP-2) in 1n.  $H_2SO_4$  at 30°. There was found to be a shift in the corrosion potential of both metals and a significant increase in corrosion losses in the aerated acid with the application of the ultrasonic field. This is due mainly to an increase in the acid ionization rate as a result of intensive stirring of the solution. Under the action of ultrasound the self-dissolution rate of iron in the presence of air is about double that of nickel.

1/1

- 13 -

1/2 029 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--CHROMIUM PLATING IN A PERCHLORATE ELECTROLYTE -U-  
AUTHOR--(02)-FALICHEVA, A.I., IONOVA, I.G. F  
COUNTRY OF INFO--USSR  
SOURCE--ZASHCH. METAL. 1970, 6(2), 191-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CHROMIUM PLATING, PERCHLORATE, ELECTROLYTE, CATHODE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1996/1910 STEP NO--UR/0365/70/005/002/0191/0195  
CIRC ACCESSION NO--AP0118872  
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118872

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING PROBLEMS WERE STUDIED IN THE INVESTIGATION OF CR PLATING ON A CU, NI, AND STEEL CATHODES IN CR(CLO SUB4) SUB3 SOLN. WITH (NH SUB4) SUB2 CO SUB3 AND HCL AS PH REGULATORS: BUFFERING CAPACITY, SURFACE TENSION, SPECTRA OF LIGHT ABSORPTION, PH OF THE NEAR CATHODE LAYER, AND STABILITY OF THE PERCHLORATE ELECTROLYTE. ALSO THE EFFECTS OF CATHODE C.D., ACITITY, TEMP., AND QUALITY OF CR PLATINGS WERE EXAMD. THE BEST CR DEPOSITS WERE OBTAINED AT CATHODE C.DS. OF 20-30 A-DM PRIME2, PH 0.65 PLUS OR MINUS 0.05, AND TEMP.20-25DEGREES ADDNS. OF UREA (2M), NH SUB4 BF SUB4 (0.3M), AND ALPHA,ALANINE (0.5 G-1.) INCREASE THE BUFFERING CAPACITY OF ELECTROLYTE OVER A WIDE RANGE OF PH AND CURTAILS THE FORMATION OF SOLID PHASE CR(OH) SUB3. FACILITY: VORONEZH. POLITEKH. INST., VORONEZH, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--THE SURGICAL TREATMENT OF REGIONAL METASTASES OF CANCER OF THE  
UPPER RESPIRATORY TRACT -U-  
AUTHOR--(03)-PACHES, A.I., FALILEYEV, G.V., MATYAKIN, YE.G.  
COUNTRY OF INFO--USSR  
SOURCE--VESTNIK OTORINOLARINGOLOGII, F1970, NR 3, PP 72-76  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--SURGERY, METASTASIS, CANCER, RESPIRATORY SYSTEM, LYMPHATIC  
SYSTEM, VEIN, NERVE  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1989/1250 STEP NO--UR/0607/70/000/003/0072/0076  
CIRC ACCESSION NO--AP0107726  
UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70  
CIRC ACCESSION NO--AP0107726  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS A DESCRIPTION OF THE OPERATION OF FACIAL SHEATH REMOVAL OF THE CELLULAR TISSUE OF THE NECK IN METASTASES OF MALIGNANT TUMORS OF THE UPPER RESPIRATORY TRACT. ITS ADVANTAGE OVER CRILE'S OPERATION CONSISTS IN THAT IT PRESERVES THE INTERNAL JUNGULAR VEIN, THE STERNOCLEIDOMASTOID MUSCLE AND ACCESSORY NERVE. THIS PRODUCES BETTER FUNCTIONAL AND COSMETIC RESULTS. THIS TYPE OF OPERATION MAY BE PERFORMED IN CLINICALLY OBSCURE METASTASES OR MOBILE LYMPH NODES NONADHERED TO THE MUSCLE AND VEIN. THE OPERATION MAY BE EFFECTED SIMULTANEOUSLY FROM BOTH SIDES. THIS TYPE OF OPERATION BY ITS RADICAL CHARACTER IS NOT INFERIOR TO CLILE'S OPERATION. FROM 1965 THE AUTHORS PERFORMED 117 SUCH OPERATIONS IN 104 PATIENTS WERE FOLLOWED UP (28 OF THEM OVER THREE YEARS)--RELAPSES OF REGIONAL METASTASES WERE NOTED IN 7.4 PER CENT OF CASES. FACILITY: OTD. OPUKHOLEY GOLOVY I SHEI INSTITUTA EKSPERIMENTAL'NOY I KLINICHESKOY ONKOLOGII AMN SSSR AND KAFEDRY ONKOLOGII TSENTRAL. INST. USOVERSHENSTVOVANIYA VRACHEY.

