USSR

UDC: 531.382:629.78.015

SHILOV, A. A., Central Aerohydrodynamics Institute imeni N. Ye. Zhukovskiy, Moscow

"Analytical Evaluation of the Influence of Mobility of a Small Internal Mass on Oscillations of a Body During Deceleration in the Atmosphere"

Moscow, Doklady Akademii Nauk SSSR, Vol 207, No 5, 11 Dec 72, pp 1073-1077

Abstract: Assuming that the interaction between a vehicle and a mass moving over a sphere inside the vehicle conforms to the law of Coulomb friction, the author analyzes the nature of the damping effect from a moving weight. The theoretical solution is reduced to compact analytical expressions. It is found that the mobility of the load reduces static stability, and therefore sets up a destabilizing positional torque on the vehicle. However, due to the effect of friction, this torque is delayed with respect to the angle of rotation of the vehicle, and is thus equivalent to a leading stabilizing torque, resulting in damping.

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USSR

UDC 535.376:621.382

POPOV, Yu. V., SHILOV, A. F., MANAK, I. S., KOBAK, I. A., FIGURIN, V. A.

"Nonuniformity of Glow and Percentage Modulation Lengthwise of P-N Junction in GaAs Diodes"

Vestn. Belorus. un-ta (Bulletin of Belorussian University), 1970, Series 1, No 3, pp 63-64 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5B232)

Translation: The results are presented of a study of the nonuniformity of glow and percentage modulation of a p-n junction in GaAs diodes, which can be accounted for by the nonuniformity of distribution of impurities. 2 ill. 4 ref. Summary.

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1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--MECHANISM OF THE CATALYTIC ACTION OF A MOLYBDENUM TIN CHLORIDE -U-

AUTHOR--KHRUSHCH, A.P., SHILOV, A.E.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(1), 86-90

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ETHANE, DEUTERIUM COMPOUND, MOLYBDENUM, TIN CHLORIDE, CATALYST ACTIVITY, CATALYTIC HYDROGENATION, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0198 STEP NO--UR/0195/70/011/001/0086/0090

CIRC ACCESSION NO--AP0106854

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106854

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MONO AND DIDEUTERIOETHANE ARE THE MAIN PRODUCTS IN THE INITIAL STAGE OF C SUB2 H SUB4 DEUTERATION IN THE PRESENCE OF HOMOGENEOUS CATALYTIC MIXT. OF MOCL SUB5-SNCL SUB2 IN TETRAHYDROFURAN. CATALYTIC HYDROGENATION OF C SUB2 H SUB4 IS A 1ST ORDER REACTION WITH RESPECT TO MO, C SUB2 H SUB2, AND H CONCN. AND ITS ACTIVATION ENERGY IS 18 KCAL-MOLE. HYDROGENATION ON MOCL SUB5-SNCL SUB2 CATALYST INVOLVES INSERTION OF C SUB2 H SUB4 INTO MO-H BOND AND A SUBSEQUENT HYDRATION OF THE THUS FORMED ET-MO TO C SUB6 H SUB6.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THERMODYNAMICS AND KINETICS OF THE REDUCTIVE FIXATION OF MOLECULAR NITROGEN -U-
AUTHOR-(02)-LIKHTENSHTEYN, G.I., SHILOV, A.YE.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(4), 849-56

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYSIS, CHEMICAL REDUCTION, NITROGEN REACTION RATE, CHEMICAL BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1420 STEP NO--UR/0076/70/044/004/0849/0856

CIRC ACCESSION NO--AP0135094
UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135094

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GENERAL DIAGRAM OF THE PROBABLE ROUTES OF THE CATALYTIC REDN. OF N SUB2, UNDER MILD CONDITIONS, IS PRESENTED. THE PROCESS REQUIRES THE PRESENCE OF CATALYSTS WITH AN ABS. POTENTIAL, EPSILON, OF 1.4 EV, WHICH FORM, WITH THE N SUB2 MOL., A COMPLEX WITH DOUBLE OR TRIPLE BONDS BETWEEN N ATOMS. THE REDN. OF N SUB2 IS POSSIBLE WITH CATALYSTS HAVING EPSILON AS LOW AS 0.2-0.3 EV, WHEN THESE CATALYSTS FORM A LABILE COMPLEX WITH THE N SUB2 MOL. IN WHICH THE BOND BETWEEN THE TWO N ATOMS IS OF A CHARACTER INTERMEDIATE BETWEEN A DOUBLE AND A TRIPLE BOND. THE MECHANISM OF N FIXING ENZYMES FULFILLS THE DESCRIBED REQUIREMENTS.

FACILITY: INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--PREPARATION AND STUDY OF COMPLEXES OF RUTHENIUM II WITH MOLECULAR NITROGEN -U-

AUTHOR-(03)-BORODKO, YU.G., SHILOVA, A.K., SHILOV, A.YE.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 627-31

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, RUTHENIUM COMPOUND, METAL COMPLEX COMPOUND, IR SPECTRUM, TETRAHYDROFURAN, ORGANIC COMPLEX COMPOUND, CHEMICAL REDUCTION, CHEMICAL BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/2041 STEP NO--UR/0076/70/044/003/0627/0631

CIRC ACCESSION NO--AP0132298

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132298

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPLEXES OF RU PRIME2 POSITIVE WITH MOL. N AND SOME OTHER LIGANDS WERE PREPD. AND STUDIED BY IR SPECTRA MEASUREMENT. (RUN SUB2 CL SUB2 (H SUB2 O) SUB2 (THF)) (WHERE THF IS TETRAHYDROFURAN) IS FORMED DURING THE REDN. OF RUCL SUB3.NH SUB2 O BY ZN IN THF SOLN. SATD. WITH N IN AN AUTOCLAVE. BASES STRONGER THAN THF AND H SUB2 O, ADDED TO THE SOLN. OF THE COMPLEX, REPLACE THF AND H SUB2 O IN THE COMPLEX, THE N BEING KEPT IN THE COORDINATION SPHERE. IN THIS WAY, A SERIES OF COMPLEXES OF THE TYPE (RUN SUB2 L SUB5) PRIME2 POSITIVE WAS PREPD., IN WHICH L EQUALS THF, H SUB2 O, C SUB5 H SUB5 N, CH SUB2 (NH SUB2) SUB2, AND NH SUB3. THE FORCE CONSTS. OF THE BONDS N TRIPLE BOND N, RU-N SUB2, AND THEIR INTERACTION CONST. WERE CALCD.: K SUB1 EQUALS 29.3 TIMES 10 PRIME6 CM PRIME NEGATIVE2, K SUB2 EQUALS 5.48 TIMES 10 PRIME6 CM PRIME NEGATIVE2, AND K SUB12 EQUALS 1.25 TIMES 10 PRIME6 CM PRIME NEGATIVE2, RESP. THE N MOL. IN THE COMPLEXES IS NOT REDUCED TO NH SUB3 BY NABH SUB4, NA SUB2 S SUB2 O SUB4, CRCL SUB3, ZN PLUS HCL, OR PHMGBR. THE IR ABSORPTION BANDS OF THE COMPLEXES ARE TABULATED. FACILITY: INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

TITLE--FORMATION OF HYDRAZINE DURING THE REDUCTION OF MOLECULAR NITROGEN IN SOLUTIONS OF TITANIUM COMPLEXES -U-

PROCESSING DATE--13NOV70

AUTHOR-(02)-SHILOV, A.YE., SHILOVA, A.K.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 288

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDRAZINE, NITROGEN, TITANIUM COMPOUND, COMPLEX COMPOUND, CHEMICAL REDUCTION, HYDROLYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0471

STEP NO--UR/0076/70/044/001/0288/0288

CIRC ACCESSION NO--AP0107077

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0107077

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BINUCLEAR COMPLEXES OF LOWER VALENT DERIVS. OF TI WITH N SUB2 ARE FORMED ON REACTION OF RMGX (R EQUALS ET, ISO-PR; X EQUALS CL, BR) WITH (ET SUB2)TICL SUB2 IN THE PRESENCE OF N. IN ETHER SOLN. AT GREATER THAN MINUS 80DEGREES, THE N IN THE COMPLEX UNDERGOES REDN. TO A HYDRAZINE DERIV., FROM WHICH HYDRAZINE IS EVOLVED UPON HYDROLYSIS. THE RATE OF FORMATION OF THE HYDRAZINE DERIV. INCREASES WITH INCREASE IN THE AMT. OF RMGX. THESE RESULTS ARE IN GOOD AGREEMENT WITH THE IDEA OF THE 4 ELECTRON MECHANISM OF THE REDN. OF N SINCE THE 1ST INTERMEDIATE PRODUCT OF THE REDN. OF A BINUCLEAR COMPLEX X-M...N SUB2...M-X MUST BE A DERIV. OF HYDRAZINE MXNNXM.

FACILITY: INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

UDC 541.49:546.73+541.31

USSR

DIYACHKOVSKIY, F. S., KHRUSHCH, N. YE., SHILOV, A. YE., Institute of Chemical Physics, Moscow, Academy of Sciences USSR

"Reaction of Methyl(tris)triphenylphosphine Cobalt With Unsaturated Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1726-1730

Abstract: At room temperature the toluene solution of $CH_3Co(PPh_3)_3$ (I) gradually changes its color from orange to brown, producing methane, ethane, toluene, benzene, and some PPh_3 in the reaction vessel. At -120C such solutions are relatively stable. When (I) is reacted with a series of olefines and organic bases, a rapid color change takes place with liberation of gases, their quantity depending on the olefine used. In general, it is shown that the reaction of (I) with unsaturated compounds results in an interaction of the cobalt methyl group with the olefines in the coordination sphere of the metal without intermediary formation of free radicals. When hexene and divinyl are reacted with (I), π-allyl derivatives

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USSR

D'YACHKOVSKIY, F. S., et al, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1726-1730

of cobalt are formed. The reaction rate of organic and unsaturated compounds with (I) increases with an increased trend in the transition $d_{\pi} \rightarrow p_{\pi}$ from metal to the olefine.

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Powder Metallurgy

UDC 621.762:669.18.95

USSR

PALATNIK, L. S., KAGAN, YA. I., SHILOV, I. F., BELYAYEV, YU. I., BOGDANOVA, A. F., KOBYLEV, P. P., KOLESNIK, B. I., and KUDINOV, D. D., Khar'kov Polytechnic Institute imeni V. I. Lenin

"On the Micro- and Macroheterogeneity of the SAS-1 Alloy"

Kiev, Poroshkovaya Metallurgiya, No 4, Apr 73, pp 22-28

Abstract: A study was made of the physical and chemical heterogeneity of the SAS-1 aluminum sintered alloy. The luminescence method of flaw detection using metallography was employed in the investigation of the physical heterogeneity of the alloy. The nature, dimensions and statistical distribution of pores appearing in the alloy in the process of its production and subsequent treatment were determined. The parameters of the luminisescence method were corrected for the purpose of obtaining maximum sensitivity during the investigation of alloy microporosity. It was shown that with selected optimalcoconditions local pores with dmensions 10 x 15 x 25 μm can be reliably detected. The problems of the appearance of chemical heterogeneity of the alloy in micro- and macrovolumes were considered. Assumptions are advanced whose realization will result in a decreased number of macro- and micro-flaws in the SAS-1 alloy.

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USSR

UDC 669.71.042.6

SHILOV, I. F., GET'MAN, A. A.

"Effect of Shrinkage Processes on the Mechanical Processes of Castings Made of Light Alloys"

Usadochn. protessy v splavakh i otlivkakh -- V sb. (Shrinkage Processes in Alloys and Castings -- collection of works), Kiev, Naukova Dumka Press, 1970, pp 268-292 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G188)

Translation: The process of formation of shrinkage defects is investigated as a function of the structural design of cast parts made of light alloys. Their effect on the mechanical properties of the products is established. There are 2 illustrations and 2 tables.

