"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC 615.917

VAYTEKUNENE, D. I.

"Characteristic Features of the Estrous Cycle of White Rats under the Effect of Tetramethylthiuram Disulfide"

V sb. Vopr. epidemiol. i gigieny v LitSSR (Problems of Epidemiology and Hygiene in the Lithuanian SSR -- collection of works), Vil'nus, 1971, pp 147-151 (from RZh-Farmakologiya. Khimiterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72, Abstract No 2.54.806)

Translation: Rats were injected intraventricularly daily for four months with tetrathiuram disulfide (I) in doses of 1/50 DL_{50} (10.2 mg/kg; first group) and 1/100 DL_{50} (5.1 mg/kg; second group). At the end of the first month, an increase in duration of the estrous cycle which intensified for two months was noted in the animals of the first group. In the majority of rats the prolonged rut converted to long rest periods. In the first group in the second month of poisoning, out of 38 females 17 failed to have normal cycles, in the third month 12, in the fourth month 10, and in the second group, 13, 8 and 2, respectively. After a 2 month recovery period, the basic indexes in the estral cycle had failed to normalize.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC 615.917

VAYTEKUNENE, D. I.

"Change in the Refenerative Function of the Ovaries of White Rats Under the Effect of Tetramethylthiuram Disulfide"

V sb. Vopr. epidemiol.i gigiyeny v LitSSR (Problems of Epidemiology and Hygiene in the Lithuanian SSR -- collection of works), Vil'nus, 1971, pp 144-147 (from RZh-Farmakologiya. Khimiterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72, Abstract No 2.54.805)

Translation: In rats ♀ ♀ a study was made of the regenerative function of the ovaries in the case of single and multiple intraperitoneal injection of tetramethylthiuram disulfide (I). For a single injection of I in a dose of 128 mg/kg no authenic variations in the quantitative composition of the regenerative elements of the ovaries were detected. On injection of I in a dose of 0.4 mg/kg for 4 months, changes were detected in the quantitative composition of the structural-functional elements of the ovary. The processes of maturing of the follicles were disturbed, and as a result of intensified atresia, impoverishment of the ovaries with respect to functionally active elements took place.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC: 519.2

VAYTKUS, P.

"Concerning Large Deviations of Sums of Random Quantities in the Case of a Robust Limiting Law"

Lit. mat. sb. (Lithuanian Mathematics Collection), 1971, 12, No 1, pp 85-97 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V48 [author's abstract])

Translation: Let ξ_i, $i = 1, 2, \ldots$, be a sequence of independent random quantities with distribution functions $G_i(x)$ which belong to the region of normal gravitation of the robust laws $G_{\alpha j}(x)$ $(0 < \alpha < 1,\ \beta = 1)$ for which

$$R_{\alpha j}(h) = \int_{-\infty}^{\infty} \exp\{hx\}\, dG_{\alpha j}(x) = \exp\{-\lambda_j h^{\alpha}\},\ \lambda_j > 0.$$

Let us use $F_n(x)$ and $\nu_n(x)$ to designate the distribution function and density of the normalized sum

$$S_n = \frac{\xi_1 + \ldots + \xi_n}{B_n},$$

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USSR

VAYTKUS, P., Lit. mat. sb., 1971, 12, No 1, pp 85-97

where

$$B_n^\alpha = \sum_{j=1}^{n} \lambda_j.$$

Asymptotic representations are found for $\nu_n(x)$ and $1 - F_n(x)$ where $n \to \infty$ uniformly with respect to x on the interval

$$R_j(h) = \int_{-\infty}^{\infty} e^{hx} dG_j(x) < \infty,$$

assuming that the following exist: a number $0 < B < \infty$ such that $g_j(x) = \frac{dG_j(x)}{dx}$, when $0 < h < B$, densities

$$-C \leqslant x < B_n^{-1} \sum_{j=1}^{n} A_j.$$

of the constant C_j such that $g_j(x) \leqslant C_j < \infty$, $j = 1, 2, 3, 4$, and $\lim_{h \uparrow B} \ln R_j(h) = A_j < \infty$. In the case $1 \leqslant \alpha < 2$, $\beta = 1$, large deviations

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USSR

VAYTKUS, P., Lit. mat. sb., 1971, 12, No 1, pp 85-97

were considered by V. M. Zolotarev (RZhMat, 1963, 5V106) and A. K. Aleshkyavichene (RZhMat, 1964, 7V35).

3/3

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

VAYTKUS, P. S.

"Local Limit Theorems for Great Deviations of Sums of Independent Random Discrete Quantities"

Lit. Mat. Sb. [Lithuanian Mathematics Collection], 1972, Vol 12, No 4, pp 15-25 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V60, by the author).

Translation: Let $\xi_i = 1, 2, \ldots, n$ be a sequence of independent random discrete quantities with distribution functions $F_i(x)$, belonging to the normal area of attraction of stable rules $G_{a_i}(x)(0 < \alpha < 2, \alpha \neq 1, \beta = -1)$. Limit theorems are produced, considering great deviations, which are extended to the discrete case of the theorem of V. M. Zolotarev (RZhMat, 1963, 5V106) and A. K. Aleshkyavichene (RZhMat, 1964, 7V55).

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC 621.315.592

BALTRAMEYUNAS, R., SAKALAS, A., STORASTA, YU., VAYTKUS, YU. [Vilnus State University imeni V. Kapsukas]

"Special Features Of Conduction In Ge Under Excitation By A Neodymium Laser"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 760-762

Abstract: The effect was investigated of the surface on the photoconductivity of n-Ge (σ = 40 ohm^{-1}. cm^{-1}) at 300° K. The specimens had unit [blokovyy] contacts. The single crystals were excited by pulses of a neodymium laser ($h\nu$ = 1.17 e.v.; τ_u = 40 nanosec) operating in one transverse mode. Oscillograms of the photoconductivity in nonetched specimens of Ge are shown and a graph is presented of the dependence of photoconductivity on the intensity of the laser light. The results obtained give a basis for the assumption that excitation by short laser pulses can prove to be useful for investigation of surface phenomena. 2 fig. 5 ref. Received by editors, 13 Oct 1971.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

1/2 024 UNCLASSIFIED

TITLE--STATISTICS OF RECOMBINATION WITH THE PARTICIPATION OF EXCITONS AND LOCAL LEVELS -U-

PROCESSING DATE--30OCT70

AUTHOR-(02)-VAYTKUS, YU., VISHCHAKAS, YU.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(2), 571-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RADIATIVE RECOMBINATION, EXCITON ABSORPTION, PHOTOCONDUCTIVITY, CRYSTAL LUMINESCENCE, SEMICONDUCTOR BAND STRUCTURE, CARRIER DENSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1634

STEP NO--UR/0181/70/012/002/0571/0576

CIRC ACCESSION NO--AP0054480

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

2/2 024

UNCLASSIFIED

CIRC ACCESSION NO--AP0054480 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS STUDIED OF COMPETITION OF THE EXCITON MECHANISM OF RECOMBINATION AND RECOMBINATION THROUGH LOCAL LEVELS ON THE STEADY STATE CHARACTERISTICS OF PHOTOCOND. AND LUMINESCENCE. AN HOMOGENEOUS NONDEGENERATE SEMICONDUCTOR WAS CONSIDERED WITH A SPLIT VALENCE BAND. THE EFFECT ACCOUNTED FOR REPEATED ABSORPTION OF LUMINESCENT RADIATION AND FORMATION OF EXCITONS OF HIGHER SERIES. THE PARAMETRIC DEPENDENCES WERE OBTAINED FOR GENERATION AND RADIATION RATES WITH STEADY STATE CONCNS. OF NONEQUIL. CARRIERS. THE CASES OF THE GENERAL SOLN. ANALYZED ARE: (1) THE ABSENCE OF REPEATED ABSORPTION; (2) REPEATED ABSORPTION WITH ONLY 1 VALENCE BAND PARTICIPATING; (3) RADIATION OF EXCITONS OF THE 1ST SERIES IS NOT ABSORBED, BUT RADIATION OF THE 2ND SERIES IS ABSORBED TO A SIGNIFICANT EXTENT. FACILITY: VIL'NIUS. GOS. UNIV. IM. KAPSUKASA, VILNIUS, USSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

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TECHNICAL TRANSLATION

(165)

FSTC-HT-23-2015-72

29 Nov 72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV, SEPTEMBER 1968

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: I. A. DERYUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY IMENI T.G. SCHEVCHENKO

Translated for FSTC by ACSI

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The contents of this publication have been translated as presented in the original text. No attempt has been made to verify the accuracy of any statement contained herein. This translation is published with a minimum of copy editing and graphics preparation in order to expedite the dissemination of information.

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VAYTSEL

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

TECHNICAL TRANSLATION

165

FTD-HT-23-2015-72

29 Nov 72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV, SEPTEMBER 1968

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: I. A. DERYUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY IMENI T.G. SCHEVCHENKO

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Title Page

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC 577.1:615.7/9

ARETINSKIY, B. V. and VAYTSMAN, L. B.

"Age-Related Changes in Excretion of 17-Ketosteroids With Urine in Intact White Rats and in Rats Exposed to Quartz Dust"

Tr. Tsentr. n.-i. proyekt.-konstrukt. in-ta profilakt. pnevmonokoniozov i tekhn. bezopasn. (Works of the Central Research and Design Institute for the Prevention of Pneumoconiosis and Accidents), 1971, No 5, pp 150-154 (from RZh-Biologicheskaya Khimiya, No 24, Dec 72, Abstract No 24 F2269 by D. M. Glukharev)

Translation: Silicosis was induced in 3- 24-month-old rats by intratracheal injection of 75 mg of a suspension of fine quartz dust in 0.6 ml of physiologic saline. The excretion of 17-ketosteroids (17-K) with urine was found to increase with age in the intact rats: from 0.053 mg/day at age 3 months to 0.103 mg/day at age 12 months, after which it decreased (0.07 mg/day at age 24 months). Rats exposed to quartz dust at an early age (6 months) reacted with an increase in secretion of 17-K with urine. Mature animals (12 months), however, showed only an insignificant increase.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC: 621.396.2:551.510.52

BERNOSKUNI, Yu. V., VAYZBURG, G. M., GUSYATINSKIY, I. A., KOZLOV, V. V., NEMIROVSKIY, A. S., PLEKHANOV, V. V.

"Experimental Research on a New Method of Combatting Signal Fading on Long-Range Tropospheric Transmission Lines ('Accord')"

Tr. NII radio (Works of the Scientific Research Institute of Radio), 1972, No 1, pp 55-62 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract No 8A342)

Translation: The paper presents the results of experimental studies of the "Accord" system on a long-range ultrashort-wave tropospheric transmission line. The gain over standard quadrupled reception is determined. Resumé.