UNCLASSIFIED

USSR

UDC 613.644-073.43-78

CHUMAK, P. N., MININ, B. A., and FALIN, N. I., Moscow

"An Instrument for Integral Hygienic Assessment of Noises"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1973, pp 48-50

Abstract: A noise exposure meter developed by the authors (Inventor's Certificate No 290305) can be used to register noise produced within a large area or that experienced by a single worker over long periods of time without attendance. It employs a mercury capillary coulometer-integrator as the memory. An amplifier need not be used at noise levels above 100 db. Tests with the meter showed that it has a sensitivity of 10  $\mu$ amps at 100 db and can be used continuously at this level for 680 hours. Cumulative noise is read out in arbitrary units or in  $\mu$ w/hr/cm<sup>2</sup>. The integral noise assessment criterion provided by this instrument would be of value in public health studies when combined with the noise characteristics utilized traditionally (intensity, spectrum).

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USSR

UDC: 535.853.225:535.317.1

PARITSKAYA, G. G., FAL'K, T. K.

"Investigation of Image Quality in the DFS-12 and DFS-32 Spectrometers"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 11, Nov 70, pp 20-23

Abstract: A new method is proposed for calculating the "instrument function" of monochromators in the case of long thin slits. The instrument function of a monochromator is the change in the radiant flux which passes through the output slit as it moves over the width of the monochromatic image of the input slit. The instrument function calculated for DFS-12 (DFS-32) spectrometers by the proposed procedure agrees satisfactorily with the experimentally determined function, both with respect to the shape of the curve and its width.

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- 147 -



USSR

UDC: 681.3.06:51

FAL'K, V. N.

"On a Language of Functional Abstractions"

V sb. Tsifr. vychisl. tekhnika i programir. (Digital Computer Technology and Programming--collection of works), vyp. 6, Moscow, "Sov. radio", 1971, pp 111-118 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V703)

Translation: A language of functional abstractions is proposed which can be used as a base language in constructing an internal computer language, and may also find application in investigation of problems of formalizing the semantics of languages for programming.

1/1

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USSR

UDC 632.95

AREN, A. K., ~~FAL'KENSHTEYN, R. Yu.~~, ZELMEN, V. N., YEGOROVA, L. V., OZOLIN', R. R., POPLAVSKAYA, N. I., and SHOFRO, E. A., Institute of Organic Synthesis, Academy of Sciences Latvian SSR

"Method of Preparing 2-( $\alpha$ -phenyl- $\alpha$ - $\rho$ -fluorophenylacetyl)-1,3-indandione"

USSR Authors' Certificate No 263586, filed 14 Nov 67, published 4 Jun 70 (from RZh-Khimiya, No 1, 10 Jan 71, Abstract No 1N531P)

Translation: A mixture of 4.5 g metallic Na is heated at 130-140° in 50 ml anhydrous PhMe, 45 ml anhydrous MeOH is then added dropwise to the mixture. The mass is heated on an oil bath for 1-1.5 hr with intensive stirring, evaporated, and the residue cooled to 80° and treated with 150 ml anhydrous C<sub>6</sub>H<sub>6</sub> and 20 g dimethyl phthalate. A mixture of 11.25 g freshly prepared phenyl-fluorophenylacetone in 50 ml anhydrous C<sub>6</sub>H<sub>6</sub> is added dropwise over the space of 1 hr to the reaction mass, with a 50 ml mixture of C<sub>6</sub>H<sub>5</sub> and MeOH distilled off at the same time. Then once more a mixture of 11.25 g freshly prepared 2-phenyl-2- $\rho$ -fluorophenylacetone and 4 g anhydrous dimethyl phthalate in 50 ml anhydrous C<sub>6</sub>H<sub>6</sub> is added dropwise, with 50 ml of solvents being distilled off. During condensation oil bath temperature is 118-120°. After components are mixed, the mixture is stirred for 10 hr at 118-120°,  
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USSR

Aren, A. K., et al., USSR Authors' Certificate No 263586, filed 14 Nov 67, published 4 Jun 70 (from RZh-Khimiya, No 1, 10 Jan 71, Abstract No IN531P)

evaporated at 11-15 mm; the oily residue is treated with 800 ml cold water, and heated with stirring. The layer of water is decanted, and the crystalline residue treated analogously three or four times with water until it dissolves completely. Combined water layers are treated with 40 ml dilute HCl (acid, 1:1) until the reaction of the medium is acid, are stirred, kept for ~12 hr, and decanted. The amorphous residue is treated with 80 ml hot iso-PrOH and stirred. A yellow precipitate is filtered off, which is rinsed two or three times with 10 to 15 ml portions of cold iso-PrOH, to yield 15 g (42.5%) 2-( $\alpha$ -phenyl- $\alpha$ - $\rho$ -fluorophenylacetyl)-1,3-indandione (I), melting point 121-5°. The isopropyl mother liquors are diluted with 100-150 ml water and decanted; the oily residue is treated with 5 ml HCL (acid, 1:1), to yield, as described above, an additional 3 g (8.5%) I. I possesses a broad spectrum of zoocidal action.

2/2

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1/2 016

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--2, ALPHA, PHENYL, ALPHA, P, FLUOROPHENYL, ACETYL, 1, 3, INDANDIONE -U-

AUTHOR--(05)-AREN, A.K., ZELMEN, V.N., OZOLIN, R.R., SHAFRO, E.A.,  
FALKENSHTEYN, B.YU.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,586

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, AROMATIC KETONE, CHEMICAL PATENT, CHEMICAL  
SEPARATION, FLUORINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3006/1587

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0135228

UNCLASSIFIED