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UDC 547.241.07

USSR

NIFANT'YEV, E. YE., SHILOV, I. V., Moscow State University imeni M. V. Lomonosov

"A Method of Making Tetralkyl Diamides of α-Dialkylaminophosphonic Acid"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 17, 1971, Author's Certificate No 304257, Division C, filed 24 Dec 1969, published 25 May 1971, p 86

Translation: This Author's Certificate introduces: 1. A method of making tetralkyl diamides of α-dialkylaminophosphonic acid. As a distinguishing feature of the patent, phosphorous acid dianide is interacted with aminal in the presence of heat with subsequent isolation of the goal product by coventional methods. 2. A modification of this method distinguished by the fact that the process is carried out at a temperature of 130-150°C. 3. A modification of this method distinguished by the fact that the process is carried out in the presence of catalytic quantities of sodium.

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USSR

NIFANT'YEV, E. YE., AND SHILOV, I. V.

"Synthetic Method for Diamidothiolophosphates"

USSR Author's certificate no 355181, filed 22 Apr 70, published 20 Nov 72 (from RZh-Khimiya, No 19, Oct 73, Abstract No 19N536 P)

Translation: Diamidodithiolophosphates are obtained by reacting the salt of diamidothiophosphoric acid with alkyl halides. To 24 g of the salt of triethylamine and tetraethyldiamidothiophosphoric acid, 8 g of EtBr is added, stirred for 20 min at 50°, filtered, and distilled yielding 11 g of tetraethyldiamidoethylthiolophosphate, b. p. 102-4/1, n_D^{20} 1.4900, d_4^{20} 1.0219. Analogously the following were obtained (the product, b.p. in °C/mm, n_D^{20}, d_4^{20} being reported): tetramethyldiamidoethylthiolophosphate, 72-3/1, 1.5064, 1.0810; tetramethyldiamidobutylthiolophosphate, 93-4/1, 1.4973, 1.0423; tetraethyldiamidobutylthiolophosphate. 140-5/1, 1.5080, 1.0648.

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UDC 547.26'118

USSR

NIFANT'YEV, E. Ye., and SHILOV, I. V., Moscow State University imeni M. V. Lomonosov

"Magnesium Salts of the Tetraalkyldiamidophosphorous Acids. Synthesis and Reactions With Electrophilic Reagents"

Moscow, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2654-2657

Abstract: Diamides of the phosphorous acid react easily with Grignard reagents forming respective magnesium salts which add energetically to multiple bonds. In this fashion various amides have been obtained starting from functionally substituted phosphonic acids: tetramethyldiamide of p-chlorophenylcarbamoylphosphonous acid, m.p. 112-114°; cyclohexylamide of cyclohexyliminotetraethyldiamidophosphoneformic acid, m.p. 151-152°.

UDC 547.26'118

USSR

NIFANT'YEV, E. Ye., and SHILOV, I. V., Moscow State University imeni M. V. Lomonosov

"Addition of Sulfur to the Diamides of Phosphorous Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2658-2660

Abstract: Phosphorous acid diamides add sulfur much more sluggishly than other hydrophosphoryl compounds, the reaction taking place only in presence of amines. The more basic the amine is used, the faster is the reaction. The ammonium salts of diamidothiophosphoric acids can be easily alkylated with alkyl halides forming diamidothiolphosphates.

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UDC 547.26'118

USSR

NIFANT'YEV, E. YE., and SHILOV, I. V., Moscow State University Imeni M. V. Lomonosov

"Acid Amides of Phosphorous Acid as Phosphorylating Agents"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, pp 1936-1939

Abstract: Acid amides of phosphorous acid phosphorylate nucleophilic reagents with a labile hydrogen atom, analogously to the neutral amides of phosphorous acids. With mercaptans and hydrogen chloride acid amides of phosphorous acids react by changing the coordination number of the phosphorus compound; from tetracoordinated form, phosphorus is converted to tricoordinated form. Reaction temperature of acid amides depends on the structural factors. For example, tetramethylamide of phosphorous acid reacts with phenol at 70-80°, while the tetraethylamide -- at 110-130°C.

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UDC 547.26'118

USSR

NIFTANT'EV, E. E. and [redacted]OVLOV, I. V., Moscow State University imeni M. V. Lomonosov

"Reaction of the Tertiary Amides and Amidoesters of Phosphorous Acid, with Benzaldehyde"

Leningrad, Zhurnal Obshchey Khimii, Vol XLI, No 11, Nov 1971, pp 2372-2375

Abstract: Reactions of amides of trivalent phosphorus with nucleophilic compounds of type RXH have already been well studied, but further development of our knowledge of the reactivity of this class of amides requires a comparison of the results of catalytic and noncatalytic variants of the reaction of these substances with nucleophilic compounds not containing a mobile hydrogen atom. For tests with benzaldehyde carbon dioxide was chosen as a nucleophile. The reaction of hexamethyltriamide of phosphorous acid with benzaldehyde, was studied both in the absence and in the presence of the amine hydrochloride. It was concluded that in reactions of the tertiary amides of phosphorous acid with benzaldehyde, a catalytic role is playing by the amine hydrochloride. The product of this reaction is the tertiary α-aminobenzylphosphonic acid; without the amine hydrochloride, the reaction does not take place. Second, in the reaction of the amido ester of phosphorous with benzaldehyde, the hydrochloride

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USSR

NIFTANT'YEV, E.YE and SHISHOV, I. V., Zhurnal Obshchey Khimii, Vol XLI, No 11, Nov 1971, pp 2372-2375

also plays a catalytic role. If a proton donor is present in the reaction mixture, then the corresponding α-aminophosphonate is formed; if not, the aminophosphate is formed.

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UDC 547.26'118

USSR

NIFANT'YEV, E. Ye., and SHILOV, I. V., Moscow, State University imeni M. V. Lomonosov

"Investigation of Tetraalkyldiamides of Phosphorous Acid. Aminoalkylation"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 3, Mar 72, pp 503-506

Abstract: Amides of α-aminophosphonic acids are synthesized by aminoalkylation of acid amides of phosphorous acid with aminals and Schiff bases. It is found that the acid phosphamides in these reactions are less reactive than dialkyl phosphites and amidoesters of phosphorous acid. A study is made of the synthesis of acid amides of phosphorous acid by partial hydrolysis and acidolysis of complete phosphamides. It is shown that the technical products of these reactions have a high degree of purity and can be used in organophosphorus synthesis without preliminary purification.

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USSR

UDC 547.26'118

SHILOV, I. V., and NIFANT'YEV, E. YE., Moscow State University imeni M. V. Lomonosov

"Synthesis of Acid Amides of Phosphoric Acid"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 44, No 11, Nov 71, pp 2581-2584

Abstract: Three methods for the synthesis of acid amides of phosphoric acid are reported. The goal was to get the products pure enought to omit final distillation. One route consisted of partial hydrolysis of intermediate amides of phosphoric acid:

$$(R_3N)_3P + H_2O \longrightarrow (R_2N)_2P(:O)OH + R_2NH.$$

The ease with which the reaction occurs depends on the radical: the hexabutyltriamide reacts at room temperature, the hexaethyl derivative needs a pH 3 medium, while the hexamethyltriamide has to be heated to 60-70°. Another method involved the reaction of complete amides of phosphoric acid with phosphoric acid; this reaction is exothermic, and the product obtained is sufficiently pure to be used without distillation. Hydrolysis of carbamoylphosphites was tried, but the product obtained was impure.

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UDC 547.26'118

USSR

NIFANT'YEV, E. Ye., and SHILOV, I. V., Moscow State University imeni M. V. Lomonosov

"New Types of Reactions of Phosphorous Acid Hydrogen Amides"

Leningrad, Zhurnal Obshchey Khimii, Sep 70, Vol 41, No 9, pp 2104-2105

Abstract: It was found that acid amides undergo a characteristic and specific type of rearrangement in which they act as secondary amine donors. The reaction of phosphorous acid tetralkylamides with isocyanates yield corresponding ureas. The treatment of phosphorous acid tetramethyldiamide with phenyl isocyanate yields N-phenyl-N',N'-diethylurea in 60% yield. Ureas were similarly synthesized by the reaction of phosphorus acid tetramethyldiamide with methyl isocyanate, o- and m-chlorophenyl isocyanates and o-naphthyl isocyanate. The reaction is not common to other compounds. Thus, the reaction of phosphorous acid tetraethyldiamide with phenyl isocyanate and p-chlorophenyl isocyanate yields full amides of carbamoylphosphonic acids. Phenylcarbamoylphosphonic acid tetraethyldiamide was obtained in 33% yield. p-Chlorophenylcarbamylphosphonic acid tetraethyldiamide gave a 45% yield. The reaction of phosphorus acid diamides with ketones yields enamines.

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USSR UDC 547.26'118

NIFANT'EV, E. Ye., IVANOVA, N. L., GUDKOVA, I. P., SHIHOV, I. V. Moscow State University imeni M. V. Lomonosov

"Acid Catalysis in the Reaction of Amides of Trivalent Phosphorus Acids with Mercaptans and Carbonyl Compounds"

Leningrad, Zhurnal Obshcei Khimii, Vol 40, No 6, Jun 70, pp 1420-1421

Abstract: Phosphorus acid amides (I) readily react with aliphatic mercaptans in the presence of acetic acid, yielding thiol esters. Carboxylation of I takes place only in the presence of acidic compounds. It is possible that this mechanism involves initial protonation of the P atom. Our previously proposed mechanism for the formation of α-aminophosphonates involving only the amidophosphite and an aldehyde does not agree with the experimental data. It is probable that also in this case, the mechanism is based on a preliminary protonation step.

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UDC 547.298.1.118.07

USSR

NIFANT'YEV, E. Ye., and SHILOV, I. V., Moscow State University imeni M. V. Lomonosov

"A Method of Making Acid Amides of Phosphorous Acid"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, Jan 71, Author's Certificate No 289093, division C, filed 24 Dec 69, published 8 Dec 70, p 77

Translation: This Author's Certificate introduces a method of making acid amides of phosphorous acid by hydrolyzing phosphorous acid derivatives and isolating the goal product by conventional methods. As a distinguishing feature of the patent, the method is simplified by using diamidocarbamoyl phosphite as the phosphorous acid derivative.

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UDC 547.26'118

USSR

SHILOV, I. V., and NIFANT'YEV, E. Ye., Moscow State University Imeni M. V. Lomonosov

"Proton Lability in Tetraalkyldiamides of Phosphorous Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, pp 581-584

Abstract: It has been determined that the rate constant for the deutero exchange in treatment of phosphorous acid tetraethyldiamide with heavy water is 8 times smaller than the respective constant for dibutylphosphite. Due to the lower lability of the proton at the hydrophosphoryl fragment of phosphorous acid diamides as compared to dialkylphosphites, the reactions of incomplete phosphamides along the P-H bond occur as a rule under more drastic conditions. Addition of incomplete amides of phosphorous acid to unsaturated compounds has been carried out by means of activated electron accepting groups. In contrast to dialkylphosphites this addition occurs in presence of equimolar quantities of sodium alkoxide.

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USSR

NIFANT'YEV, E. Ye., SHILOV, I. V.

"Method of Production of Diamidothiolophosphates"

Otkrytiya Izobreteniya Promyshlennye Obraztsy Tovarnyye Znaki, No 5, 1972, Patent No 355181.

Translation: Method of production of diamidothiolophosphates based on amides of phosphorus acids, differing in that in order to improve the process, the salts of diamidothiophosphoric acids are interacted with alkyl halides.

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UDC: 681.332.65

USSR

SHILOV, L. V.