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1/2 016 UNCLASSIFIED

TITLE--WATER REPELLENT TREATMENT OF TEXTILE MATERIALS -U- PROCESSING DATE--16OCT70

AUTHOR-(04)-LAGZDINS, E., VAYVADS, A., CERINS, O., LEJINA, I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 260,607
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(4)
DATE PUBLISHED--06JAN70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--WATERPROOFING, TEXTILE, NICKEL COMPOUND, COBALT COMPOUND, AMMONIUM COMPOUND, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1161 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0116626

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

2/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0116626

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEXTILE MATERIALS ARE WATERPROOFED BY BEING TREATED WITH AQ. SOLNS. OF HEAVY METAL SALTS, SUCH AS NI OR CO AMMONIATES, AND WITH H SUB2 O-SOL. PRODUCTS, IN A BATH WITH A "SI-METAL RATIO" IS GREATER THAN OR EQUAL TO 6:1. FACILITY: INSTITUTE OF INORGANIC CHEMISTRY, ACADEMY OF SCIENCES, LATVIAN S.S.R.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

1/2 037

TITLE--IRON METAPHOSPHATE -U- UNCLASSIFIED PROCESSING DATE--23OCT70

AUTHOR-(04)-TRUSHINSKA, V.A., KONSTANTS, Z., BURTNIYEKS, U., KAYYADS, A.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 113-14

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOSPHATE, IRON COMPOUND, X RAY ANALYSIS, IR ANALYSIS, THERMAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0022 STEP NO--UR/0464/70/000/001/0113/0114

CIRC ACCESSION NO--AP0119018

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

2/2 037 UNCLASSIFIED

CIRC ACCESSION NO--AP0119018 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPD. CORRESPONDING TO THE RATIO FE SUB2 O SUB3 .3.1P SUB2 O SUB5 .6.1H SUB2 O WAS PREPD. FROM A MIXT. OF FEPO SUB4 .2H SUB2 O AND H SUB3 PO SUB4 KEPT 6 WEEKS AT 15DEGREES. THE COMPD. WAS STUDIED BY MEANS OF DTA, IR, AND X RAY ANAL.

FACILITY: INST. NEORG. KHIM., RIGA, USSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

1/2 020 UNCLASSIFIED

TITLE--P SUB2 O SUB5 MINUS SB SUB2 O SUB3 R SUBX O SUBY SYSTEMS (R EQUALS CR, V, TI, FE). III. PHOSPHORUS PENTOXIDE AND ANTIMONY SESQUIOXIDE -U-

PROCESSING DATE--18SEP70

AUTHOR-(05)-DOMBROVSKAYA, V.K., MILLERS, T., KONSTANTS, Z., VAYVADS, A., VITINA, I.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR. ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 10-14

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL EFFECT, CHEMICAL SYNTHESIS, ELECTRICAL CONDUCTIVITY, ANTIMONY COMPOUND, PHOSPHORUS COMPOUND, CHROMIUM COMPOUND, VANADIUM COMPOUND, TITANIUM COMPOUND, IRON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0610

STEP NO--UR/0464/70/000/001/0010/0014

CIRC ACCESSION NO--AP0105593

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

2/2 020

UNCLASSIFIED

CIRC ACCESSION NO--AP0105593 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NH SUB4 H SUB2 PO SUB4 USED TO PREP. THE SPECIMENS HAD ONLY 1 ENDOTHERMIC EFFECT, AT SIMILAR TO 200DEGREES. AT THIS POINT THE ELEC. COND. INCREASED SHARPLY. ABOVE THIS TEMP. THE PHOSPHATE GRADUALLY DECOMPD. GIVING OFF NH SUB3 AND H SUB2 O. THE ENDOTHERMIC EFFECT AND THE SHARP INCREASE OF COND. WERE THE RESULT OF FUSION. BEYOND THE PEAK A NEW SOLID SUBSTANCE FORMED AND THE ELEC. COND. DROPPED TO ITS ORIGINAL VALUES. THE SB SUB2 O SUB3 UPON HEATING HAD 1 EXOTHERMIC EFFECT, AT 570-580DEGREES, CAUSED BY OXIDN. OF SB SUB2NEGATIVE O SUB3 TO SB SUB2 O SUB4. HEATING A MIXT. OF P SUB2 O SUB5 MINUS SB SUB2 O SUB3 TO 300DEGREES RESULTED IN THE FORMATION OF A COMPD. CORRESPONDING TO SB SUB2 O SUB3 TIMES P SUB2 O SUB5. THIS SUBSTANCE REMAINED CRYST. UP TO 1400DEGREES.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

1/2 025 UNCLASSIFIED

TITLE--IRON PYROPHOSPHATE -U- PROCESSING DATE--11SEP70

AUTHOR--TRUSHINSKA, V.A., KONSTANTS, Z., BURTNIYEKS, U., VAYVADS, A.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 112-13

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--IR SPECTRUM, X RAY ANALYSIS, SPECTROSCOPIC ANALYSIS, PHOSPHATE, IRON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0600 STEP NO--UR/0464/70/000/001/0112/0113

CIRC ACCESSION NO--AP0105583

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

2/2 025 UNCLASSIFIED

CIRC ACCESSION NO--AP0105583 PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IRON PYROPHOSPHATE IS PREPD. BY AUTO CLAVING AMORPHOUS FE(III) PHOSPHATE, WHICH WAS PREPD. BY THE REACTION OF 87PERCENT H SUB3 PO SUB4 WITH POWD. FE CARBONYL, FOR 4 HR AT 175DEGREES. THIS PRODUCT EXHIBITS ENDOTHERMAL EFFECTS AT 555 AND 720DEGREES AND AN EXOTHERMAL EFFECT AT 645DEGREES. THE PRODUCT WAS ALSO STUDIED BY X RAY AND IR ANAL.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--P SUB2 O SUB5 AND SB SUB2 O SUB3 R SUBX O SUBY SYSTEM (R EQUALS CR, V, TI, FE). IV. PHOSPHORUS PENTOXIDE, ANTIMONY SESQUISOXIDE AND FERRIC

AUTHOR-(04)-DOMBROVSKAYA, V.K., KONSTANTS, Z., MILLERS, T., VAYVADS, A.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 15-18

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--PHOSPHOROUS COMPOUND, X RAY ANALYSIS, ANTIMONY COMPOUND, CHROMIUM COMPOUND, VANADIUM COMPOUND, TITANIUM COMPOUND, IRON OXIDE, GLASS STRUCTURE, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0611 STEP NO--UR/0464/70/000/001/0015/0018

CIRC ACCESSION NO--AP0105594

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2/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105594

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TERNARY SYSTEM WAS STUDIED AT 1000, 1200, AND 1400DEGREES BY X RAY AND THERMOGRAPHIC ANAL. AT 1000DEGREES A GLASS WAS FORMED ONLY WHEN THE COMPN. WAS P SUB2 O SUB5 60, SB SUB2 O SUB3 20, AND FE SUB2 O SUB3 20 MOLE PERCENT. AT 1200DEGREES, 3 X RAY AMORPHOUS SUBSTANCES WERE OBTAINED CONTG. (1) P SUB2 O SUB5 60, SB SUB2 O SUB3 20, AND FE SUB2 O SUB3 20 MOLE PERCENT; (2) P SUB2 O SUB5 60 AND FE SUB2 O SUB3 40 MOLE PERCENT; AND (3) P SUB2 O SUB5 70, SB SUB2 O SUB3 10, AND FE SUB2 O SUB3 20 MOLE PERCENT. AT 1400DEGREES AN X RAY AMORPHOUS COMPN. EXTENDED OVER MORE THAN HALF OF THE 3 COMPONENT SYSTEM. WITHIN THIS SYSTEM FUSION OCCURRED ONLY IF THE FE SUB2 O SUB3 IN THE MIX DID NOT EXCEED 40 MOLE PERCENT AND THE P SUB2 O SUB5 CONTENT WAS GREATER THAN OR EQUAL TO 20 MOLE PERCENT.

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GLORIA
D 2

JPRS 56506

14 July 1972

Radio engineering

UDC 621.396.43

THE USE OF A COMPOUND SIGNAL ON VHF TROPOSPHERIC SCATTERING LINES

[Article by G. M. Vayzburg and A. S. Nemirovskiy; Moscow, Elektrosvyaz', Russian, No. 3, 1972, signed to press 30 April 1971, pp 40-47]

Introduction. Multi-beam propagation of radio waves in long-range tropospheric propagation of VHF (very high frequency) leads to the appearance of multiplicative noise, the control of which requires (as also in a case of additive noise) the introduction of overflow in the information transmission channel. For example, a very effective method of controlling multiplicative noises, frequency spacing, may be considered as a method of introducing information overflow, in which the pair of spaced signals, carrying one of the same information, form a new "compound" signal. In a more general case, a compound signal may consist of several elementary signals[1], part of which may be obtained in reception in three-dimensional spacing.

A parallel compound signal, obtained by the method of additional frequency modulation by a sine tone of an HF (high-frequency) signal, already frequency-modulated by the signal, and the statistical characteristics of the ratio of the signal power to the noise power at the output of devices for optimum joint processing of the elements of the compound signal in reception "as a whole" are considered below. The method of reception may be represented as integration of the product of the signal s(t) received and the reference oscillation a(t), performed by a correlator. The reference frequency oscillation $\Omega = 2\pi F$ may be either synthesized in reception, or defined from the compound signal received. The latter makes it possible to control both multiplicative noises and distortions of the shape of

1. Following the definition given in [reference 1], a compound signal is an arranged set of elementary signals, each of which carries the same information as the compound signal as a whole.

VAYZBURG, G. M.

[I - USSR - F]

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USSR

VAYZBURG, G. M.

UDC: 621.396.626

"Experimental Investigation of Summation Systems for Spaced FM Signal Reception"

Tr. NII radio (Transactions of the Scientific Research Institute of Radio) 1970, No. 2, pp 14-17 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D10)

Translation: The results are given of an experimental investigation of the signal/noise ratio at the output of a summing system, and the power of the telephone channel noise for systems of linear optimal summing, and summing with the use of tracking local oscillators, taking into account operation maladjustments and the FM threshold. The experimental and theoretical results are compared.
Resume

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC 669.271

KOLOBOV, G. A., MAKSIMENKO, V. M., ZHURAVLEV, A. I., VAZHENIN, S. F., and DOBRUNOV, Yu. V.

"Use of Titanium Equipment in Magnesium Production"

Moscow, Tsvetnyye Metally, No 6, Jun 70, pp 39-40

Abstract: An account is given of investigations conducted jointly by the Solikamsk Magnesium Plant and the Titanium Institute on the use of titanium alloys in equipment intended for magnesium production. The corrosion resistance of the VT1, VT14, and VT5-1 titanium alloys was investigated. The results of tests conducted at chlorine and electrolysis plants are presented in a table. The VT1 alloy was found to be more corrosion-resistant than the VT14 and VT5-1 alloys. A brief history of the use of equipment made of titanium alloys at the Solikamsk plant is given. An inventory of various equipment, such as valves, pumps, gas-pumps, calorizators, gas scrubbers, etc., is presented, and the planned installation of new titanium alloy equipment is described. It is stated that the use of such equipment in the plant has already resulted in savings of 60,000 rubles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC: 621.373.531

VAZHENINA, Z. P.