"A Ring Counter"

USSR Author's Certificate No 278218, filed 26 May 69, published 18 Feb 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B230 P)

Translation: Ring counters are known which are based on a single-cycle ferrite-diode shift register with a controlled discharge circuit having an output to a digital display tube. In such counters, the indication circuit is constructed on the basis of ten glow-discharge thyratrons with the cathodes of the digital display tube connected to the anodes of the thyratrons while the thyratron grids are connected to the output windings of the ferrite cores. A disadvantage of this circuitry for the display device is complexity due to the necessity of using a stand-by counter based on ten thyratrons with individual supply sources. The proposed ring counter, in which the display circuit is simplified, is economical and reliable in operation To achieve this purpose, the core in the "1" position in the display mode

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USSR

SHILOV, L. V., Soviet Patent No 278218

in the proposed ferrite-diode ring counter is converted to the state of a dynamic flip-flop whose output pulses are converted to negative potential by a rectifier and fed to the corresponding cathode of the digital display tube, lighting the proper digit. For this purpose, the ferrite core for each digital place in the counter contains an auxiliary record winding connected at one end through an isolating diode to the capacitor of the delay circuit for the given core; and at the other end, to a transistorized display-enable switch. The core also contains an additional output winding connected at one end through a rectifier to the corresponding cathode of the digital tube; and at the other, to the display-enable switch. The main record winding of each ferrite core is connected to the grounding line through the transistorized count-enable switch. Both transistorized switches are common to all counters.

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UDC 576.851.252.095.10

USSR

PROKHOROV, V. Ya., SHILOV, V. M., AKATOV, A. K., and PARCHINSKAYA, I. A., Institute of Medical Biological Problems and Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Activation of the Biological Properties of Staphylococci Isolated From Humans During a Prolonged Stay in a Hermetically Sealed Chamber"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 63-68

Abstract: Staphylococci were periodically isolated from three people confined to an airtight chamber for a year to study the biological properties of the microorganisms and determine whether the microbes could be exchanged between the subjects. Various strains of the same phage type (29/52) showed increased biological activity in the course of the year as manifested by a regular increase in the titers of alpha-toxin, appearance of fibrinolysin and beta-toxin not detected at the beginning of the experiment, and much greater virulence for mice. Before the experiment, Staphylococci of the phage type 29/52 were isolated from two of the subjects, but they were transmitted to the third subject at the beginning of the second month and

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USSR

PROKHOROV, V. Ya., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 63-68

after causing a pyoderma in the fourth month persisted until the end of the experiment. Prolonged isolation apparently lowers human resistance to infection and creates favorable conditions for the growth of Staphylococci.

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SHILOV, V. M.

JPRS 55687
12 Aug 1972

UDC 612.336.31-06:612.766.2

CHANGES IN INTESTINAL MICROFLORA DURING MAN'S LONG-TERM CONFINEMENT IN AN ISOLATION CHAMBER

[Article by V. M. Shilov, N. N. Liz'ko, and O. K. Borisova; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 1, pp 78-81, 1972, submitted for publication 2 November 1970]

Abstract: This paper gives the results of a study of human intestinal microflora during a one-year medico-engineering experiment. The long-term isolation induces substantial shifts in the composition of intestinal microflora which include a drastic reduction of the population of different microbial groups and even a complete disappearance of certain representatives of microorganisms. Simulations of emergency situations which cause an increased physiological load upon the human body bring about more specific changes in the composition of microflora.

The prolonged confinement of cosmonauts in a pressurized cabin under modified environmental conditions with simultaneous exposure to a number of spaceflight factors (accelerations, ionizing radiations, special diet, restricted mobility, etc.) can lead to unfavorable shifts in the composition of intestinal microflora and a change in its biological properties.

The results of a study of normal intestinal microflora indicate the multisided importance of intestinal microflora in body vital functions. Its positive influence is related primarily to the synthesis of vitamins, enzymatic and antagonistic properties (Donaldson; Wolf; Zubrzycki and Spaulding; Reddy, et al., and others). However, in addition to a useful effect, the constant inhabitants of the intestinal tract under definite conditions can exert an unfavorable influence favoring the development of pathology (L. G. Peretts, 1955; Haenel, and others). However, in the case of exposure of the body in an isolation chamber no adequate study has yet been made of normal intestinal microflora. Only individual studies give information on the change in intestinal microflora in individuals confined to an isolation chamber (Luckey; Bengson and Thomas; Benson; Riely, et al.; Vargosko, et al.).

USSR UDC 537.3:541.11"762"

SHILOV, V. N., Institute of Colloid Chemistry and the Chemistry of Water, Academy of Sciences Ukr. SSR, Kiev

"Application of the Thermodynamics of Irreversible Processes to the Theory of Orientation Effects in Disperse Systems in an External Electric Field"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 5, 1971, pp 1161-1164

Abstract: The theory of thermodynamics of irreversible processes is applied to solving the problem of the orientation of particles in a liquid medium under the effect of an external electric field. By applying a treatment based on this theory, the problem in question can be reduced to the reverse problem of formation of an electric field under the effect of a rotating dipole. The problem then becomes much easier to solve, because the effect on the distribution of the velocities of the liquid of the electric field that forms can be neglected and consideration of the braking effect of a diffuse atmosphere can be avoided, which leads to hydrodynamic equations that are very complicated because of the necessity of taking into account space charges in the double electric layer.

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920018-5"

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--THEORY OF LOW FREQUENCY DISPERSION OF THE DIELECTRIC PERMITTIVITY OF SPHERICAL COLLOICAL PARTICLES SUSPENSIONS CAUSED BY POLARIZATION OF

AUTHOR-(02)-SHILOV, V.N., DUKHIN, S.S.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 293-300

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--PERMITTIVITY, PIELECTRIC PROPERTY, CHEMICAL DISPERSION, COLLOID, CHEMICAL SUSPENSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0133 STEP NO--UR/0069/70/032/002/0293/0300

CIRC ACCESSION NO--AP0110099
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 012
CIRC ACCESSION NO--AP0110099
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF THE POLARIZATION THEORY OF THE DIFFUSE SIDE OF A THIN ELECTRIC DOUBLE LAYER IN A. C. FIELD, DEVELOPED IN THE PRECEDING PAPER, A FORMULA HAS BEEN DERIVED FOR THE LOW FREQUENCY DISPERSION OF THE DIELECTRIC PERMITTIVITY (DP) OF DILUTED COLLOID SOLUTIONS. VERY HIGH DP VALUES OBSERVED CAN BE EXPLAINED WITHOUT RECOURSE TO SCHWARZ'S HYPOTHESIS AS BEING DUE TO POLARIZATION OF THE DIFFUSE IONIC ATMOSPHERE OF THE PARTICLES. AFTER CORRECTION OF AN ERROR IN SCHWARTZ'S THEORY, DP CALCULATED ON THE BASIS OF SCHWARZ'S MODEL PROVED TO BE BY AN ORDER OF MAGNITUDE LESS THAN IN EXPERIMENT. INASMUCH AS THE DEVELOPED THEORY, WHICH TAKES ACCOUNT ONLY OF THE DIFFUSE ATMOSPHERE POLARIZATION, AGREES SATISFACTORILY IWTH EXPERIMENT, IT IS SUGGESTED THAT THE LOW FREQUENCY DISPERSION MEASUREMENTS SHOULD BE USED FOR THE STUDY OF THE DOUBLE LAYER AROUND THE PARTICLES, IN PARTICLES, IN PARTICULAR FOR THE DETERMINATION OF THE STERN POTENTIAL.

UNCLASSIFIED

Acc. Nr: AP0036181 Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1, pp 117-123

POLARIZATION THEORY OF THE DIFFUSE PART OF A THIN DOUBLE-LAYER AT A SPHERICAL PARTICLE IN ALTERNATING ELECTRIC FIELD

V. N. Shilov; S. S. Dukhin

Summary

In the range of not too high frequencies the polarization theory of a thin double layer at a particle in alternating electric field can be developed on the basis of the method used earlier in the steady-state polarization theory. A formula for the induced dipole moment of the particle has been derived. The frequency dependence of the double layer polarization is determined by the ions diffusion and thus an essential change in the dipole moment is observed at the frequency of the order of D_e/a^2 (D_e — effective ion diffusivity, d — particle radius).

D.R.

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REEL/FRAME
19721000

USSR

UDC 541.51:546.799.3

KROT, N. N., MEFOD'YEVA, M. P., SHILOV, V. P. and GEL'MAN, A. D.

"Heptavalent State of Transuranium Elements. IX. New Methods for Obtaining Neptunium (VII). Disproportionation of Neptunium (VI) in Alkaline Media"

Leningrad, Radiokhimiya 12, No 3, 1970, pp 471-477

Abstract: In dilute alkaline solutions, neptunium (VI) is reversibly oxidized to the heptavalent state by ferricyanide ions. For a constant value of the ionic strength, the equilibrium constant of the reaction is proportional to $[OH^-]^3$. The interaction of neptunium (VI) with silver oxides was studied in alkaline media. It was established that silver suboxide oxidizes neptunium (VI) to an appreciable extent only in solutions with an alkali concentration of more than 8 M. In the presence of AgO, neptunium (VII) is formed with 0.2M KOH. Neptunium (VI) is practically quantitatively oxidized by an excess of AgO when the alkali concentration is 2-3 M. An excess of $KBrO_3$ (at 290-310°) or $KClO_3$ (at 390-400°) will completely and rapidly oxidize neptunium to the heptavalent state in alkali metal melts. The interaction of NpO_2 with the above oxidizing agents is slow and does not go to completion. In some alkaline solutions, neptunium (VI) is to a substantial extent disproportionated into neptunium (VII) and (V). The equilibrium constant of this extremely rapid reaction increases sharply with increasing alkali concentration.

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1/2 031 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ABSORPTION AND DISTRIBUTION OF CESIUM 137 IN CALVES OF DIFFERENT AGES -U-

AUTHOR-(03)-SIROTKIN, A.N., SHILOV, V.P., KORNEYEV, N.A.

COUNTRY OF INFO--USSR

SOURCE--RADIOBIOLOGIYA 1970, 10(2), 309

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CESIUM ISOTOPE, DAIRY CATTLE, RADIOACTIVE CONTAMINATION, MUSCLE TISSUE, BONE, SKIN, LIVER, KIDNEY, LUNG, HEART, BLOOD PLASMA, SPLEEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605004/B11 STEP NO--UR/0205/70/010/002/0309/0309

CIRC ACCESSION NO--AP0139606

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 031
CIRC ACCESSION NO--AP0139606
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISTRIBUTION OF PRIME137 CS AND ITS RESORPTION FROM THE GASTROINTESTINAL TRACT HAS BEEN STUDIED IN 12 CALVES OF DIFFERENT AGES FOLLOWING SINGLE PERORAL OR I.V. ADMINISTRATION. RESORPTION DEPENDED ON CALF AGE AND IN 3, 9, 14, AND 26 MONTHS OLD CALVES IT WAS 81-93, 57, 58, AND 53-9PERCENT OF THE DOSE APPLIED, RESP. OUT OF THE RESORBED AMT. OF PRIME137 CS, 7.27-13.0 WAS FOUND IN MUSCLES, 0.77-3.7 IN THE SKELETON, 0.74-2.86 IN THE LIVER, 1.14-2.72 IN THE SKIN, 0.18-1.73 IN THE KIDNEYS, 0.42-1.38 IN THE LUNGS, 0.24-1.66 IN THE HEART, 0.70-1.56 IN THE BLOOD, 0.22-0.49 IN THE BLOOD PLASMA, AND 0.09-0.28PERCENT IN THE SPLEEN. MAX. CONCN. OF PRIME137 CS, ADMINISTERED PERORALLY, IN VARIOUS PARTS OF THE SKELETON OF CALVES 3, 9, 14, AND 26 MONTHS OLD DIFFERED FROM THE MIN. CONCN. BY A FACTOR OF 8.7, 7.0, 4.3, AND 4.5, RESP., AND AFTER I.V. ADMINISTRATION, BY A FACTOR OF 7.0, 4.0, 3.3, AND 2.5, RESP.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--KINETICS OF IODOLACTONIZATION OF ANIONS OF ALKENE AND ALKADIENECARBOXYLIC ACIDS -U-

AUTHOR-(03)-STANINETS, V.I., SHILOV, YE.A., KORYAK, E.B.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(4), 363-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--REACTION KINETICS, ALKENE, DIENE, CARBOXYLIC ACID ESTER, IODINE, LACTONE, CYCLIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----F070/605019/C01 STEP NO--UR/0073/70/036/004/0363/0367

CIRC ACCESSION NO--AP0140914

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0140914
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF ALKENE AND ALKADIENECARBOXYLATE IONS WITH IODINE TO FORM CYCLIC IODOLACTONES IS BISMOL. THE FOLLOWING KINETIC CONSTS. ARE REPORTED (ION, K SUB2 AT 20DEGREES IN L. MOLE NEGATIVE PRIME1 SEC NEGATIVE PRIME1, E SUBA KCAL MOLE NEGATIVE PRIME1, LOG ALPHA, AND NO. OF ATOMS IN THE RING GIVEN: (FORMULAS SHOWN ON MICROFICHE). THE DIFFERENCE IN RATES FOR I AND II IS ATTRIBUTED TO THE NECESSITY OF CONVERTING I TO II BEFORE CYCLIZATION.
FACILITY: INST. ORG. KHIM. KIEV, USSR.

UNCLASSIFIED

USSR

UDC 911.3.613.11

SKOROBOGATOVA, A. N., PARAMONOV, Yu. A., LUKACHEV, V. V., ZABORSAKIN, V. A., SHILOV, Yu. M., GRISHCHENKO, K. F.

"The Significance of Some Factors in Polar Regions for the Formation of Adaptation Processes"

V sb. Akklimatiz. i kraevy. patol. cheloveka na Severe (Acclimatization and Regional Pathology of Man in the Far North--collection of works), Arkhangel'sk, 1970, pp 66-68 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No. 1.36.43 by V. Zhadovskaya)

Translation: This work includes data gathered in the Antarctic, Central Arctic Basin, and experimental research in a cooling chamber. The parameters studied were: arterial pressure, pulse rate, plethysmogram, rheogram, and skin temperature in 112 polar residents. The most marked shifts occurred in new arrivals or in those who returned after an absence of 5-6 years; as well as in those polar residents with high arterial pressure. In conditions where volume charge is increased and relationsnip of atmospheric elements is altered, there is a decrease of skin sensitivity to low temperature. A disturbance of the balance between sympathetic and parasympathetic regulation of cardiovascular activity is also observed.

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1/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--PREPARATION AND STUDY OF COMPLEXES OF RUTHENIUM II WITH MOLECULAR NITROGEN -U-

AUTHOR-(03)-BORODKO, YU.G., SHILOVA, A.K., SHILOV, A.YE.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 627-31

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, RUTHENIUM COMPOUND, METAL COMPLEX COMPOUND, IR SPECTRUM, TETRAHYDROFURAN, ORGANIC COMPLEX COMPOUND, CHEMICAL REDUCTION, CHEMICAL BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/2041 STEP NO--UR/0076/70/044/003/0627/0631

CIRC ACCESSION NO--AP0132298

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132298

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPLEXES OF RU PRIME2 POSITIVE WITH MOL. N AND SOME OTHER LIGANDS WERE PREPD. AND STUDIED BY IR SPECTRA MEASUREMENT. (RUN SUB2 CL SUB2 (H SUB2 O) SUB2 (THF)) (WHERE THF IS TETRAHYDROFURAN) IS FORMED DURING THE REDN. OF RUCL SUB3.NH SUB2 O BY ZN IN THE SOLN. SATD. WITH N IN AN AUTOCLAVE. BASES STRONGER THAN THF AND H SUB2 O, ADDED TO THE SOLN. OF THE COMPLEX, REPLACE THF AND H SUB2 O IN THE COMPLEX, THE N BEING KEPT IN THE COORDINATION SPHERE. IN THIS WAY, A SERIES OF COMPLEXES OF THE TYPE (RUN SUB2 L SUB5) PRIME2 POSITIVE WAS PREPD., IN WHICH L EQUALS THF, H SUB2 O, C SUB5 H SUB5 N, CH SUB2 (NH SUB2) SUB2, AND NH SUB3. THE FORCE CONSTS. OF THE BONDS N TRIPLE BOND N, RU-N SUB2, AND THEIR INTERACTION CONST. WERE CALCD.: K SUB1 EQUALS 29.3 TIMES 10 PRIME6 CM PRIME NEGATIVE2, K SUB2 EQUALS 5.48 TIMES 10 PRIME6 CM PRIME NEGATIVE2, AND K SUB12 EQUALS 1.25 TIMES 10 PRIME6 CM PRIME NEGATIVE2, RESP. THE N MOL. IN THE COMPLEXES IS NOT REDUCED TO NH SUB3 BY NABH SUB4, NA SUB2 S SUB2 O SUB4, CRCL SUB3, ZN PLUS HCL, OR PHMGBR. THE IR ABSORPTION BANDS OF THE COMPLEXES ARE TABULATED. FACILITY: INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--FORMATION OF HYDRAZINE DURING THE REDUCTION OF MOLECULAR NITROGEN IN SOLUTIONS OF TITANIUM COMPLEXES -U-

AUTHOR-(02)-SHILOV, A.YE., SHILOVA, A.K.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 288

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDRAZINE, NITROGEN, TITANIUM COMPOUND, COMPLEX COMPOUND, CHEMICAL REDUCTION, HYDROLYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0471 STEP NO--UR/0076/70/044/001/0288/0288

CIRC ACCESSION NO--AP0107077
UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0107077

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BINUCLEAR COMPLEXES OF LOWER VALENT DERIVS. OF TI WITH N SUB2 ARE FORMED ON REACTION OF RMGX (R EQUALS ET, ISO-PR; X EQUALS CL, BR) WITH (ET SUB2)TICL SUB2 IN THE PRESENCE OF N. IN ETHER SOLN. AT GREATER THAN MINUS 80DEGREES. THE N IN THE COMPLEX UNDERGOES REDN. TO A HYDRAZINE DERIV., FROM WHICH HYDRAZINE IS EVOLVED UPON HYDROLYSIS. THE RATE OF FORMATION OF THE HYDRAZINE DERIV. INCREASES WITH INCREASE IN THE AMT. OF RMGX. THESE RESULTS ARE IN GOOD AGREEMENT WITH THE IDEA OF THE 4 ELECTRON MECHANISM OF THE REDN. OF N SINCE THE 1ST INTERMEDIATE PRODUCT OF THE REDN. OF A BINUCLEAR COMPLEX X-M...N SUB2...M-X MUST BE A DERIV. OF HYDRAZINE MXNNXM. FACILITY: INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

USSR

UDC 669.71.053.2(088.8)

GROSHEV, G. L., DANOV, S. M., YURLOVA, Z. I., SHILOVA, A. V., CHAUSOVSKIY, D. A., MOVSHEVICH, Yu. M., and SHAROV, A. V.

"Method of Producing Anhydrous Aluminum Chloride"

USSR Author's Certificate No 268397, Filed 8/04/68, Published 13/07/70 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G132 P)

Translation: A method is presented for producing anhydrous $AlCl_3$ from Na tetrachloroaluminate at elevated temperatures. To simplify the process, the Na tetrachloroaluminate is treated with gaseous NH_3, the ammoniates formed are evaporated and condensed, and metallic Al is added to them with subsequent heating to 800-850° in a medium of an inert gas such as N_2.

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1/2 013 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--ALUMINUM CHLORIDE MONOAMMONIATE AS A CATALYST FOR THE HYDROCHLORINATION OF ALUMINUM IN A MELT -U-

AUTHOR-(04)-YURLOVA, Z.I., GROSHEV, G.L., DANOV, S.M., SHILOVA, A.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 894-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALUMINUM CHLORIDE, CATALYST, CHLORINATION, ALUMINUN, CATALYST ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0949 STEP NO--UR/0080/70/043/004/0894/0895

CIRC ACCESSION NO--AP0131534

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0131534

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FEASIBILITY OF INCREASING THE SPEED OF HYDROCHLORINATION OF AL IN A MELT BY USING THE MONOAMMONIATE OF ALCL SUB3 AS A HCL ACCEPTOR WAS STUDIED. THE CATALYTIC ACTIVITY OF THE MONOAMMONIATE WAS ATTRIBUTED TO THE FORMATION OF A COMPLEX WITH HCL CONTG. UP TO 3 MOLES OF HCL PER MOLE OF MONOAMMONIATE.

UNCLASSIFIED

USSR

UDC 616.857-085.7:612.223.3

PANIKARSKIY, V. G., and SHILOVA, E. N., Kiev Oblast Clinical Hospital

"Effect of Biotron and Drug Treatment on Headaches"

Kiev, Vrachebnoye Delo, No 11, Nov 70, pp 77-80

Abstract: Weather conditions have a considerable effect on patients with hypertension. Drug therapy may be ineffective in the treatment of these patients if the weather conditions disturb the equilibrium between the patients' organism and the environment to such an extent that the capacity of the organism for adaptation is exhausted. In the treatment of headaches superinduced by hypertension in a group of 128 patients (65 men and 63 women), administration of drugs (motherwort extract with bromine, depressin, KCl, analgin, papaverine, and dibazol) for 6-15 days was ineffective. The patients were transferred to the biotron department (wards with an artificially controlled microclimate). As a result of a stay in the biotron department, the headaches were cured completely in 85.15 percent of the cases and alleviated in 14.06 percent of the cases. The condition of the patients was also improved in other respects. Under the influence of the controlled conditions in the biotron, the arterial pressure of the patients also dropped.

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USSR

UDC 681.3.001:518.5

SHILOVA, G.A.

"Analysis of Productivity of Two Models of Computers"

Tr. Mosk. Aviats. In-ta [Works of Moscow Aviation Institute], No. 194, 1970, pp 29-36 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 3, 1971, Abstract No. 3B89 by A.Sh.).

Translation: Results from analysis of two models of computers are presented: a digital computer model operating in a cyclical mode of performance of instructions of programs, and a model of a digital computer operating in the mode of combination of performance of the program with loading of memory from peripheral devices. Specific queueing systems are studied as models. Analytic expressions are obtained for relative productivity in the case of exponential distributions of servicing time in units. In the synthesis of computer structures operating in the mode of simultaneous performance of operations by various units the models of the computers should be looked upon as specific queueing systems. Two models of digital computers reflecting certain possible situations of operation of the machine are studied. 2 biblio. refs.

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USSR

UDC 621.111.2/3-0.53:612.273.2

SHILOVA, L. N., Chair of Normal Physiology, Ivanovo State Medical Institute

"Erythropoietic Activity of Blood Plasma in Postnatal Ontogenesis of Dogs Subjected to Interrupted Hypoxia"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 6, No 3, May/Jun, 70, pp 339-340

Abstract: A study was made of adaptative reactions of 19 adult dogs and 36 puppies to oxygen deprivation in the first three months of life. Oxygen deprivation was induced by two-hour simulated ascents to 8,000 meters over a period of 6-12 days. Erythropoietic activity of blood plasma (partially free of proteins) was determined by multiple administration of plasma to fasting white mice, after which indicators of erythropoiesis were examined. A total of 199 mice were studied. Hypoxia was found to increase erythropoietic activity in adult dogs and in three-month-old puppies.

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USSR

SHILOVA, M. N.

UDC 911.3.616.981.452(574)

"The Distribution and Population of the Yellow Suslik in Desert Landscapes of North Ustyurt and Cis-Ustyurt in Relation to Its Epizootiological Significance"

Materialy k poznaniyu fauny i flory SSSR (MOIP) (Handbook for Identification of Fauna and Flora of the USSR. Moscow Society of Naturalists), vyp. 45 (60), 1970, pp 207-212 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.120 by Yu. Dubrovskiy)

Translation: The yellow suslik is distributed over the whole territory of North Ustyurt and Cis-ustyurt. The population density is, on the whole, insignificant: of all animals caught during 1948-1961 for epizootic study, 0.2% were susliks. Their remains were found in eagle owl digestive remains in 1.3% cases in Ustyurt and in 0.4% in Cis-ustyurt. The animals were comparatively numerous only in packed sands (Sam, Mataykum, Agmagut, western feeding areas of the southern part of Bol'shiye Barsuki), along ravine edges and bluffs (in the Ustyurt in general and around its outskirts in particular), in dry valleys (in Cis-ustyurt in general and particularly in the Chegan valley), on old beds and oases (the natural boundary of the Dongustay in the

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USSR

SHILOVA, M. N., Materialy k poznaniyu fauny i flory SSSR (MOIP) (Handbook for Identification of Fauna and Flora of the USSR. Moscow Society of Naturalists), vyp. 45 (60), 1970, pp 207-212 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.120 by Yu. Dubrovskiy)

area of the Aktumsuk settlement). Yellow susliks frequently visit the burrows of great gerbils (the chief plague vectors and inhabit these burrows. Among bones gathered at the surface of the gerbil burrows, yellow suslik remains comprise 5.2% in Ustyurt and only 1.2 in Cis-ustyurt. Thus the yellow suslik, despite its small numbers, has significant epizootiological significance in plague foci. Plague-infected susliks have often been found on the Krasnovodskiy Peninsula; occasionally in the North Aral area, and occasionally in the Ustyurt. The low incidence of plague-infected yellow susliks in the Ustyurt and their absence in the Cis-urtyurt can best be explained by the small numbers of animals of this species which were investigated. A map is provided indicating distribution and population density of the yellow suslik in Northern Usyurt and Cis-ustyurt.