"Transistorized Pulse Oscillators"

Impul'snyye generatory na tranzistorakh (cf. English above), Leningrad, "Energiya", 1971, 128 pp, ill. 35 k. (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5G257 K)

Translation: The book describes the principle of action of transistorized main pulse oscillators, analyzes the processes taking place in these oscillators, and presents methods of calculating the circuits considered. Particular attention is given to methods of increasing the speed of pulse circuits, methods of improving stability, and methods of extending the range of durations of the generated pulses. Resumé.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC 576.895.4

KOCHKAREVA, A. V., ZAGNIBORODOVA, Ye. N., ZHERNOVOV, I. V., ZAYTSEVA, V. I., SHILENKO, V. I., ZABEGALOVA, M. N., AVAKOV, S. M., TASHLIYEV, A. O., BEL'SKAYA, G. S., and VAZHEV, A. P. Republic Antiplague Station, Institute of Zoology, Academy of Sciences Turkmen SSR

"Regional Distribution of Ixodid Ticks in Turkmenia"

Ashkhabad, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Biologicheskikh Nauk, No 5, 1971, pp 36-42

Abstract: The 31 species and subspecies of Ixodid ticks (of the total of 49 living in Turkmenia) gathered from 699 geographic points and included in the collection of the station are analyzed for the distribution of their natural habitats and their geological and botanic living conditions. Hyalomma asiaticum asiaticum proliferates in large numbers in all four regions (clay desert, sandry desert, cultivated river valleys, and southern mountains). H. detritum an. anatolicum, H. an. excavatum, and H. pl. plumbeum thrive mainly in cultivated areas. The most numerous species are H. as. asiaticum and H. numidiana turanica living in sandy desert and Ornithodoros tartakovskyi living in clay desert. Ixodes redikorzevi, Haemaphysalis punctata, Rhipicephalus schulzei, and R. leporis were recorded for the first time in the republic.

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Acc. Nr.: AR0113865 Ref. Code: UR0000

USSR UDC: 669.162.1:622.79

POPOV, N. N., ANISIMOV, A. T., VAZHINSKIY, V. I., RASPOPOV, I. V., TARASOV, V. P., LITVINENKO, V. I., DOLMATOV, V. A., LAVRENT'YEV, M. L., TARASOV, F. P.

"Results of the Industrial Operation of a New Charging Device"

Donetsk, Donetskiy Nauchno-Issledovatel'skiy Institut Chernoy Metallurgii. Sbornik Trudov (Donetsk Scientific Research Institute of Ferrous Metallurgy. Collected Transactions), No 17, 1969, pp 19-30 (from Referativnyy Zhurnal, Metallurgiya, No 1, 1970, Abstract No 1V212 by D. Kashayeva)

Translation: At the Zhdanov Plant imeni Il'ich, at blast furnace No. 2 was installed an experimental sample of a new charging unit. Its drawbacks were taken into account when the second sample of the charging machine was designed, which was installed on the same furnace in 1965. The charging device operated for 2.5 years. The new charging device permitted the technical and economic

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REEL/FRAME
19931055

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Acc. Nr.: AR0113865

indicators of the blast-furnace heat to be improved. The total increase in the productivity of the furnace as a result of better distribution of the charge material by the new charging devices and as a result of an increase in the service life of the charging device, comprised 6.5% with a 6.9% decline in coke consumption. The savings, calculated on a yearly basis, comprised about 785,800 rubles. Prolonged testing of the new charging device made it possible to recommend its use with the medium-volume blast furnaces of the Ukraine, and to test it on furnaces of larger volume.

2/2

REEL/FRAME
19931056

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR UDC 681.325.65

VAZILEVICH, R. P.

"Multistable Device"

USSR Author's Certificate No 270896, Filed 25/11/68, Published 21/08/70 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, 1971, Abstract No 5B170P)

Translation: There are well-known multistable devices containing cells of flip-flops controlled by signal switches and AND, OR, and NOT logic elements. However, in such devices it is impossible to produce a large number of stable states: i.e., they have limited functional capabilities. The multistable device suggested differs from these devices in that in order to expand the functional capabilities of the circuit, the cells are connected into a square matrix. 2 figs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR UDC 539.184.26

VDOBYN, YU. A., DOBRODEYEV, N. A.

"Consideration of Hyperfine Level Structure When Calculating a Dielectric Constant of a Gas at Resonance Frequency"

Leningrad, Optika i Sprektroskopiya, Vol 28, No 4, April 1970, pp 814-817

Abstract: This article contains the derivation of equations for calculating the dielectric constant of a gas, taking into account hyperfine splitting. Some specific applications of the expression obtained are presented. In deriving the expression for calculating the dielectric constant, the authors begin with the fact that the dielectric constant of a gas $\varepsilon(\omega)$ is related to the two-part Green function $K^{fm;f_0m_0}_{FM;F_0M_0}(p, k, \omega)$, in the case of considering hyperfine structure, in the following way:

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USSR

VDOBYN, YU. A., et al, Optika i Sprektroskopiya, Vol 28, No 4, April 1970, pp 814-817

$$\varepsilon(\omega)=+\frac{4\pi g^2}{k^2}(2J+1)\sum_{\substack{ff_0mm_0\\FF_0MM_0}}\sum(-1)^{2i+2j-f-f_0}W(JFjf;\ il))W\ (JF_0jf_0;il)\ x$$

$$x\sqrt{(2f\ 1)(2f_0\ 1)}\ (1f\mu m/FM)\ (1f_0\mu_0m_0/F_0M_0)\ (-1)^{\mu}k_{-\mu}k_{\mu 0}\ x$$

$$x\int dpK^{fm;f_0m_0}_{FM;F_0M_0}\ (p,\ k,\ \omega),$$

where fm, FM are the total moments and projects of the ground and excited states of the atoms; i is the nuclear spin: where $f = j + i$; $F = J + i$; $W(JFjf;\ il)$, $(1f\mu m/FM)$ are the Racah and Clebsch-Gordan coefficients respectively; $k = \omega/c$.

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USSR

VDOBYN, YU. A., et al, Optika i Sprektroskopiya, Vol 28, No 4, April 1970, pp 814-817

It is pointed out that self-broadening of lines in gases caused by dipole-dipole interaction of excited and unexcited atoms in approximating pair collisions has been investigated earlier. It was demonstrated that even when the doppler broadening is neglected, the path of the line is described with sufficient accuracy by dispersion distribution with the width ng^2 and shift : where n is the density of the atoms,

$g^2 = \frac{\langle J/d/j \rangle^2}{2J+1}$, J and j are the total electron moments of the atoms in the excited and ground states, $\langle J/d/j \rangle$ is the reduced matrix element of the dipole transition moment (the atomic system of units is used). The numerical coefficient in the expressions for Γ and Δ is determined by the total moments of the excited and ground states. For the moment j = 0, 1/2; J = 1, 1/2, 3/2 the corresponding results are presented in earlier papers. These results are obtained without considering hyperfine splitting of the levels. This is correct for light elements, and hyperfine splitting is also small for isotopes with zero nuclear

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USSR

VDOBYN, YU. A., et al, Optika i Sprektroskopiya, Vol 28, No 4, April 1970, pp 814-817

spin. However, for heavy elements hyperfine splitting $\Delta\nu \lesssim 1$ cm^{-1}, which is appreciably greater than the natural width of the levels. Thus, in a certain gas density range (10^{15} cm$^{-3} \lesssim n \lesssim 10^{18}$ cm^{-3}) hyperfine splitting $\Delta\nu$ can exceed or compare with the collision width Γ; therefore, it must be considered when determining the form of the line.

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1/2 015 UNCLASSIFIED

TITLE--PREPARATION OF DISPERSIONS OF INGREDIENTS FOR LATEX MIXTURES -U- PROCESSING DATE--30OCT70

AUTHOR-(05)-MAZINA, G.R., MIROKHINA, G.A., PUTYATINA, Z.P., VDOVCHENKOVA, M.K., ABRAMOVA, YE.N.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(2), 19-21

DATE PUBLISHED-------70

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

TOPIC TAGS--LATEX, MICROSCOPE, BUTYL RUBBER, FILLER, SULFUR, ZINC COMPOUND, ROLLING MILL/(U)V200 VIBRATORY MILL, (U)MBI6 MICROSCOPE, (U)GIPI LKP BEAD MILL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/0096 STEP NO--UR/0138/70/029/002/0019/0021

CIRC ACCESSION NO--AP0122362

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2/2 015 UNCLASSIFIED

CIRC ACCESSION NO--AP0122362 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. S, ZNO, ZN(S SUB2 CNET SUB2) SUB2, AND ZN(S SUB2 CNETPH) SUB2 DISPERSIONS WERE PREPD. IN A BEAD MILL GIPI-LKP (HAVING GLASS BEADS 0.63-1 MM IN DIAM.), A BIVRATORY MILL M-200, AND A BALL MILL, AND THE PARTICLES WERE EXAMD. UNDER A MBI-6 MICROSCOPE. SEDIMENTATION ANAL. INDICATED THAT THE DEGREE OF DISPERSION OF THE INGREDIENTS WAS IDENTICAL REGARDLESS OF THEMILL USED, BUT THE BEAM MILL WAS THE MOST PRODUCTIVE. BUTYL TUBBER FILMS FILLED WITH THE VARIOUS DISPERSIONS HAD SIMILAR PHYSICOMECH. PROPERTIES. FACILITY: NAUCH.-ISSLED. INST. REZIN. LATEKSNYKH IZDELII, MOSCOW, USSR.

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USSR

DELIMARSKIY, YU. K., and VDOVENKO, I. D., Editors

Korroziya i Zashchita Metallov (Corrosion and Protection of Metals), Kiev, Naukova Dumka, 1972, 128 pp

Translation of Annotation: This collection of articles contains new information on the theory of rapid annealing. Problems are discussed on production of new polymeric coatings along with the corrosion stability of structural materials in media containing aggressive chloride compounds. Data on the electrochemical behavior of molybdenum, titanium, and of other metals during anode polarization in chromium sulfate solutions are presented.

Works on electrodeposition of the corrosion-resistant indium-antimony and magnetic cobalt-nickel-phosphorus alloys with predetermined properties are also included in this collection.

The book is intended for engineers and technicians of the metallurgical, machine-building, chemical, food, and other branches of industry working on problems of corrosion and protection of metals from corrosion.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

DELIMARSKIY, YU. K., and VDOVENKO, I. D., Korroziya i Zashchita Metallov, Naukova Dumka, 1972, 128 pp

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

UNCLASSIFIED

TITLE--SODA FREE PROCESS FOR REMOVING SCALE FROM EVAPORATORS -U-

PROCESSING DATE--11DEC70

AUTHOR--(05)-SHCHEGOLEV, V.N., CHERNEGOVA, I.K., SUPRUNCHUK, V.K., AVDEYEVA, A.V., VDOVENKO, I.D.

COUNTRY OF INFO--USSR

SOURCE--SAKH. PROM. 1970, 44(5), 16-19

DATE PUBLISHED--------70

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

TOPIC TAGS--CORROSION INHIBITOR, HYDROCHLORIC ACID, SODA ASH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605046/D12 STEP NO--UR/0339/70/044/005/0016/0019

CIRC ACCESSION NO--AP0143163

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2/2 017 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0143163

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE PROCESS CONSISTS OF CIRCULATING AQ. 5-10PERCENT HCL CONTG. 0.5-1PERCENT OF AN INHIBITOR, E.G., A DIALKYLDIMETHYLAMMONIUM CHLORIDE, THROUGH THE EVAPORATOR IN A SPECIAL WAY FOR LESS THAN OR EQUAL TO 5 HR AT 60DEGREES. THIS METHOD REMOVES MORE SCALE AND DRASTICALLY REDUCES THE AMT. OF CORROSION. AN APP. IS DIAGRAMMED AND ITS OPERATION IS DESCRIBED, INCLUDING THE OPTIMUM CONDITIONS FOR CARRYING OUT THE PROCESS. THE PROCESS IS BEING USED IN MANY SUGAR FACTORIES. FACILITY: INST. OBSHCH. NEORG. KHIM., KIEV, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--RADIOMETRIC STUDY OF ION SORPTION BY MNO SUB2 AND FE(OH) SUB3 PRECIPITATES FROM AQUEOUS ORGANIC MEDIA -U-

AUTHOR-(04)-VDOVENKO, L.I., BARAN, A.A., GLAZMAN, YU.M., STRAZHESKO, D.N.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 350-353

DATE PUBLISHED--------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, CHEMISTRY

TOPIC TAGS--RADIOACTIVE TRACER, ION, MANGANESE OXIDE, IRON OXIDE, SORPTION, ORGANIC SOLVENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1599 STEP NO--UR/0069/70/032/003/0350/0353

CIRC ACCESSION NO--AP0125221

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2/2 015 UNCLASSIFIED

CIRC ACCESSION NO--AP0125221 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT HAS BEEN ESTABLISHED BY A DIRECT RADIOACTIVE TRACER METHOD THAT THE COUNTERIONS SORPTION BY MNO SUB2 AND FE(OH) SUB3 PRECIPITATES FROM WATER MIXTURES WITH ETHYL ALCOHOL, ACETONE AND DIOXANE IS PRACTICALLY INDEPENDENT OF THE ORGANIC COMPONENT CONTENT IN THE MIXTURE. TO ACCOUNT FOR THIS FACT IT IS SUGGESTED THAT ON THE SURFACE OF SUFFICIENTLY HYDROPHILIC PRECIPITATES STUDIED A STRONG ADSORPTION FILM IS FORMED FROM WATER MOLECULES, WHICH DOES NOT DISINTEGRATE EVEN AT HIGH CONCENTRATIONS OF ORGANIC SOLVENTS IN THE BULK OF THE LIQUID PHASE. FACILITY: INSTITUT FIZICHESKOY KHIMII AN USSR, KIEV. FACILITY: TEKHNOLOGICHESKIY INST. LEGKOY PROMYSHLENNOSTI, KIEV.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC 66.074.7:539.173.8

VDOVENKO, M., KRIVOKHATSKIY, A. S., and SKOVORODKIN, N. V.

"An Analytical Method of Group Separation of Mixtures of Fission Products in the Presence of Carriers on Cation-Exchange Resins"

Leningrad, Radiokhimiya, Vol XIII, No 3, 1971, pp 416-421

Abstract: In investigating the composition of radioactive fission products, separation into groups is often the first stage of analysis, for it facilitates further separation, decontamination of individual elements, and ultimate analysis with β- and γ-spectrometers. But the numerous separation methods in use do not take into sufficient account the effect of the concentrations of separated elements or of impurities, for the individual case. The proposed group method, based on that of W. G. MATHERS, involves separation into 5 indicator quantities, on Dower-50x8 cation exchange resin, for Zr, Ce, Cs, Sr, Co and Ru, with use of columns and various elutriators. The method allows separation into six fractions: 1) Ru, Mo, Zr, Nb, Sb -- and possibly Gd and Pd, 2) Cs and Rb (but partially Sb), 3) Sr and Ba, 4) Zr, 5) transuranium elements, and partly rare-earth elements heavier than Gd and Yt, and 6) rare-earth elements. Separation is very precise,

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

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VDOVENKO, M., et al., Radiokhimiya, Vol XIII, No 3, 1971, pp 416-421

but concentrations and impurities may have certain vitiating effects on the analysis; these can be avoided by precautions specified in the paper.

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USSR

VDOVENKO, M. I., ZHUKOVA, T. S.

"Determination of Surface Tension of Slags of Energetic Coals in the Plastic State"

Probl. Teploenerg. i Prikl. Teplofiz. [Problems of Heat Power Engineering and Applied Heat Physics -- Collection of Works], No 7, Alma-Ata, Nauka Press, 1971, pp 20-26 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 B1464 from the Resume).

Translation: The use of all recently used versions of the method of the lying drop allows the surface tension of slags to be determined over a broad interval of melting points. The temperature dependence of surface tension and slag density of energetic coals is determined from 1,000 to 1,800°.

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Adsorption

USSR

UDC 541.183.2

BONDARENKO, S. V., VDOVENKO, N. V., BUNTOVA, M. A., RUDENKO, V. M., AND TARASEVICH, YU. I., Institute of Colloidal Chemistry and Chemistry of Water, Academy of Sciences, UkrSSR

"Wetting Heat and Water Adsorption on Organopalygorskite"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 38, No 10, Oct 71, pp 1008-1013

Abstract: The wetting heat and adsorption of water on a natural sample of palygorskite and on samples treated with organic materials were investigated. It has been shown that mineral surfaces modified with organic cations have a lower adsorption capacity. This is due principally to the replacement of the most active adsorption centers of the internal surface of the mineral (inorganic exchange ions, hydroxyl groups) by less active organic cations. The surface covered with organic modifiers increases with their increasing chain length, and consequently a gradual decrease occurs of the wetting heat and of the magnitude of adsorption. On the basis of thermochemical studies, changes were calculated for the differential thermodynamic functions of the

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USSR

BONDARENKO, S. V., et al., Ukrainskiy Khimicheskiy Zhurnal, Vol 38, No 10, Oct 71, pp 1008-1013

adsorption process. It has been established that the A. V. DUMANSKY law applies in determining the quantity of water bound by the palygorskite modified with organic materials.

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USSR

UDC:621.785

DVORINA, L. A., YUKHIMENKO, Ye. V., VDOVENKO, S. A., Institute of Problems of Material Science, Academy of Sciences UKrSSR

"Interaction of Titanium Diboride with Titanium Disilicide and Silicon at High Temperatures"

Kiev, Poroshkovaya Metallurgiya, No 4, 1972, pp 61-65.

Abstract: This work presents a study of the high-temperature interaction of titanium diboride and disilicide, as well as titanium diboride with silicon in a vacuum in the 900-1800°C temperature interval. The initial materials used were titanium diboride and disilicide powders; the experiments were performed in a vacuum resistance furnace with a graphite heating element. Analysis of the data produced showed that at high temperatures, titanium disilicide and diboride interact without forming other phases. However, above 1100°C a clear tendency toward decreasing silicon content is observed, apparently resulting from its evaporation upon dissociation of the titanium disilicide. Analysis of data on the high temperature interaction of titanium diboride with silicon showed slight solubility of silicon in titanium diboride. The high chemical stability of titanium diboride against silicon and titanium disilicide apparently results from the high bond strength of the Me-B and B-B bonds.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

Radiation Chemistry

USSR

UDC 543.544.6:546.79

VDOVENKO, V. M., KRIVOKHATSKIY, A. S., BELOV, L. M., and ALEKSANDROV, B. M.

"Some Problems of the Chromatographic Purification and Preparation of Sources of Transplutonium Elements"

Leningrad, Radiokhimiya, Vol 16, No 4, 1973, pp 534-542

Abstract: Distribution of americium, curium, and californium has been determined between alcoholic solutions containing HCl and strongly alkaline anion exchange resin Dowex-1x4. Strong adsorption of TPE has been observed with distribution coefficients of 10^5-$3 \cdot 10^6$, while admixtures of aluminum, magnesium, calcium, copper(II) and iron(III) were practically untouched. The process of electrolytic isolation of californium from weakly acidic solutions has been studied at various pH values, variable cathode current density and time of electrolysis. Optimal conditions have been selected for a two stage isolation of californium and one stage deposition of berelium from weakly acidic solutions directly on metallic plates, yielding layers of satisfactory quality.

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USSR

UDC 541.49:546.791

VDOVENKO, V. M., KOZHINA, I. I., SUGLOBOVA, I. G., and CHIRKST, D. E.

"Formation of Complexes in the Systems Uranium Halide - Alkali Metal Halide. Preparation and Structure of Rb_2UBr_6 and Cs_2UBr_6"

Leningrad, Radiokhimiya, Vol 15, No 1, 1973, pp 54-57

Abstract: Rb_2UBr_6 (I; m. 722°, d_4^{20} 4.45±0.02) and Cs_2UBr_6 (II; m. 736°, d_4^{20} 4.74 ± 0.01) were prepared by melting RbBr and CsBr, respectively, with a stoichiometric amount of UBr_4 in a sealed, evacuated quartz tube. I and II were green compounds. Just like UBr_4, they hydrolized readily in the air with the formation of HBr, so that all operations with them had to be carried out in an Ar atmosphere. X-ray diffraction measurements showed that I and II crystallized in the cubic system within the spatial group $Fm3m-O_h^5$ and with a structure of the K_2PtCl_6 type. The elementary cell contained 4 formula units. The densities of I and II that followed from X-ray measurements corresponded to the picnometrically determined values of d_4^{20}.

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USSR

UDC 541.49:546.791

VDOVENKO, V. M., SUGLOBOVA, I. G., and CHIRKST, D. E.

"Formation of Complexes in the System Uranium Halide-Alkali Metal Halide. The Enthalpies of Formation of Rb_2UBt_6 and Cs_2UBr_6"

Leningrad, Radiokhimiya, Vol 15, No 1, 1973, pp 58-60

Abstract: The standard enthalpies of formation of Rb_2UBr_6 (I) and Cs_2UBr_6 (II) at 25° were determined on the basis of data obtained by measuring the enthalpies of solution of the initial bromides, I, and II in an 0.5% solution of $FeCl_3$ in 2% HCl. The enthalpy of formation from the initial bromides was calculated at 14.8 ± 0.2 and 22.9 ±0.2 kcal/mole for I and II, respectively, and that of formation from the elemental substances at 427.4± 0.8 and 439.1 ± 0.8 kcal/mole for I and II, respectively. A calculation showed that the enthalpy of formation of the gaseous UBr_6^{++} ion (307.1 - 307.2 kcal per g-ion) and the energy of the U-Br bond (68.0 kcal/mole.bond) remained unchanged on transition from I to II. Consequently, the higher enthalpy of formation of II from the initial bromides vs. that of I was evidently due to the greater strength of the extraspheral bonds in II.

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USSR

UDC 541.57:546.791.6

VDOVENKO, V. M., LADYGIN, I. N., SUGLOBOV, D. N.