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1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EFFECT OF EXTERNAL VOLTAGE ON HIGH VOLTAGE PHOTOELECTROMOTIVE FORCE ON LEAD SULFIDE LAYERS -U-

AUTHOR-(02)-SHILOVA, M.V., KARPOVICH, I.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 129-30

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--LEAD SULFIDE, PHOTOELECTROMOTIVE FORCE, VOLT AMPERE CHARACTERISTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1544 STEP NO--UR/0139/70/013/002/0129/0130

CIRC ACCESSION NO--AT0123482

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0123482

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A LINEAR INCREASE IN PHOTO EMF. (DELTAV) WAS OBTAINED WITH INCREASES IN APPLIED EXTERNAL VOLTAGE. THE KINETICS OF DELTAV DECREASE AFTER VOLTAGE REMOVAL WAS LOGARITHMIC. DELTAV IS THE RESULT OF IONIC MIGRATION UNDER THE ACTION OF THE APPLIED EXTERNAL VOLTAGE. FACILITY: GOR'K. ISSLED. FIZ.-TEKH. INST., GORKI, USSR.

UNCLASSIFIED

1/3 038 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--GEOACTIVITY OF SOLAR FLARES AS A FUNCTION OF BRIGHTNESS OF METAL LINES IN THEIR SPECTRA, GEOACTIVITY OF SOLAR FLARES -U-

AUTHOR-(02)-DOINTSOVA, I.N., SHILOVA, N.S.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, GEOMAGNETIZM I AERONOMIYA, VOL X, NO 2, 1970, PP 326-328

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SOLAR FLARE, LUMINESCENCE, SOLAR DISC, SOLAR LIMB, IONIZING RADIATION, IONOSPHERE, RADIO EMISSION, SOLAR ATMOSPHERE, METAL, GEOACTIVITY, GEOMAGNETISM, GEOMAGNETIC DISTURBANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1658 STEP NO--UR/0203/70/010/002/0326/0328

CIRC ACCESSION NO--AP0109654

UNCLASSIFIED

2/3 038 UNCLASSIFIED

CIRC ACCESSION NO--AP0109654 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GEOACTIVITY OF FLARES WAS INVESTIGATED IN RELATION TO THE INTENSITY OF LUMINESCENCE OF LINES OF METALS IN THEIR SPECTRA. THE STUDY INCLUDED 104 FLARES DURING 1957-1961 AND SOME IN 1956 AND 1963. ONLY DISK FLARES WERE USED BECAUSE A LIMB FLARE CAN BE PART OF A MORE POWERFUL FLARE SITUATED NEAR IT ON THE FAR SIDE AND THE EFFECTS CAN BE SUPERPOSED. IF MORE THAT 10 MINUTES ELAPSED BETWEEN OBSERVATION OF LUMINESCENCE OF METALS AND THE FLARE MAXIMUM IN HPHI IT WAS EXCLUDED FROM CONSIDERATION BECAUSE THE TIME OF THE MAXIMUM INTENSITY OF METALS IN A FLARE COINCIDES WITH THE TIME OF MAXIMUM HPHI INTENSITY. EMISSION OF METALS WAS CLASSIFIED AS WEAK, MODERATE OR STRONG. FLARES OF A PARTICULAR IMPORTANCE HAVE A BROADER SPECTRUM OF GEOACTIVE IONIZING RADIATION ACTING ON DIFFERENT LAYERS OF THE IONOSPHERE THE GREATER THE INTENSITY OF LUMINESCENCE OF METAL LINES IN THEM. FOR MOST FLARES WITH MODERATE AND STRONG INTENSITIES OF METAL LINES EFFECTS ARE OBSERVED IN THE D AND E LAYERS AND SOMETIMES EVEN IN F2. IN MOST CASES NO IONOSPHERIC EFFECTS ARE OBSERVED WHEN THERE IS NO LUMINESCENCE OF METALS IN A FLARE. FLARES WITH THE SAME INTENSITY OF METAL LINES BUT OF DIFFERENT IMPORTANCE EVIDENTLY HAVE THE SAME WIDTH OF THE SPECTRUM OF GEOACTIVE RADIATION. WITHIN EACH IMPORTANCE CATEGORY IT IS CLEAR THAT THE STRONGER THE LUMINESCENCE OF METALS, THE GREATER IS THE NUMBER OF IONOSPHERIC LEVELS AFFECTED BY IT.

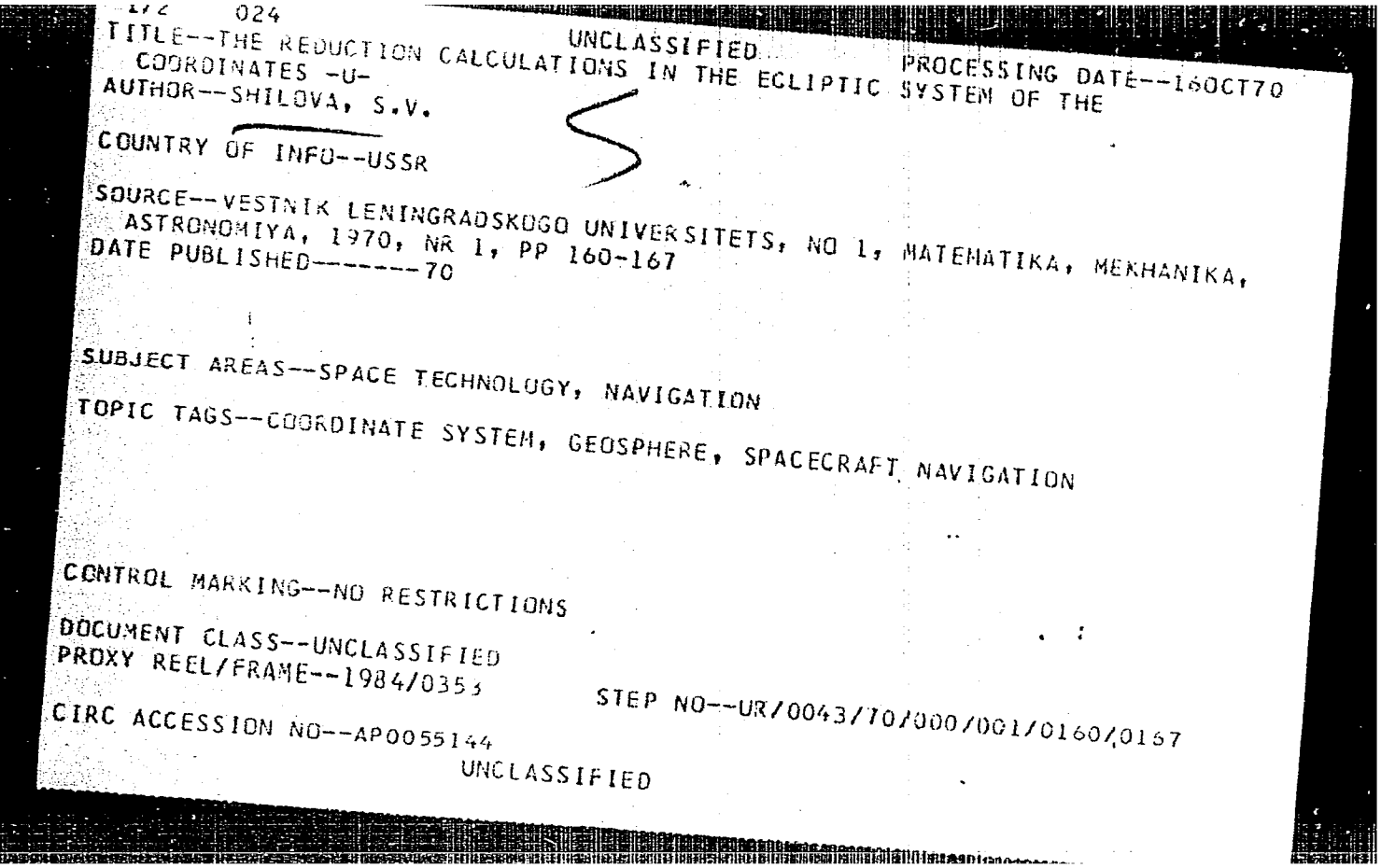
UNCLASSIFIED

3/3 038 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0109654

ABSTRACT/EXTRACT--WHEN THE INTENSITY OF LUMINESCENCE OF METALS IS GREATER THAN 1PLUS RADIO BURSTS ARE STRONGEST IN THE CENTIMETER RANGE; WHEN THE BRIGHTNESS OF METALS IS LESS THAN 1PLUS RADIO BURSTS IN THE METER RANGE CAN BE STRONGER THAN BURSTS IN THE CENTIMETER RANGE. STRONG LUMINESCENCE OF METALS OCCURS PRIMARILY IN THE DENSE LAYERS OF THE SOLAR ATMOSPHERE SINCE IN THE CASE OF STRONG LUMINESCENCE THE STRONGEST RADIO EMISSION IS IN THE CENTIMETER RANGE, WHEREAS METER RADIO EMISSION EMANATES FROM OUTER LAYERS OF THE SOLAR ATMOSPHERE. THE MOST GEOEFFECTIVE FLARES ACCOMPANIED BY STRONG EMISSION OF METALS THEREFORE ARISE IN THE LOWER LAYERS OF THE SOLAR ATMOSPHERE.

UNCLASSIFIED



172 024 UNCLASSIFIED

TITLE--THE REDUCTION CALCULATIONS IN THE ECLIPTIC SYSTEM OF THE COORDINATES -U-

PROCESSING DATE--16OCT70

AUTHOR--SHILOVA, S.V.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK LENINGRADSKOGO UNIVERSITETS, NO 1, MATEMATIKA, MEKHANIKA, ASTRONOMIYA, 1970, NR 1, PP 160-167

DATE PUBLISHED-------70

SUBJECT AREAS--SPACE TECHNOLOGY, NAVIGATION

TOPIC TAGS--COORDINATE SYSTEM, GEOSPHERE, SPACECRAFT NAVIGATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0353

STEP NO--UR/0043/70/000/001/0160/0167

CIRC ACCESSION NO--AP0055144

UNCLASSIFIED

CIRC ACCESSION NO--AP0055144 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ECLIPTIC SYSTEM OF THE COORDINATES WILL BE MORE ACCEPTABLE THAN THE EQUATOR SYSTEM FOR COSMIC FLIGHTS AND UNEARTH OBSERVATIONS. IN THIS ARTICLE WE SUGGEST THE CONVERSION OF THE COORDINATES AND THE PROPERTY MOTIONS FROM THE EQUATOR SYSTEM INTO THE ECLIPTIC SYSTEM. WE GET THE PRECISE FORMULAS (7), (11), (16), (20) FOR THE CONVERSION OF THE ECLIPTIC COORDINATES FROM ONE EPOCH INTO ANOTHER ONE. WE SUGGEST THE FORMULA (38) FOR THE REDUCTION OF THE ECLIPTIC COORDINATES TO THE VISIBLE PLACE.

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920018-5"

USSR

UDC 669.71.017:539.3/5.01

SHILOVA, Ye. I., and NIKITAYEVA, O. G.