"Characteristic Nature of the Valence Oscillation Frequency of Uranyl"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol XV, No 6, 1971, pp 1105-1109

Abstract: The characteristic nature of the valence frequencies of UO_2^{2+} was analyzed on the basis of data on the low-frequency oscillation spectra of uranyl complexes [Vdovenko, et al, ZhNKh, No 13, 297, 1968; S. S. Bukalov, ZhPS, No 12, 341, 1970] and detection of a linear relation between the valence oscillation frequencies of isotopically substituted uranyl [V. M. Vdovenko, et al., DAN SSSR, No 185, 824, 1969]. The shifts of the valence frequencies of uranyl exceeding a value on the order of 5 cm^{-1} are related in a defined manner to the variation of the force constant of the U-O bond: that is, the variation of the electron state of the latter.

When analyzing the oscillations of the mononuclear complexes of uranyl, the authors used the model of the D_{nh} symmetry complex. This permits the fullest explanation of the role of individual parameters affecting the uranyl frequencies.

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USSR

UDC 542.61:546.791.6

VDOVENKO, V. M., KUZINA, M. G., and LIPOVSKIY, A. A.

"Study of the Extraction of $U^{(VI)}$ From Citric Acid Solutions With Tetradecylammonium Salts"

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, pp 705-709

Abstract: Extraction of $U^{(VI)}$ from aqueous solutions containing citric acid was studied using tetradecylammonium citrate and bromide. The goal of the study was to find optimal conditions for the extraction of $U^{(VI)}$ and to shed some light on the structure and composition of the extracted substances. Depending on the pH of the equilibrium aqueous solution, two complex compounds were observed in the organic phase with different absorption spectra. Preliminary analysis of the extraction, potentiometric and spectrophotometric data indicated that at pH 2-3 the material extracted from the solution had a formula R_4NUO_2Cit. From solutions with pH $\geqslant$ 6 a hydroxy complex is extracted with the ratio of R_4N/UO_2^{2+} of 1.5 and OH^-/UO_2^{2+} of 1.3. Using trioctylamine as the extracting agent, the $U^{(VI)}$ is removed from 0.3 M solution of citric acid in 100% at pH 2.75-3.0. At higher pH the extraction level drops so that at pH 5.15 no $U^{(VI)}$ is extracted at all.

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USSR

UDC 546.791.4

VDOVENKO, V. M., ROMANOV, G. A., MALININ, G. V., and SOLNTSEVA, L. V.

"Synthesis and Investigation of Some Physico-Chemical Properties of $UOF(OH) \cdot 0.5\ H_2O$"

Leningrad, Radiokhimiya, Vol 12, No 5, 1970, pp 762-764

Abstract: The compound $UOF(OH) \cdot 0.5\ H_2O$ was synthesized by adding fluorine ions at a ratio of 1:1 to U(IV) solutions in perchloric acid. Upon addition of a base the color of the solution changes from greenish-blue to brown and a fine crystalline black precipitate falls out at pH 1.8. The product contains 79.76% of uranium, agreeing well with the proposed structure. Thermogravimetric and infrared analyses carried out also supported the proposed structure for the above product. This compound is insoluble in water, and dissolves easily in aqueous solutions of mineral acids forming a fluoride complex UF^{3+}. When heated to 250° it converts to UOF(OH).

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USSR

UDC 542.941:546.791.6

BELYAYEV, YU. I., VDOVENKO, V. M., SKOBLO, A. I., and SUGLOBOV, D. N.

"Reduction of Uranyl ion by Titanium (III) in Non-aqueous Media"

Leningrad, Radiokhimiya, Vol 13, No 1, 1971, pp 140-142

Abstract: The reaction of $(C_{10}H_{21})_4NUO_2Cl_3$ with $TiCl_3$ was studied in a series of solvents: dimethylformamide, methanol, TBF, acetone, acetonitrile; its stoichiometry was established for individual cases. In all media studied, a rapid reduction of UO_2^{2+} to U^{4+} occurs at 20° with formation of TiO^{2+} and $UCl_6^{=}$ (dimethylformamide, acetonitrile), UCl_5^{-} (TBF, acetone), UCl_4 (methanol). The high reaction rate and absence of solvent effect would indicate an intraspherical mechanism to be governing this reaction in which the coordinated spheres of $U^{(VI)}$ and $Ti^{(III)}$ are in direct contact during the transfer of oxygen and of the electron.

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USSR

UDC 621.039.8

VDOVENKO, V. M.

"Possible Use of Radioactive Isotopes in Radioisotope Power Engineering"

Moscow, Radiokhimiya, Vol 12, No 2, 1970, pp 204-222

Abstract: Nuclear fuels must satisfy the following requirements: 1. Half-life of isotope must not be lower than the service life of radiation source, while at the same time not so long that the weight and volume of isotope fuel become extremely large. In practice this means a half-life range from three months to 100 years. 2. The radioactive isotope must exhibit high specific and bulk energy emissions, namely, not less than 0.1-0.2 watts/gram of preparation and not less than 1 watt/cm^3. 3. The radioactive isotope must be easily produced in necessary quantities, or in other terms, in megacurie amounts; it must be low in cost. Another important criterion is safety in handling the source. Alpha-radiators prove most convenient, since the alpha-particle path length in matter is very short. To evaluate the utility of a given radioactive isotope as a heat source, the following equations can be used:

$$p_{sp} = 2.12 \cdot 10^3 \frac{E_{av}}{A \cdot T},$$

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VDOVENKO, V. M., Radiokhimiya, Vol 12, No 2, 1970, pp 204-222

where P_{sp} = specific intensity (in watts/gram); E_{av} = average energy per decay (in Mev); T = half-life (in years); and A = atomic weight. Tables and figures list and schematize isotopes by decay paths, occurrence in nature, use in nuclear power generators by countries.

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USSR

UDC 546.791.4

VDOVENKO, V. M., ROMANOV, G. A., and SOLNTSEVA, L. V.

"Heat of Formation of $UOF(OH) \cdot 0.5\ H_2O$"

Leningrad, Radiokhimiya, Vol 12, No 5, 1970, pp 764-766

Abstract: In continuation of their work, the authors determined the enthalpy of formation of $UOF(OH) \cdot 0.5\ H_2O$ to be -374.9 ± 5.0 Kcal/mole. The following values were found for the reaction

$$UOF(OH) \cdot 0.5\ H_2O = UOF(OH) + 0.5\ H_2O$$

($\Delta H = 5.19$ Kcal/mole, $\Delta\phi = 1.46$ Kcal/mole, and $\Delta S = 12.48$). The heat of formation of UOF(OH) was found to be -340.8 ± 5.0 Kcal/mole.

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1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--POSSIBLE USE OF RADIOISOTOPES IN POWER SOURCES -U-

AUTHOR--VDOVENKO, V.M.

COUNTRY OF INFO--USSR, FRANCE, UNITED KINGDOM

SOURCE--RADIOKHIMIYA 1970, 12(2), 204-22

DATE PUBLISHED--------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--RADIOACTIVE ISOTOPE, TRANSURANIUM ELEMENT, URANIUM ISOTOPE, THERMAL BATTERY, HALF LIFE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1424 STEP NO--UR/0186/70/012/002/0204/0222

CIRC ACCESSION NO--AP0133376

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

2/2 015 UNCLASSIFIED

CIRC ACCESSION NO--AP0133376 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASIC CRITERIA FOR RADIOACTIVE FUEL SOURCES ARE (1) HALF LIVES OF 3 MONTHS TO 100 YR FOR THE RADIOISOTOPE, (2) ENERGY OUTPUTS OF LARGER THAN OR EQUAL TO 0.1-0.2 W-G, OR LARGER THAN OR EQUAL TO 1 W-CM PRIME3, AND (3) FEASIBILITY OF PREPG. MCI QUANTITIES AT REASONABLE COST. SP. POWER VALUES (W-G) ARE LISTED FOR TRANS U ISOTOPES WITH HALF LIVES OF 100 DAYS TO 100 YR. A SCHEME IS GIVEN FOR FORMING TRANS U ELEMENTS, FROM PRIME235 U BY EXPOSURE TO THERMAL N, FOR USE AS POTENTIAL FUEL SOURCES. THE ESTD. PRODUCTION IN G OF TRANS U ELEMENTS, SUCH AS PRIME239 PU, PRIME241,243 AM, AND PRIME244 CM IN THE USA FOR 1975 AND 1980 IS INDICATED. TERRESTRIAL AND MARINE THERMAL BATTERIES AND OTHER POWER SOURCES BASED ON THE USE OF RADIOISOTOPES ARE LISED. THE POWER, WT., USEFUL LIFE, AND ENERGY SOURCE OF THESE ENERGY GENERATORS ARE GIVEN. SIMILAR, BUT BRIEFER, LISTINGS ARE GIVEN FOR FUEL SOURCES IN FRANCE AND GREAT BRITAIN.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

1/2 031 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--RAMAN SPECTRA OF ANION COMPLEXES OF URANYL -U-

AUTHOR--BUKALOV, S.S., VOOVENKO, V.M., LADYGIN, I.N., SUGLOBOV, D.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2), 341-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RAMAN SPECTRUM, URANIUM COMPOUND, COMPLEX COMPOUND, POTASSIUM, CESIUM, RUBIDIUM, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0237 STEP NO--UR/0368/70/012/002/0341/0344

CIRC ACCESSION NO--AP0106893

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

2/2 031 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106893

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RAMAN SPECTRA OF (SHOWN OF MICROFICHE) WERE RECORDED WITH A LASER SPECTROGRAPH. BY ANALOGY WITH IR SPECTRA FREQUENCIES LARGER THAN 200 CM PRIME NEGATIVE1 ARE ATTRIBUTED TO U HALOGEN VIBRATIONS.

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USSR

UDC 546.791.6-386:535.343-15

VDOVENKO, V. M., LADYGIN, I. N., SUGLOROV, D. N.

"Manifestation of Coordination Polymerization of Fluoride Complexes of Uranyl in Frequencies of the Uranium-Fluoride Oscillations"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 15, No 1, 1970, pp 265-268

Abstract: For a clear idea about the position of the frequencies of bridge and terminal bonds of uranium-fluoride, a study was made of infrared spectra of fluoride complexes of uranyl, whose composition includes only F_{end}, only F_{bridge}, or both fluoride atoms. Infrared absorption spectra were measured in the frequency ranges 190-500 and 800-1000 cm^{-1}. Results of the study showed that infrared spectra can be used to determine the U-F bond type in secondary complexes of uranyl. Bridge bonds are less stable and are characterized by lower frequencies of the U-F valency vibrations (270-330 cm^{-1}) than the end vibrations (350-430 cm^{-1}).

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Acc. Nr: AP0034229 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code: UR0078

V

72768r Manifestation of coordinative polymerization of uranyl fluoride complexes in uranium-fluorine vibrational frequencies. Vdovenko, V. M.; Ladygin, I. N.; Suglobov, D. N. (USSR). Zh. Neorg. Khim. 1970, 15(1), 265-8 (Russ). The ir absorption frequencies of bridging and terminal U-F bonds in $[UO_2F_5]^{3-}$, $K_3(UO_2F_5)$, $[(C_{10}H_{21})_2NH](UO_2F_3)$ and $[(C_{10}H_{21})_2NH]F$ were examd. Bridging U-F bonds are weaker and absorb at 270-330 cm^{-1} while terminal U-F bonds absorb at 350-430 cm^{-1}.

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USSR

UDC 546.791.6

VDOVENKO, V. M., and VAVILOV, N. G.

"Investigation of the Uranyl Ion Complexes With di-n-Heptylphosphinic Acid"

Leningrad, Radiokhimiya, Vol 14, No 4, 1972, pp 558-563

Abstract: A study of the complexes forming between di-n-heptylphosphinic acid and uranyl ion was carried out by means of cryoscopic and IR-spectroscopic methods. A diagram has been proposed for the transition from one complex to the next along the saturation of the substrate being extracted with uranium:

$$UO_2X_2 \cdot 2HX \longrightarrow UO_2X_2 \cdot HX \longrightarrow (UO_2X_2)_n \cdot HX \longrightarrow (UO_2X_2)_m$$

where $1 < n < m$. It has been established that in the complex $(UO_2X_2)_m$ the m value is about 10-12. Keeping such solutions stored for 10 days leads to an increase in m of up to 25. It was shown to be possible to extract concurrently both the uranyl and the nitrate ions from aqueous solutions containing less than 1M nitric acid.

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USSR

UDC 541.8:546.791.6'131:54-145.4:546.212

VDOVENKO, V. M., BLOKHINA, V. K., and SUGLOBOVA, I. G.

"Mutual Solubility in the System Uranyl Chloride--Water--Diethyl Ether"

Leningrad, Radiokhimiya, Vol 14, No 4, 1972, pp 563-566

Abstract: Uranyl chloride is poorly extracted by ethyl ether from aqueous solutions. Only when the concentration of UO_2Cl_2 reaches the level of 55-60%, there occurs a noticeable transfer of the salt into the ether. With $UO_2(NO_3)_2$ the salt extraction into the ether phase begins with a 30-35% concentration. This lower tendency of uranyl chloride towards extraction with ether is due to a higher concentration of negative charges on the chloride atoms, which results in strong hydration of the complex with water molecules. The solubility of uranyl chloride in ether reaches a maximum when water molecules can be found in the coordination sphere of uranium. The transition of the salt into ether is due to the formation of hydrogen bonds between the water of hydration and the ether molecules. Uranyl chloride typically forms trisolvates: two water molecules with one ether molecule, or one water to two ether molecules.

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USSR

UDC 546.791.6-535.343

VDOVENKO, V. M., LADYGIN, I. N., and SUGLOBOV, D. N.

"Ionic Equilibria in the Solutions of Uranyl Complexes With Tridecylammonium Salts"

Leningrad, Radiokhimiya, Vol 14, No 4, 1972, pp 552-558

Abstract: Hydrogen bonding between the cation and anion has been observed in the spectra of nonpolar solutions (benzene, CCl_4) of uranyl anion complexes with R_3NH^+ cations by a shift towards lower frequencies of the ν_{NH} vibration and by the change in the vibrational spectrum of the complex anion in general. The degree of this change depends on the H-bond strength and on the nature of acid ligand. The interaction between the R_3NH^+ and the $[UO_2F_5]^{3-}$ and $[UO_2Cl_4]^{2-}$ complexes weakens the bond between uranium and the ligand leading to a dissociation of the complex, resulting in the trimethylammonium salt being split off. In mixed solutions of uranyl complexes and alkylammonium salts a shift of the cation R_3NH^+ has been observed from the complex anion to the anion of the salt which forms stronger H-bonds with the R_3NH^+. Associations with following compositions have been noted to form in such mixed solutions: $[(R_3NH)_nNO_3]^{(n-1)+}$ and $[(R_3NH)_nCl]^{(n-1)+}$, where n = 1, 2 or 3.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC 541.49:546.791

VDOVENKO, V. M., KOZHINA, I. I., SUGLOBOVA, I. G., and CHIRKST, D. E.

"Complex Formation in the Systems Uranium Halide -- Alkali Metal Halide. Forms of the Compounds in the Systems Uranium Tetrabromide -- Alkali Metal Bromide and Their Structural Characteristics"

Leningrad, Radiokhimiya, Vol 15, No 2, 1973, pp 172-177

Abstract: Fisibility diagrams are reported for the system UBr_4-MBr and conclusions reached from roentgenographic and thermographic studies concerning the forms of the coordination compounds obtained in these systems. It has been established that the salt systems UBr_4-MBr (M = Na, K, Rb, Cs) form complexes with only a single composition M_2UBr_6, which appears to be melting congruently, the melting points of individual complexes increasing with the increasing atomic number of the alkali metal. With decreasing atomic number of the alkali metal the cubic face-centered lattice shown by Cs_2UBr_6 and Rb_2UBr_6 undergoes deformation, changing to the tetragonal lattice of K_2UBr_6. Na_2UBr_6 has a hexagonal structure.

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USSR

UDC 621.3.032.3

ZUBENKO, YE. I., MEZHERITSKIY, A. M., and VDOVENKO, V. V.

"Investigation of the Relationship Between the Granulometric Composition of a Luminophore and the Starting Dicalcium Phosphate"

V sb. Tekh. progress is dostizh. nauki v khim. prom-sti (Technical Progress and Achievements of Science in Chemical Industry -- collection of works), Barnaul, 1973, pp 23-25 (from RZh-Khimiya, No 19, Oct 73, Abstract No 19L143)

Translation: The photoluminescent material LG-1K with the composition $3Ca_3(PO_4)_2 \cdot Ca(F,Cl)_2 \cdot (Sb,Mn)$ used in low pressure luminescent lamps with 70 lm/vt light yield can be obtained by calcination of a batch consisting of $CaHPO_4$, $CaCO_3$, CaF_2, SB_2O_3, $MnCl_2$, $CdCO_3$ at 1100-1200°. To obtain this luminescent material with a given granulometri composition it is necessary to use $CaHPO_4$ with the desired granulation. The optimal granulometric composition of $CaHPO_4$ producing the particle content in the luminescent material $\geqslant$ 14 mk 15-18%, is in the range of 6-14 mk - 60-70%, $\geqslant$ 14-8-12%.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

Microelectronics

VDOVENKOV, A. A.

JPRS 57333

25 October 1972

MICROELECTRONICS

Excerpts from Russian-language book edited by F. V. Lukin: Mikroelektronika, No 5, 1972, Sovetskoye Radio Publishing House, Moscow, UDC 621.382:621.396.6-181.5.

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[I - USSR - F]

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

cuits, an important role is played by the choice of a constant current source.

The article analyzes the dependence of instability of the logic differential of the integrated circuits for the current switches on change in the destabilizing factors (supply voltage, temperature, and technological scatter in the component parameters) by using different modifications of the constant current source.

Recommendations are given for the optimal selection of the constant current source.

The article contains 4 figures, 1 table, and 5 bibliographic references.

UDC 539.186.3.211.27

Distribution of Thermoelastic Deformations in the Surface Region of Thermally Oxidized Silicon. Valiyev, K.A., Kozlov, B.I., Lukin, A.A., Malov, A.G., and Rakov, A.V. In the collection Mikroelektronika, edited by F.V. Lukin, No 5, p 282, Sovetskoye Radio Publishing House, 1972.

The article theoretically analyzes the distribution of elastic deformations in the surface region of thermally oxidized silicon. The authors examine the case of a dense oxide film on a semiconductor and the case of termination of its denseness. The value obtained agrees with the theoretical computation. The authors discuss the results of experiments testifying to the localization of the deformations in the surface layer of silicon at the sites of termination of denseness of the oxide. They show the influence of thermoelastic deformations on the chemical activity and volt-Faraday characteristics of the MDP structures.

The article contains 3 figures and 11 bibliographic references.

UDC 621.383.42:546.48.22/23

Investigation of the Longitudinal Operating Mode of CdS-CdSe Film Photoresistors. Vdovenkov, A.A., Krolevets, K.H., Komashko, V.A., and Skarzhevskaya, E.P. In the collection Mikroelektronika, edited by F.V. Lukin, No 5, p 296, Sovetskoye Radio Publishing House, 1972.

The article describes a manufacturing method and the parameters of the CdS-CdSe photoresistors, operating in a longitudinal mode. The authors mention their high specific sensitivity (0.5-1 A/V·lu) and the weak dependence of the

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

parameters on temperature of the surrounding atmosphere. They give a comparison of the parameters of the photoresistors during operation in longitudinal and transverse modes.

The article contains 11 figures and 6 bibliographic references.

UDC 621.383.311 → 621.396.6-181.416

Analysis of Several Characteristics of the Operation of a Resonance High-Frequency Hybrid-Film Amplifier Made According to a Circuit With a Common Emitter. Aksenov, A.I., D'yachkov, V.I., Korobeynikov, P.V., Shagimuratov, G.I., and Kutyrkin, Yu.M. In the Collection Mikroelektronika, edited by F.V. Lukin, No 5, p 310, Sovetskoye Radio Publishing House, 1972.

The article cites an analysis of the operation of a resonance microminiature high-frequency amplifier, operating in a linear mode. The authors show that with a constant time of the emitter circuit equal to zero, the magnitude of the capacitance of the blocking condensor is found to be the least. They also established that, for contemporary case-free high-frequency dynamic capacitances on the frequency characteristics of the cascade can be ignored.

The article contains 6 figures, 2 tables, and 6 bibliographic references.

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CSO: 0702/73-S

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

1/2 040 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ON THE MECHANISM OF ELECTROHUMINESCENCE OF CU SUBX S-ZNS:MN, CU, CL FILMS -U-

AUTHOR-(02)-VDOVENKOV, A.A., ZAKHAROV, V.P.

COUNTRY OF INFO--USSR

SOURCE--UKRAYIN. FIZ. ZH. (USSR), VOL. 15, NO. 5, P. 816-19 (MAY 1970)

DATE PUBLISHED----MAY70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--ELECTROLUMINESCENCE, SEMICONDUCTOR FILM, ELECTRON MICROSCOPE, SEMICONDUCTOR JUNCTION, ELECTRIC FIELD, IMPACT IONIZATION, COPPER SULFIDE, LAMINATED STRUCTURE, ZINC SULFIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1800 STEP NO--UR/0185/70/015/005/0816/0819

CIRC ACCESSION NO--AP0133705

UNCLASSIFIED

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2/2 040 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133705

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE D.C. ELECTROLUMINESCENT FILMS PREPARED BY VACUUM DEPOSITION OF CU SUB2 S AND ZN:MN, CU, CL PHOSPHOR LAYERS, ARE EXAMINED, USING A SCANNING ELECTRON MICROSCOPE. THERE IS THE ONLY N,P, (OR P,P PRIME POSITIVE),JUNCTION, WHICH IS NOT ALONG TO THE CU SUB2 S-ZNS INTERFACE AND IS LOCALIZED AT A DEPTH OF ABOUT 2 MU M FROM THE ANODE (AL UPPER ELECTRODE). THE ELECTRIC FIELD IN THE REVERSE BIASED JUNCTION REACHES THE VALUE OF AN ORDER OF 10 PRIMES V-CM, SUFFICIENT FOR THE IMPACT IONIZATION MECHANISM OF ELECTROLUMINESCENCE.