"The Effect of Grain Sizes on Properties of Sheets of the AK4-1 and D16 Alloys"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970, pp 33-37, resume

Translation: Results are presented of an investigation of the effect of grain sizes in sheets of the D16 and AK4-1 alloys on mechanical and corrosion properties. Seven figures, one table.

1/1

USSR

UDC 911.3.616.981.452(574)

KRYLOVA, K. T., and SHILOVA, Ye. S.

"The Epizootiological Significance of the Ecological Characteristics of the Yellow Suslik in the Aral Sea Coastal Region"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of works) Vyp. 4 (14). Saratov, 1970, pp 172-177 (from RZh-Meditsinskaya Geografiya, No 4, Abstract No 4.36.95)

Translation: The yellow suslik in the northern part of the Aral Sea coastal region is usually found along its sand masses and in packed sands. The sporadic character of the suslik population is related to intensification of activity in the area. It is usual to find, in the Aral coastal region, joint populations of yellow susliks and great gerbils (susliks populate up to 60% of gerbil colonies). This means susliks are always involved in plague epizootics. The amount of plague cultures isolated from this species is usually small, but the participation of the yellow suslik in the epizootics can be significant in some years. Susliks can apparently maintain agent survival in individual focus areas.

1/1

AA0052661

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 2/70

243574 DISPERSER FOR PREPARING IMPREGNATION MATERIAL, e.g. size of increased uniformity and quality .in this disperser fitted with conventional coaxial moving hollow cylinders, the water and loose materials enter already mixed together, separately from the highly viscous polyacrylamide which is "minced" as it passes through a perforated disc (shown on the left of the drawing).

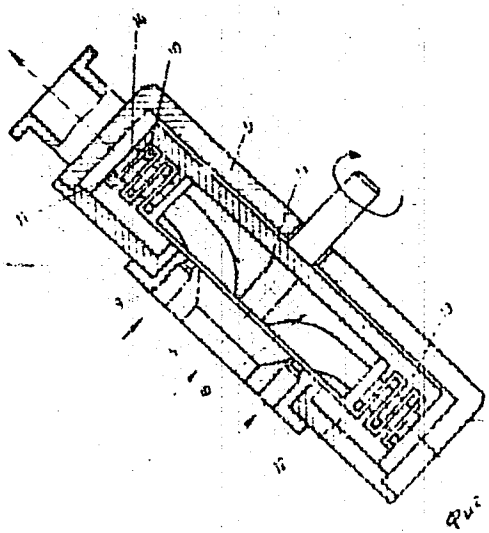
Shilovskiy, V. M.; Mel'nikov, Yu. V.; Vasil'yanovskiy, N. P.

Proizvodstvenno--Tekhnicheskoye Predpriyatiye "Tadzhikpromavtomatika"

1/3

19821406

AA0052661



3/3

19821408

USSR

UDC 621.357.7.035.4:669.128(088.8)

(1)

BABENKO, B. A., DUNISHCHEV, P. A., MITRYAKOVA, A. V., CHECHETKINA, V. A., and SHILOVSKIYA, V. P., Saratov Polytechnical Institute

"A Process for the Reduction of Oxidized Chloride Electrolyte for Iron Plating"

Author's Certificate No 346389, filed 25 Dec 70, published 22 Aug 72 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L316P)

Translation: The process is patented for the reduction of oxidized chloride electrolyte of iron plating during its purification by electrolysis. It is improved in that in order to increase the speed of the reduction, the process is carried out with the application of ultrasonic vibrations having frequencies of 18-22 kHz and an intensity of 0.8-1.5 watts/cm^2 for a ratio of the anode to cathode surface of 3:1 and D_a 10-30 amps/decimeter^2. The application of the ultrasonic vibrations speeds up the process of the reduction of the oxidized chloride electrolyte during the iron plating 7 to 10 fold.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--INTERACTION OF BENZENECYCLOPENTADIENYLIRON FLUROBORATE WITH SODIUM NAPHTHALENE -U-

AUTHOR-(03)-NESMEYANOV, A.N., VOLKENAU, N.A., SHILOVTSEVA, L.S.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(2), 354-6

DATE PUBLISHED--------70

S

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IRON COMPOUND, BORON FLUORIDE, ORGANOSODIUM COMPOUND, NAPHTHALENE, REACTION TEMPERATURE, SOLVENT ACTION, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/2023 STEP NO--UR/0020/70/190/002/0354/0356

CIRC ACCESSION NO--AT0112978

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AT0112978

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION IS: 2(C SUB6 H SUB6 FEC SUB5 H SUB5)BF SUB4 PLUS (C SUB10 H SUB8) NEGATIVE NA POSITIVE MINUS(THF) YIELDS (C SUB5 H SUB5) SUB2FE PLUS 2C SUB6 H SUB6 PLUS (FE) PLUS 2NABF SUB4 PLUS C SUB10 H SUB8. THE FOLLOWING WERE OBSD. (RATIO OF REACTANTS, TEMP., SOLVENT, AND PERCENT YIELD (C SUB5 H SUB5) SUB2 FE GIVEN): 1:1, 20-5DEGREES, THF, 41; 1:1.25, 40DEGREES, THF, 42; 1:2, 20-5DEGREES, THF-MECN, 61.5; 1:2, MINUS 20DEGREES, THF-MECN, 33; 1:2, 20-5DEGREES, (MEOCH SUB2) SUB2, 50. WHEN THE REACTION MIXT. WAS TREATED WITH AQ. TL SUB2 SO SUB4 AND KOH, C SUB5 H SUB5 TL WAS OBTAINED.

FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--PHOTODISPROPORTIONATION OF ARENE CYCLOPENTADIENYL IRON COMPOUNDS -U-

AUTHOR-(03)-NESMEYANOV, A.N., VOLKENAU, N.A., SHILOVTSEVA, L.S.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR, 1970, 190(4), 857-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IRON COMPOUND, FERROCENE, UV RADIATION, ORGANIC SOLVENT, ABSORPTION SPECTRUM, PHOTOCHEMISTRY, BORON FLUORIDE, FURAN, DIOXANE, ETHYL ETHER, ACETONITRILE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1562 STEP NO--UR/0020/70/190/004/0857/0859

CIRC ACCESSION NO--AT0100180

UNCLASSIFIED

2/2 029 UNCLASSIFIED

CIRC ACCESSION NO--AT0100180 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UV IRRADN. OF C SUB6 H SUB6 FEC SUB5 H SUB5.BF SUB4 YIELDS UP TO 100PERCENT FERROCENE, FREE AROM. HYDROCARBON, AND INORG. FE AS FE(BF SUB4) SUB2. THE FOLLOWING PERCENT YIELDS OF THE REACTION WERE OBSD. IN INDICATED SOLVENTS: THF 76; DIOXANE 42; (CH SUB2 OME) SUB2 15; ET SUB2 O 10; MEOPH, 0; ETOAC, TRACE; MECN, 20; ME SUB2 CO, 15; AC SUB2 O, 8; ACOH, 0; H SUB2 O, TRACE; MEOH, 0; ETOH, 0; C SUB6 H SUB6 TRACE; PHNH SUB2, 3; PYRIDINE, 2. THE YIELDS WERE 0 IN PETROLEUM ETHER, MENO SUB2, ME SUB2 NCHO, ME SUB2 SO, MORPHOLINE, AND PIPERIDINE. NO DIRECT CONNECTION BETWEEN THE ABSORPTION SPECTRUM OF THE SOLVENT AND ITS REACTION EFFECTIVENESS WAS OBSD. THE FOLLOWING PERCENT YIELDS OF FERROCENE FROM SIMILAR DISPROPORTIONATION OF ARFEC SUB5 H SUB5 CATIONS WERE OBSD. UNDER THESE CONDITIONS (RUN IN THF): C SUB6 H SUB6, 42; MEPH, 32; 2,5-ME SUB2 C SUB6 H SUB4, 30; 1,3,5-ME SUB3 C SUB6 H SUB3, 20; CLPH, 30; MEOPH, 25; HO SUB2 CPH, 30; WITH ZERO YIELD FOR AR EQUALS PH SUB2, ETO SUB2 CPH, PHCN. THE FOLLOWING PERCENT YIELDS WERE OBTAINED WITH ANALOGS: 1,3,5-ME SUB3 C SUB6 H SUB3.FEC SUB5 H SUB4 ET PRIME POSITIVE 0; C SUB6 H SUB6 FEC SUB5 H SUB4 PH PRIME POSITIVE 48; C SUB6 H SUB6 FEC SUB5 H SUB4 CL PRIME POSITIVE 20; 1,3,5-ME SUB3 C SUB6 H SUB3 FEC SUB5 H SUB4 AC PRIME POSITIVE 5PERCENT. ALL REACTIONS WERE RUN IN DRY ARGON ATM.

UNCLASSIFIED

SHIL'SHTEYN, S. Sh.

UDC 669.24'292:620.183.48

NEUTRON DIFFRACTION ANALYSIS OF NIOBIUM NITRIDE Nb_4N_3

[Article by A. Yu. Chervyakov, V. A. Semenkov, Ya. S. Umanskiy, S. Sh. Shil'shteyn, V. P. Yanchur, Moscow Steel and Alloys Institute; Department of Roentgenography and the Physics of Metals; Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, Russian, No 5, 1971, submitted 5 February 1971, pp 140-144]

In recent years, a large number of phase transitions of the order-disorder type have been detected in solid interstitial solutions accompanied by the formation of MeX [1], Me_2X [2], Me_4X_3 [3], and other superlattices. This fact offers the possibility of stating the problem of whether some of the interstitial phases with a composition close to stoichiometric for the mentioned superlattices are ordered deduction solid solutions on a chemical compound base. A series of data are in favor of this point of view. For example, in reference [3], the neutron diffraction method was used to detect a high-temperature phase transition in Me_4C_3 carbides (Me - Nb, Ta), which permits consideration of the lattices of these compounds as superlattices occurring from a disordered deduction solid solution on the basis of the chemical compound MeC with an NaCl type lattice. These superlattices have cubic symmetry and are antiisomorphic to Nb_4N. It is of interest to discover to what degree the indicated arguments are also valid for other interstitial phases with close stoichiometry.

In particular, Brauer and Jander [4] demonstrated by the x-ray method for Nb_4N_3 that the metal atoms in the Nb_4N_3 form a tetragonal lattice with $c/a = 0.98$. Terao [5] used electron diffraction to discover the existence of superlattice peaks, and on the basis of analysis of the extinguishing law, he proposed an Nb_4N_3 model. The experimental and theoretical values of the intensity were not compared in [5]. Accordingly, the purpose of this experiment was more precisely to define the lattice of Nb_4N_3 and study its possible variation with a rise in temperature by means of neutron diffraction — the most reliable method of localizing the light atoms in the presence of heavy atoms.

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

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

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

COUNTRY OF INFO--USSR

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

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

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

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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

CIRC ACCESSION NO--AP0129581

UNCLASSIFIED

CIRC ACCESSION NO--AP0129581 PROCESSING DATE--27NOV7C

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

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202920018-5"

(5)

JPRS 60634
27 November 1973

EFFECT OF THE CURRENT LOAD ON THE THERMAL CONDITIONS OF A MAGNETOHYDRODYNAMIC MACHINE

[Abstract of a Paper by Yu. Ya. Mikel'son, Yu. P. Ushakov, T. T. Tsirulis, E. P. Shilter, Ya. R. Shmit, Given at the Magnetohydrodynamic Conference, p 145]

For large current loads in magnetohydrodynamic machines and active heat exchange between the structural elements of the device and the external environment, nonlinear thermal effects can play a significant role.

In this paper an effort was made to calculate the nonlinear thermal losses Q in the current-carrying elements of the structure of the conduction pump for large current loads. Here, the temperature dependence of the thermal physical parameters of the material and the thermal radiation are taken into account.