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USSR

UDC: 681.325.65:621.382

CHICHERIN, Yu. Ye., OVCHINNIKOV, V. V., DSHKHUNYAN, V. L., VDOVICHENKO, A. P.

"A Threshold Logic Element"

USSR Author's Certificate No 318163, filed 30 Jul 70, published 27 Jan 72 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 7, Jul 72, Abstract No 7A58 P)

Translation: The Author's certificate presents a logic element of the threshold type which contains a linear adder based on resistors and controlled by input diodes and which is connected, through biasing diodes with interconnected cathodes, to a discriminator. To improve the degree of integration and increase resistance to climatic effects as well as to simplify the device, the discriminator is based on a single two-emitter transistor with a collector resistor having one emitter connected to the linear adder and a bias resistor, while the second emitter is connected to a grounding line. The base of this transistor is connected to the grounding line through a biasing resistor. One illustration.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

Marine and Shipbuilding

USSR

UDC: 624.131.43+539.21.084-492.3

VDOVICHENKO, L. L., CHERNYSHOV, S. I.

"Experimental Investigation of the Effect Which the Size of the Specimen Has on the Compression Strength of Sea Ice"

V sb. Seysmostoykost' gidrotekhn. i port. sooruzh. Primor'ya. Ch. 1 (Seismic Resistance of Hydraulic and Port Structures of the Coastal Region--collection of works, Part 1), Vladivostok, 1971, pp 247-253 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7V545)

Translation: Experiments are done on compression of cubes of sea ice measuring 10, 20, 30, 45 and 60 cm on an edge. The salinity of the ice was from 4.3 to 8.3%, and the temperature of the specimens was about 4°C. The loading diagrams were similar for specimens of different sizes. Each such diagram consists of branches of rise and fall in loads. The duration of the rise in loads was as a rule 2.5 times that of the load fall-off. There was an increase in the time of rise and fall of loading with an increase in the dimensions of the specimen.

An appreciable reduction in compression strength is noted with an increase in specimen dimensions. For instance the 10-cm cubes had an

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USSR

VDOVICHENKO, L. L., CHERNYSHOV, S. I., Seysmostoykost' gidrotekhn. i port. sooruzh. Primor'ya. Ch. 1, Vladivostok, 1971, pp 247-253

average compression strength of 19.3 $kg \cdot cm^{-2}$, which decreased to 3.2 $kg \cdot cm^{-2}$ for 45-cm cubes. A comparison of the rules governing change of strength of sea-water and fresh-water ice showed that the strength of sea ice decreases more intensively with an increase in the dimensions of the specimen than does the strength of fresh-water ice. It is concluded in this connection that the scale effect for sea ice cannot be estimated from relations found in studying river ice. K. F. Voytkovskiy.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC: 681.3.001:518.5

VDOVICHENKO, M.V.

"Production of Analytic Calculations Using Digital Computers"

Nekotor. Vopr. Avtomatiz. Programmir [Some problems of automation of programming -- collection of works], Novosibirsk, Nauka Press, 1970, pp 94-108 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 3, 1971, Abstract No. 3B105 by BK).

Translation: A method is described for performance of analytic computations by digital computer using a special programming language, allowing elementary functions (EF) of the class in question to be coded. Operators acting on the machine code of the EF and converting it to a different EF code are presented. These operators allow compression of the EF code, its differentiation, opening of parentheses, conversion to a common denominator, combination of identical components, and other operations. To solve the problem, the program store of operators which are independent of type of function, the code of the function to be converted, instruction determining the order of use of the operators, and tables of constants are introduced to the computer. The program forms are presented for various operators. The use of this method is illustrated with examples. 3 biblio. ref.

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USSR

UDC 681.3.06:51

VDOVICHENKO, M. V.

"The Performance of Analytic Calculations by Digital Computer"

Nekotor. Vopr. Avtomatiz. Programmir., [Some Problems of Automation of Programming], Novosibirsk, Nauka Press, 1970, pp 94-108, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V647 by V. V'yachenko).

Translation: A class of elementary functions of one variable is studied and a language is described with which the coding of the elementary function for machine processing is performed. A class of machine operators is induced, capable of acting on the machine code of the elementary function. The machine operators can perform compression of the code of the function, opening of parentheses, reduction to a common denominator, combination of individual components, removal of a common factor from parentheses, reduction of individual factors to a numerator and denominator and a number of other operations. The transformation of elementary functions of one variable is also studied, which can be expressed through superposition of the initial operators. The machine operators are described and program samples are presented.

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USSR UDC 541.136

VDOVICHENKO, N. V., Moscow

"The Mechanism of Current Generation by Waterproofed Gas Diffusion Metal Ceramic Electrodes"

Moscow, Elektrokhimiya, Vol 8, No 5, May 72, pp 702-707

Abstract: A theoretical treatment of current generation is given for a model system. The type of electrode analyzed consists of an inactive porous base facing the electrolyte and an active layer facing the gas chamber. The active layer consists of a finely dispersed mixture of porous platinum agglomerates surrounded by granules of a hydrophobic material. An assumption is made that a system is obtained in which the concentration and potential of the electrolyte inside a particle of platinum granule could be considered constant. The gas then diffuses into the granule and a reaction takes place on the surface of its pores. Thus the problem of current generation can be limited to two processes: current generation by one granule and by the entire electrode. Oxygen and hydrogen electrodes are treated mathematically and electrochemical activity is reported graphically as a function of "gas porosity", and the current generated by 1 mg of platinum as a function of total quantity of platinum deposited on 1 cm^2 of the electrode surface.

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USSR

UDC 541.136

BARANOV, V. I., VDOVICHENKO, N. V., VLASOV, V. M., IVANOV, A. M., MUCHNIK, G. F., RUBASHOV, I. B., and TABAKMAN, L. S., Moscow

"Fuel Cells With ion Exchange Membranes. Development and Investigation"

Moscow, Elektrokhimiya, Vol 8, No 5, May 72, pp 694-698

Abstract: Fuel cells are described based on cation exchange resin membranes washed free of unbound acid. The use of solid electrolyte imparts certain specific properties to all physical processes occuring in the fuel cells, such as localization of elementary physical acts responsible for current generation. Current generation on the surface of the membrane could not possibly produce the total generated power, so that the electrode inside the membrane must have been contributing substantially to current generation. Several assumptions are made concerning this problem, and a conclusion is reached that current is generated by a thin layer of a catalyst inside the membrane partially filled with water. Two methods are used for water removal from the electrode surface -- thermal and hydraulic -- to assure proper performance of the unit. Thermal method is more versatile but requires a more

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BARANOV, V. I., et al, Elektrokhimiya, Vol 8, No 5, May 72, pp 694-698

complex equipment. The principal problem in this system concerns uniformity of the removal of water. Both types of current generators are described, pointing out the areas where development is still needed, mainly in synthesis of new materials for membranes.

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Acc. Nr.: AP0029495

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 1, pp 50-52

MECHANISM OF RESPIRATION INHIBITION BY TETRACYCLINE IN ASCITIC CELLS OF EHRLICH TUMOR

V. I. Vdovichenko

Lvov Medical Institute

With the Warburg manometric method it was shown that tetracycline hydrochloride in a concentration of 50 μg/ml inhibited endogenic respiration of Ehrlich tumor ascitic cells and absorption of O_2 by the cells using as the substrate glucose, pyruvate, lactate, citrate, α-ketoglutarate, fumarate or malate added to the medium and had no effect on oxydation of succinate or oxaloacetate.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC 616.981.452-084.47

AGAFONOV, V. I., BABKIN, Ye. I., VDOVIN, D. G., VOROBEYCHIKOV, V. M., VOROB'YEV, A. A., GAMLESHKO, Kh. P., GAPOCHKO, K. G., GEFEN, N. Ye., YEVSTIGNEYEV, V. I., YEMEL'YANOVA, O. V., ZEMSKOV, Ye. M., IMAMALIYEV, O. G., KAMALOV, I. I., KVIRIKADZE, V. V., KUTYREV, P. A., MISNIKOV, O. P., PUSHKAREV, V. P., and ROZDESTVENSKIY, D. A., Military Medical Academy imeni S. M. Kirov, Leningrad

"A Comparative Efficiency Characteristic of Different Immunization Methods Against Plague Infection"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 11, 1972, pp 106-112

Abstract: Analysis of the available literature data led to the conclusion that oral, aerogenic, and jet immunization methods are the most efficient compared with subcutaneous and skin methods. The average number of patients inoculated against plague infection was 517, 817 (419), and 937 per hr for jet injectors, aerogenic method liquid and dry vaccine, and oral method (tablets), respectively, compared with only 43 and 28 for the subcutaneous and skin methods, respectively.

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Acc. Nr.: AP0041157

Ref. Code: UR0121

USSR

UDC 621.924.6:621.833

MIL'SHTEYN, M. Z., KERBIKOV, L. S., VDOVIN, G. P.

"The Diamond Grinding of Hard-Alloy Shaver Teeth"

Moscow, Stanki i Instrument, No 1, 1970, pp 27-29

Abstract: The most labor-intensive operation in the production of shavers, an operation which determines their precision and durability, is grinding the profiles of the teeth. The Institute of Superhard Materials of the State Planning Commission of the Ukrainskaya SSR and the Moscow Tool Plant have developed and put into production a processing method for the diamond machining of disk shavers with detachable hard-alloy teeth. The article gives a description and the specifications of the equipment and process of grinding these teeth.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

ITLE--SYNTHESIS AND PYROLYSIS OF CYCLOBUTYLMETHYL TRIMETHYLSILANE -U-

UTHOR-(05)-NAMETKIN, N.S., GUSELNIKOV, L.YE., USHAKAVA, R.L., STARTSEVA, O.M., VDOVIN, V.M.

OUNTRY OF INFO--USSR

OURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 494-6

ATE PUBLISHED-------70

UBJECT AREAS--CHEMISTRY

OPIC TAGS--CHEMICAL SYNTHESIS, PYROLYSIS, ORGANIC SILANE, PLATINUM COMPOUND, CATALYST

ONTROL MARKING--NO RESTRICTIONS

OCUMENT CLASS--UNCLASSIFIED

ROXY REEL/FRAME--1997/0847 STEP NO--UR/0062/70/000/002/0494/0496

IRC ACCESSION NO--AP0119751

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

2/2 009 UNCLASSIFIED

IRC ACCESSION NO--AP0119751 PROCESSING DATE--30OCT70

BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDING 15.5 G METHYLENECYCLOBUTANE OVER 2 HR TO 23 G ME SUB2 SIHCI AND 0.2 ML H SUB2 PTCI SUB6 CATALYST IN THF, AND HEATING THE MIXT. 8 HR AT 110DEGREES GAVE 51PERCENT DIMETHYL(CYCLOBUTYLMETHYL) CHLOROSILANE, B. 167-8DEGREES, N PRIME20 SUBD 1.4465, D PRIME20 0.9296. THIS WITH MEMGI GAVE 55.4PERCENT (CYCLOBUTYLMETHYL) TRIMETHYLSILANE, B. 145DEGREES, 1.4310, 0.7816. PYROLYSIS IN A STATIC SYSTEM AT 430DEGREES GAVE 51PERCENT CH SUB2:CHCH SUB2 SIME SUB3 IN 30 MIN. IN AN IMPULSE PYROLYSIS AT 575DEGREES WITH 12 SEC CONTACT TIME, 61PERCENT CONVERISON WAS ATTAINED; THE AMT. OF SAMPLE DID NOT AFFECT THE CONVERSION, SHOWING THAT THE REACTION IS TRULY MONOMOL. AND FORMS THE ABOVE PRODUCT AND C SUB2 H SUB4.

FACILITY: INST. NEFTEKHIM.SIN. IM. TOPCHIEVA, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC 18:658.562

SOKOLOV, G. A., VERKHOVTSEV, E. V., KUNGUROV, V. M., SUROVYEV, A. G., VASIL'YEV, N. Ye., and VDOVIN, V. R., Lipetsk Branch of Moscow Institute of Steels and Alloys; Izhevsk Metallurgical Plant

"Refining Open-Hearth Steel With Synthetic White Slag"

Moscow, Metallurg, No 9, Sep 70, pp 17-19

Abstract: In searching for ways of cutting costs of liquid synthetic slags produced from the costly SiO_2 byproduct, this paper attempts to introduce new compositions of slags designed for out-of-the-furnace refining of steel. The new composition, comprising 45-55% CaO, 17-25% SiO_2, 5-10% MgO, 7-15% Al_2O_3, and 2-7% CaF_2, appears to possess the most favorable combination of physicochemical properties. Industrial treatment of 20KhN3A and 30KhGSA constructional open-hearth steels with synthetic slag of this composition reduced the sulfur content in the experimental steel by 55-70%. The final sulfur level in the treated steel was low and conformed with that of electric steel treated with lime-silica slag. The service characteristics of the experimental steel also appeared to reach the level of steels treated with standard liquid synthetic slags. White synthetic slag will make possible the production of top-quality steel at lower cost per charge. At the Izhevsk Metallurgical Plant the savings per ton of treated steel amounted to 2.2 rubles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC: 621.375.82

VDOVIN, Yu. A., GONCHUKOV, S. A., GUBIN, M. A., YERMACHENKO, V. M., ORAYEVSKIY, A. N., PROTSENKO, Ye. D.

"Effect of Atomic Collisions and Capture of Resonance Emission on the Characteristics of Gas Lasers"

Moscow, Vliyaniye atomnykh stolknoveniy i pleneniya rezonansnogo izlucheniya na kharakteristiki gazovykh lazerov. Fiz. in-t AN SSSR (cf. English above. Physics Institute of the Soviet Academy of Sciences), Preprint No 116, 1972, 57 pp, ill., mimeo. (from RZh-Fizika, No 8, Aug 73, abstract No 8D1000 [resume]

Translation: Polarization of a medium is calculated with accuracy to and including third-order terms for the field with simultaneous accounting for depolarizing collisions and capture of resonance radiation in the case of one-mode and two-mode gas laser emission. Results are found for several working transitions different from one another in the moment of the lower level and also for different polarizations of the emitted modes. A detailed study is made of the variation, with pressure, of different physical quantities in laser operation in the one-mode and two-mode state. A comparison is made between experimental and theoretical results obtained in computer calculations. In order to clarify the qualitative behavior of different characteristics, the authors find an approximation of their analytical expressions. Bibliography of 17 titles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC 621.378.335

VDOVIN, YU.A., GUBIN, M.A., YERMACHENKO, V.M., PROTSENKO, YE.D.

"Mode Competition At 3_{s2}--3_{p4} Neon Transition In A Laser With Methane Absorption Cell"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 6(12), 1972, pp 105-107

Abstract: Previous papers of which Gubin and Protsenko were coauthors reported on the obtainment of contrasting peaks of power and frequency stabilization in a helium-neon generator at the junction 3_{s2} --3_{p4} (λ = 3.39 micron) with a methane absorption cell. The high degree of contrast and contraction were obtained by virtue of the use of the effect of competition of axial modes arranged symmetrically with reference to the amplification line. The present paper studies the behavior of the intensity of one of the modes in a two-mode laser with an absorption cell and an orthogonal polarization of modes. The contrast, the width and position of the resonance peak of power relative to the center of the absorption line are determined. 4 ref. Received by editors, 1 Dec 1971.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203510006-2

USSR

UDC 678.742.2:66.018.86.01:53

VINOGRADSKAYA, Ye. L., AGAMALYAN, S. G., and VDOVINA, A. L.

"Influence of γ-Radiation on the Physical Mechanical Properties of Polyethylene and Polycarbonate"

Moscow, Plasticheskiye Massy, 7, 1973, pp 10-12

Abstract: A study was made of the influence of γ-radiation on the molecular structure of high density polyethylene (HDPE) and polycarbonate (PC). Increasing the dose to 25 millirads resulted in an increase in the stability limit during stretching for HDPE; increasing the dose from 25 to 200 millirads resulted in a decrease in σ_v. Density, module of elasticity, hardness, and fatigue stability for HDPE in general increased with increasing dose. The molecular weight and fatigue resistance decreased for PC. Values for other parameters are given. The radiation of HDPE results in "linking" processes and leads to the breakdown of spherulite formation, and to the breakup and subsequent compaction of the structural elements. In PC, however, irradiation results in destructive processes leading to the fragmentation of the polymers.

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Biochemistry

UDC 547.964.4+577.17

USSR

SHVACHKIN, YU. P., VDOVINA, R. G., POZNYAK, M. G., VOLUYSKAYA, YE. N., RYABTSEV, M. N., KRIVTSOV, V. F., GRACHEVA, A. K., KRASNOSHCHEKOV, S. P., NOVOSELOV, V. A., GRUZDEV, V. S., OLEYNIK, A. M., KALINKINA, Z. B., FEDOTOV, V. P., IVANOV, A. I., YUDAYEV, N. A.

"New Synthesis of Human Insulin"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 216-217

Abstract: Human insulin was synthesized on the basis of obtaining A and B chains by the solid phase method [R. B. Merrifield, J. Am. Chem. Soc., No 85, 2149, 1963; J. Stuart, et al., Tverdofazny sintez peptidov, Moscow, Mir, 1971] and subsequently combining the synthetic chains into the complete molecule of the biologically active hormone. Here, a new version of the synthesis is realized which permits exclusion of treatment of the chains with sodium in liquid ammonia which eliminates the danger of undesirable side reactions caused by this reagent [A. Marglin, et al., J. Am. Chem. Soc., No 88, 5051, 1966]. The A and B chains of human insulin were synthesized on an automated device using a spherical chloromethylated copolymer of styrene with 1% divinyl benzene as the insoluble carrier. All operations were performed in a nitrogen atmosphere. The derivatives of the L-amino acids used in the synthesis of the A and B chains are listed. The fluorohydrates of the chains were con-

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SHVACHKIN, YU. P., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 216-217

verted into S-sulfonates which exhibited no differences from the S-sulfonates of the corresponding natural chains of bull insulin. The synthetic A and B chains were recombined both with the corresponding natural chains and among each other. The resultant compounds had specific insulin activity of comparable magnitude to the previously synthesized insulin compounds [K. Lubke, et al., Adv. Enzymol., No 33, 445, 1970].

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Ref. Code: UR 0075

104571q Solubility products of 8-mercaptoquinolinates of certain metals. Kharkover, M. Z.; Barkovskii, V. F.; Viloving, V. M.; Guroya, L. P. (Ural State Univ., Sverdlovsk, USSR). Zh. Anal. Khim. 1970, 25(1), 30-3 (Russ). Soly. products of Co, Pb, Zn, V, Bi, and Mn 8-mercaptoquinolinates were detd. by an extn.-photometric method. Their negl logs are 29.60, 26.02, 29.44, 25.10, 46.81, and 15.94, resp. Soly. products of Fe, Mn, Ni, and Bi thiooxinates in $CHCl_3$ were detd. The following soly. scale was composed: Mn > V > Pb > Ni ~ Fe > Co ~ Zn > Bi. Conditions for sepg. those elements with thiooxine were calcd.

Chaim Weiner

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USSR

UDC 621.785.52:669.3

KVYATKOVSKIY, A. N., VDOVKIN, G. G., KUDINOV, B. V.

"Polarization of Vibrating Iron and Copper Electrodes in Sulfuric Acid Solutions of their Salts"

Sb. tr. N.-i. i proyekt. in-t po obogashch. rud tsvet. met. (Collected works of the Scientific Research and Planning and Design Institute with Respect to Beneficiation of Nonferrous Metal Ores), 1971, No 2, pp 64-73 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L320)

Translation: On the basis of the recorded polarization curves of the anode and cathode stages of the process of casehardening of copper in sulfuric acid solutions of natural salts on quiet and vibrating electrodes at 20-40 and 60° it was demonstrated that the electrode vibration lowers the concentration polarization of the cathode stage and has an insignificant effect on the variation of the anode polarization.

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USSR

UDC: 539.411

VDOVYKIN, G. P., DREMIN, A. N., PERSHIN, S. V., and SHEVALEYEVSKIY, I. D., Moscow

"Transformation of Meteorite Materials in Shock Compression Experiments at Pressures of 500 and 1000 kbar Set Up by Explosions"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 9, No 4, Jul-Aug 73, pp 535-541

Abstract: The authors conducted experiments on the shock compression (non-destructive) of Migeya carbonaceous chondrite at p = 500 kbar and of the graphite of the Yardymlinskiy iron meteorite at p = 1000 kbar. This was done in order to explain the transformations of meteorite substances under the effect of strong shock waves. Diamonds and microcrystals (less than one micron) were synthesized which are found in concretions with graphite. The diamonds and microcrystals were synthesized from Mineya carbonaceous chondrite and the graphite of the Yardymlinskiy iron meteorite. The synthetic diamond-graphite concretions are similar to those of meteorities with respect to morphology and phase composition. The results show that ureilites are secondary meteorites with respect to their origin which were formed from carbonaceous chondrites under the effect of strong shock waves in space.

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Food Technology

USSR UDC 613.27:629.78.048

VEBER, M. I. and OKLADNIKOV, Yu. N., Institute of Physics im. L.V. Kirenskiy, Siberian Department of the Academy of Sciences USSR, Krasnoyarsk

"Mineral Content of the Diet of Biological Life Support System Testers"

Moscow, Voprosy Pitaniya, No 2, 1973, pp 24-26

Abstracts: Three human subjects subsisted for 30 days on one of two diets in a hermetically sealed chamber to ensure strict control of the amount of minerals consumed with food. One diet consisted wholly of lyophilized foods of various kinds. In the other, the vegetables were gradually replaced by vegetables grown in a phytotron (greenhouse) forming part of a closed life support system. The amount of phosphorus, magnesium, sulfur, potassium, sodium, and calcium was found to be largely the same in both diets, which met the recommended physiological standards.

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