The basic assumptions are the following: the thermal losses are defined by the Joule's law in the form

$$Q = \int_V \frac{|\vec{E}|^2}{\rho(T)}\, dv, \qquad (1)$$

where $\vec{E}$ is the intensity of the electric field in the conductor,

$\rho(T)$ is the specific electrical resistance of the material which depends on the temperature. For large current loads J, the linear approximation of Joule's law

$$Q = R_0 J^2, \quad R_0 = const \qquad (2)$$

is not valid. The integral resistance R determining the energy dissipation in the current-conducting elements of the structure are calculated by the formula

$$R(J) = Q(J)/J^2. \qquad (3)$$

The dependence of the losses on the current J is uniquely defined by the distribution of the temperature T inside the conducting body considering the specific heat transfer and heat exchange methods. The thermal radiation is subject to the Stefan-Boltzman law.

10,845
CSO: 8044/0653-W

SHILTER, E. P.

UNCLASSIFIED

PROCESSING DATE--11SEP70

1/2 013

TITLE--STRUCTURE OF TA SUB2 D -U-

AUTHOR--PETRUNIN, V.F., SOMENKOV, V.A., SHILSHTEYN, S.SH., CHERKOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA, 1970, 15(1) 171-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DEUTERIUM COMPOUND, TANTALUM COMPOUND, NEUTRON DIFFRACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1936/0015

STEP NO--UR/0070/70/015/001/0171/0173

CIRC ACCESSION NO--AP0102115

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102115

ABSTRACT/EXTRACT--(U) GP-0- ARSTRACT. BY MEANS OF A HIGH INTENSITY, HIGH RESOLUTION NEUTRON DIFFRACTOMETER, POLYCRYST. TAD SUB0 TIMES 53 WAS STUDIED AT 80-400DEGREESK. ON THE NEUTRON DIFFRACTION PATTERNS, IN ADDN. TO THE DIFFRACTION PEAKS OBSD. PREVIOUSLY BY WALLACE (CA 56: 12396G), SEVERAL WEAK REFLECTIONS ALSO WERE OBSD. ALL THE REFLECTIONS MAY BE INDEXED IN A UNIT CELL WITH PARAMETERS A APPROXIMATELY EQUAL TO B APPROXIMATELY EQUAL TO A SUB0 ROOT BAR 2 AND C APPROXIMATELY EQUAL TO A SUB0 (A SUB0 IS THE TA LATTICE PERIOD). THE WEAK HYPERFINE STRUCTURAL REFLECTIONS ARE DESCRIBED BY THE RELATION K PLUS L EQUALS 2N. TAD SUB0 TIMES 53 BELONGS TO THE SPACE GROUP D PRIME6 OVER 2 MINUS A222; 4 TA ATOMS ARE IN POSITION 4K AND 2 D IN 2A POSITION. THIS MODEL IS CHARACTERIZED BY 1 PARAMETER X FOR METAL ATOMS; ITS VALUE OBTAINED BY MINIMALIZATION OF DIVERGENCE FACTOR FOR HYPERFINE REFLECTIONS AT ROOM TEMP. IS X EQUALS 0.012 (0.017 FOR THE TEMP. OF LIQ. N) FROM THE PERIOD A OF THE ORTHORHOMBIC DEUTERIDE LATTICE.

UNCLASSIFIED

USSR

TSIRULIS, T. T.; SHILTER, E. P. (Latvian Order of Labor Red Banner State University)

"Nonstationary Temperature Behavior of a Conductor with a Nonlinear Heat Source"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR: Seriya Fizicheskikh i Tekhnicheskikh Nauk; January-February, 1973; pp 68-78

ABSTRACT: The method of a functional series is proposed for the solution of a composite problem involving a heat conductivity equation with a nonlinear heat source. The solution is in the form of a power series, the variable coefficients of which reduce to the Cauchy problem for a system of N ordinary differential equations and a passage to the limit as $N \to +\infty$. In the case of a linear problem the method results in a solution similar to that obtained by the Fourier method if the orthogonal properties of the eigenfunctions of the spectral operator are not considered. The determination of a nonstationary temperature field for a cylindrical conductor is presented as an example of a nonlinear problem.

1/1

USSR

SHILYAGINA, N. N., Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 5, Sep/Oct 73, pp 1066-1073

all background and induced potentials, however without theta activity in the hippocampus and specific brain structures. Extinction of the orientation reaction required more repetitions. The reproduction in potentials of rhythmic flashes was much weaker in deprived rabbits, and found only in the visual cortex. While the reaction of the visual cortex was greatly enhanced after return to normal surroundings, the other structures were less so, and no reaction was found in the hippocampus. These results are said to show a lessening of reactivity in visual cortex neurons and underdevelopment of corticofugal pathways due to deprivation. Limitation of visual afferentation is found to delay normal development of spontaneous and induced electrical activity, and to lead to retention of characteristics inherent in early stages of ontogenesis of all links on the visual system.

2/2

USSR

UDC 612.821.6+612.84

VOLOKHOV, A. A., and SHILYAGINA, N. N., Laboratory of the Growth Physiology of the Central Nervous System, Institute of the Brain, Academy of Medical Sciences USSR, Moscow

"Formation of a Defensive Conditioned Reflex to Light Stimulus After Early Visual Deprivation"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova, Vol 22, No 4, Jul/Aug 72, pp 735-742

Abstract: Newborn, healthy rabbits were kept in complete darkness for 1 month intact or with eyelids sewn together. A conditioned withdrawal reflex was then developed in them (also in a dark room) by presenting a light stimulus which was followed by an electric shock delivered to one paw. This conditioned defensive reflex developed in the experimental animals on a later data and after a greater number of drills than in control animals. Differences were also observed in light-evoked potentials in the visual and motor cortex: the latent period was prolonged, EP amplitudes in the cortical zones and in lateral geniculate bodies were diminished, while EP amplitudes in the reticular formation were considerably increased. After the animals were brought to normal conditions, the observed changes gradually disappeared. It is concluded that visual

1/2

USSR

VOLOKHOV, A. A. and SHILYAGINA, N. N., Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova, Vol 22, No 4, Jul/Aug 72, pp 735-742

deprivation causes functional disturbances in specific and nonspecific brain structures, thus affecting the central nervous system's plastic properties which normally play an important role in the organization of behavior.

2/2

USSR UDC 522.54-8

KONOVALOV, Ye. G., SEDLOV, L.M., and SHILYAYEV, A.S.

"On the Problem of Ultrasonic Separation of the Gaseous Component from the Liquid Component in the Flow of a Gas-Liquid System"

Minsk, Izvestiya Akademii Nauk, BSSR, Seriya Fiziko-Tekhnicheskikh Nauk, No 2, 1972, pp 65-70

Abstract: The effect of acoustic and hydrodynamic forces on a bubble approaching with a flow of liquid from an undisturbed medium to the emitter of ultrasound is discussed. The separation of the gaseous component from the liquid in the flow is theoretically analyzed by reference to diagrams showing the acting forces on the bubble. The mechanism of the process is described and fundamental correlations for determining critical values of the outflow velocity, the field intensity, and the acting forces are presented. The latter include the viscous force, the emission pressure on the bubble, the acoustic flow force, Bjerknes acoustic forces, Bernoulli hydrodynamic forces, and the floating-up force of the bubble. Characteristic moments by separation of the gaseous component, the braking action of the bubble, coalescence, stopping, and floating-up are analyzed. The most destructive feature of the coalescence is its high increase of intensity near the interface purified-gasifies liquid, where a contraction mechanism of bubbles develops, which is the final stage of the separation process. Two illustr., sixteen formulas, nine biblio. refs.
1/1

Yu. P. SHILYAYEV

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Acc. Nr.: AP0042570 Ref. Code: UR0273

JPRS 50162

Study of Geoactive Corpuscles and Photoelectrons

(Abstract: "Study of Geoactive Corpuscles and Photoelectrons on the 'Kosmos-261' Satellite," by A. D. Bolyunova, M. L. Bragin, Yu. I. Gal'perin, V. A. Gladyshev, N. V. Dzhordzhio, G. N. Zlotin, I. N. Kiknadze, R. A. Kovrazhkin, T. M. Mulyarchik, Yu. N. Ponomarev, V. V. Tennyy, N. I. Fedorova, Yu. P. Shilyayev, F. K. Shuyskaya and R. V. Shulenina; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 104-136)

The artificial earth satellite "Kosmos-261" was used in a study of low-energy geoactive corpuscles and fresh photoelectrons and their interaction with the earth's upper atmosphere. The satellite was launched on 30 December 1968. Orbital inclination to the equator was 71°, so that for a relatively long time it moved almost along a tangent along the auroral zone over the Soviet Far North, making it possible to increase the volume of simultaneous measurements from the satellite and from ground observatories. The storage regime made it possible to extend continuous measurements for periods of several revolutions, including passes over the auroral zones in the Arctic and Antarctic and over the polar caps as far as invariant geomagnetic latitudes 82-85°. During the initial period the satellite apogee was at 670 km and perigee was at 217 km, but it finally

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Reel/Frame

AP0042570

burnt up upon entering into the dense layers of the atmosphere on 12 February 1969 after making 857 revolutions of the earth. The experiment lasted 53 days. The orbit was such that in the northern hemisphere middle and high latitudes the satellite moved below or close to the maximum of the Foregion so that ionospheric electron density along its trajectory and its variations could be determined in a number of regions on the basis of measurements by ground ionospheric stations. The period of the experiment included both quiet periods and those with strong disturbances. The experiment was conducted under the "Program of Cooperation Among Socialist Countries in the Field of Space Research and Peaceful Use of Space." Ground measurements were made in Bulgaria, Hungary, East Germany, Poland, Rumania, USSR and Czechoslovakia. Observatories and special expeditionary stations in the USSR participated: in Yakutia, the Far North, Siberia and middle latitudes. The article cited below is divided into four parts: 1) Description of Experiment; 2) Measurement of Low-Energy Electrons; 3) Measurement of Low -Energy Ions; 4) Measurements of Charged Particles with Intermediate and High Energies. Parts 2)-4) are essentially independent articles and are abstracted separately.

19760552

USSR

UDC 612.42.014.426

VASIL'YEV, N. V., BOGINICH, L. F., and SHILYAYEVA, G. G., Chair of Microbiology and Central Scientific Research Laboratory, Tomsk Medical Institute

"Comparison of the Reaction of Lymph Tissue to Antigenic and Nonantigenic (Alternating Magnetic Field) Stimulation"

Moscow, Arkhiv Patologii, No 9, 1971, pp 47-51

Abstract: Exposure of rats to an alternating magnetic field (200 oersteds, frequency of 50 Hz) induced an immunomorphological response of the thymus, spleen, and lymph nodes comparable to that observed after antigenic stimulation - desquamative sinusitis, stimulation of the recticular syncytium, proliferation of plasma cells, and hyperplasia of the spleen and lymph nodes. Similar but milder shifts were observed in control animals kept in tight containers like the experimental rats, suggesting that they were the result of stress (enforced immobilization). The similarity of the reaction of lymph tissue to antigenic and nonantigenic factors indicates that it is a form of Selye's adaptation syndrome.

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USSR

UDC 599.742.1:591.526

SHILYAYEVA, L. M., All Union Scientific Research Institute of Hunting and Fur Farming, Kirov

"Structure of the Arctic Fox (Alopex lagopus) Population and the Role of Different Generations in Controlling Its Dynamics"

Moscow, Soologicheskiy Zhurnal, No 12, 1971, pp 1,843-1,852

Abstract: The fox population in North Europe is a complex of age and sex groups born under cyclically shifting environmental conditions. There are three generations corresponding to the three stages in each population cycle (stage 1 - favorable conditions, stage 2 - adverse conditions, stage 3 - fair or average conditions). The three generations differ in reproduction rate, sex ratio, numbers, and life-span. However, the generations born under similar conditions have almost identical characteristics. There is a certain balance in the main qualitative parameters of the generations. The more numerous generations (stages 1 and 2) are less long-lived but they reproduce more vigorously whereas the sparse generations live longer and are more fecund. A small group of females accounts for most of the reproduction during the various stages of the population cycle. Successful reproduction and population increase depends on the number of these females. Any significant disturbance of the age and generation

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SHILYAYEVA, L. M., Zoologicheskiy Zhurnal, No 12, 1971, pp 1,843-1,852

structure may reduce their number and thereby seriously alter the structure and abundance of the fox population.

SHIMALINKINA A.L.

SO: JPRS 59279
14 Jun 73

OBTAINING EPITAXIAL SILICON FILMS WITH THE APPLICATION OF HYDROGEN OF HIGH PURITY AND STUDYING THE ADMIXTURE DISTRIBUTION PROFILE

All- Semiconductor materials

[Article by Yu. A. Raynov, A. L. Shimalinkina, A. S. Lyutovich, V. P. Prutkin, V. V. Kharchenko, E. Khodzhakhmedov; Novosibirsk, Protsessy Rosta i Struktura Monokristallicheskikh Sloyev Poluprovodnikov -- Trudy Simpoziuma, Russian, Part 2, 1969, pp 85-92]

The distribution profile of the admixtures in the epitaxial layers plays the decisive role in insuring the given operating characteristics of the semi-conducting devices.

The requirement on obtaining precision profiles is intensified sharply in connection with microminiaturization and the technology of solid state circuitry.

On the other hand, the nature of the admixture distribution in the epitaxial layers provides rich information permitting the discovery of the mechanism of the interaction of the admixtures with the growing crystal.

In practice, the admixture distribution depends on the effect of many chemical-physical factors among which the principal ones are the reaction kinetics in the gas phase, the capture and displacement of admixtures during the growth process, the phase equilibria and the diffusion over the surface and in the solid state.

There are several papers devoted to the admixture distribution during epitaxial growth [1-3, 5, 6]; however, in them the most important question is not investigated -- the distribution of the film in the body connected with purposeful alloying from the gas phase in the growth process.

Grove [1] investigated the admixture distribution in the film-substrate system for the case where the alloying admixture was evaporated from the solid phase and then was again crystallized from the vapor-gas mixture.

In the indicated paper a study was made of a distribution profile of the admixtures on the basis of the diffusion theory in the solid state, and special experiments were performed with antimony and boron. The author

USSR UDC: 534

SHIMANOV, S. N.

"On the Theory of Periodic Oscillations of Quasilinear Nonautonomous Periodic Systems With Periodic Delays"

Tr. 5-y Mezhdunar. konferentsii po nelineyn. kolebaniyam. T. 1 ((Works of the Fifth International Conference on Nonlinear Oscillations. Vol. 1), Kiev, 1970, pp 617-622 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7A150)

Translation: The author considers a quasilinear nonautonomous system with periodic delays of the form

$$\frac{dx(t)}{dt}=p(t)x(t)+\sum_{\sigma=1}^{k}p_\sigma(t)x(t-\tau_\sigma(t))+f(t)+\mu F(t,x(t),x(t-\tau_1(t)),\ldots,x(t-\tau_k(t)),\mu) \quad (1)$$

where $x(t)$ is an n-vector, $p(t)$, $p_\sigma(t)$ are periodic $n\times n$ matrices of period ω, $\tau_\sigma(t)$ $(\sigma=1,2,\ldots,k)$ are periodic delays, $f(t)$ is a periodic vector of period ω, $F(t,x,y_1,\ldots,y_k,\mu)$ is a continuous and periodic (of period ω) function of time t and a continuous function of the vectors $x,y_1,\ldots,y_k$ from some

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SHIMANOV, S. N., Tr. 5-y Mezhdunar. konferentsii po nelineyn. kolebaniyam. T. 1, Kiev, 1970, pp 617-622

region G and $|\mu|<\mu^*$ (μ^* is a positive number). In particular, consideration is given to the case where F is an analytical function of x, y, ..., y_k, μ. Some general assumptions are presented relating to the systems of differential equations of type (1) as well as to conjugate systems (with a lead in time) on whose basis a theory of periodic solutions of system (1) is constructed in the nonresonance and resonance cases. Conditions of existance of periodic solutions are indicated. A system of integrodifferential equations with delay is brought into the analysis, and some assumptions are formulated which relate to periodic solution of the system of integrodifferential equations with delay and system (1). K. R. Kovalenko.

2/2

USSR UDC 541.18.053:541.182.2/3:621.034

BAKHANOVA, R. A., SILAYEV, A. V., and SHIMANOVA, O. M., Ukrainian Hydrometeorological Institute, Kiev

"Possibility of Degree of Dispersion in Atomization of Liquids with Low-Frequency Ultrasound"

Moscow, Kolloidnyy Zhurnal, Vol XXXIII, No 1, Jan-Feb 1971, pp 18-22

Abstract: Conventional concave-mirror type dispersers used in generating mists for simulated fog studies do not secure the optimal range of particle diameter, especially when the dispersed liquid is a colloidal system.

A dispersion device combining a low-frequency ultrasonic generator with an exponential ultrasonic concentrator equipped with a cap of porous material, was found to produce a significantly larger number of particles of optimal diameter for study with optical microscopes (1-5 μ).

With use of this equipment, probable aerosol particle diameter is only slightly dependent on the physico-chemical properties of the dispersed liquid, the nature of the porous cap, or the acoustic power and frequency,

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BAKHANOVA, R. A., et al., Kolloidnyy Zhurnal, Vol XXXIII, No 1, Jan-Feb 1971, pp 18-22

which factors, however, figure more largely in the "output" (concentration) of the artificial fog. Graphical data are included to illustrate the results of the tests.

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1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DIFFUSION OF NEODYMIUM AND IRON IN NEODYMIUM ORTHOFERRITE -U-

AUTHOR-(04)-PAVLYUCHENKO, M.M., FILONOV, B.O., SHIRANOVICH, I.YE., PROKUDINA, S.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(4), 328-31

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PHYSICAL DIFFUSION, IRON, NEODYMIUM COMPOUND, THERMAL EFFECT, ISOTOPE, DIFFUSION COEFFICIENT

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DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1399 STEP NO--UR/0250/70/014/004/0328/0331

CIRC ACCESSION NO--AT0128798

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0128798

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFUSION OF ND AND FE IN ND ORTHOFERRITE WAS INVESTIGATED BY USING ABSORPTION AND SECTIONING METHODS. EXPTS. WERE CARRIED OUT ON PRESSED NDFEO SUB3 SPECIMENS 10.5 MM IN DIAM. AND 3-5 MM HIGH; SUBSEQUENT MULTISTAGE SINTERING AT DIFFERENT TEMPS. WITH FINAL HOMOGENIZATION AT 1430DEGREES FOR 250 HR PRODUCED SPECIMENS WITH D. OF 6.10 G-CM PRIME3 CORRESPONDING TO 87PERCENT SPACE FILLING. DIFFUSION ANNEALING WAS CARRIED OUT IN ELEC. FURNACES AT 1240-1420DEGREES FOR 180 HR; THE TEMP. WAS REGULATED WITH AN ACCURACY OF PLUS OR MINUS 3DEGREES. DIFFUSION MOBILITY OF NDFEO SUB3 CATIONS WAS INVESTIGATED BY USING THE READIOACTIVE ISOTOPES PRIME59 FE AND PRIME147 ND. THE TEMP. DEPENDENCES OF THE DIFFUSION COEFFS. ARE GIVEN. THE DIFFUSION COEFFS. OBTAINED BY THE ABSORPTION METHOD ARE HIGHER THAN THOSE OBTAINED BY THE SECTIONING METHOD, BECAUSE THE PENETRATION OF THE RADIOACTIVE ISOTOPES FOR THE FORMER TAKES PLACE IN THE BULK AND ALONG THE GRAIN BOUNDARIES, WHILE FOR THE LATTER IT OCCURS IN THE BULK OF THE MATERIAL ONLY. COMPARISON OF THE DIFFUSION COEFFS. INDICATES THAT CATION MOBILITY OF ND IN ND FERRITE IS HIGHER THAN THAT OF THE FE CATIONS. FACILITY: BELORUSS. GOS. UNIV. IM. LENINA, MINSK, USSR.

UNCLASSIFIED

AA0052653 SHIMANOVICH AR 6482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 1-70

241830 FLUID BEARING prevents rotation of the shaft when the fluid pressure drops. It consists of a sleeve 1 with pockets 7 and 8 which when filled with the fluid at pressure take axial and radial loads. The shaft 4 carries stops 3 and 4 secured by the nuts 5. The elastic element 6 is fitted on the shaft between the nuts and the stop 3. Due to pressure of the fluid, the element 6 is compressed thus producing a working clearance in the pockets 6. When the pressure drops the element 6 expands forcing stops 3 and 4 towards the sleeve and braking the rotation of the shaft.

1.3.68. as 1221789/25-27, PUSH, V.E. et al. Moscow Instrumentation Inst. (2.9.69) Bul. 14/18.4.69 Class 47b, Int. Cl. F 16c.

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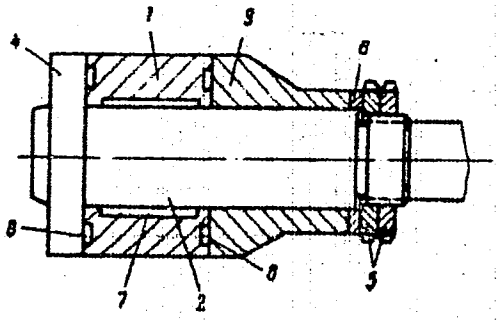
AA0052653

Push, V. E.; Shimanovich, M. A.; Sokolov, Yu. N.;
Vulfson, I. A.; Levshunov, V. T.
Moskovskiy Stankoinstrumental'nyy Institut



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19821391

AAUU3C211 SHIMANOVICH, M.A. UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 1-70

241829 HYDRAULIC BEARING requires less fluid. shaft 1 with the end flanges 2 and 3 is supported in a cylindrical body 4 of a bearing. The body has end ring channels 5 and 6 which take the axial load and recesses 7 to 10 which take the radial load. The channels 11 to 14 are connected to a drain through channels 15. The channels 5

and 6 have seals 16 and 17 in the form of rings 18. Due to the absence of drain channels between channels 5 and 6 on one side and channels 7 and 10 on the opposite side, the liquid from channels 5 and 6 is drained only between the seals 16. No draining takes place between seals 17. In addition, pressure in channels 7 to 10 prevent drainage. The liquid flows only in the tangential direction to channels 11 to 14. The pressure in channels 5 and 6 prevents flow of liquid from channels 7 to 10 to rings 18. This reduces the liquid flow in the bearing.

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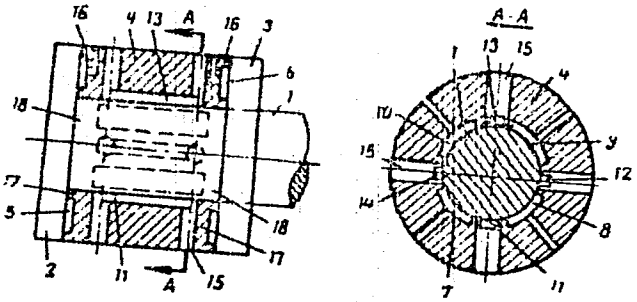
AA0052411



27.5.67. as 1159759/25-27, SOKOLOV, Y.N. et al. Experimental and Res. Inst. for Metal Cutting plant. (29.8.69) Bul. 14/18.4.69. Class 47b, Int Cl. F 16c.

Sokolov, Yu. N.; Shimanovich, M. A.; Rassokhin, V. Ya.; Nepomnyashchiy, Yu. L.

Eksperimental'nyy Nauchno-Issledovatel'skiy Institut Metallorezhushchikh Stankov

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19821038

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DESUBLIMATION OF MALEIC ANHYDRIDE FROM CONVERTER (E.I.T.) GASES FROM FURFURAL OXIDATION -U-

AUTHOR-(05)-MUSA, Z., LIYEPINA, R., SHIMANSKAYA, M.I., ZILE, J., HILLERS, S.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (2), 175-81

DATE PUBLISHED----------70

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

TOPIC TAGS--MALEIC ANHYDRIDE, FURFURAL, CATALYTIC OXIDATION, INDUSTRIAL BYPRODUCT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1866 STEP NO--UR/0464/70/000/002/0175/0181

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