USSR

VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

10/10

TEREKHOV, V.A.

(3)

INTERACTION BETWEEN MAN AND AN ELECTRONIC COMPUTER IN OPERATIONAL PLANNING

[Article by A. G. Bryzhatyy, (Moscow Machine Building Plant Krasnyy Oktyabr) and V. A. Terekhov and O. K. Tikhomirov, (Psychology Faculty Moscow State University); Moscow, Voprosy Psikhologii, Russian, No 6, 1972, pp 94-102]

It is well known that [in] modern conditions there is a considerable increase in the [im]portance of improving control of the national economy. In one of his reports L. I. Brezhnev, noting the importance of control for development of the economy, speaks of the need for "raising the level of all work in control matters, bringing it into accordance with modern scientific requirements..." [2].

A thorough formulation of scientific control principles must include a psychological study of man's activity in the control sphere. This article [illegible] devoted to this problem.

1. Some Peculiarities in Designing Automated Control Systems

One of the ways for improving control methods is construction of automated control systems (ACS) by enterprises on the basis of electronic computers using the methods employed in economics and mathematics. Such control systems are usually called man-machine systems, since in production control in addition to functioning of an electronic computer man also performs definite functions and solves specific control problems.

In most cases controlling and controlled subsystems are distinguished in ACS. The controlled subsystem of an ACS at an enterprise includes such components as the individual work place (lathe), production sector and workshops. In this case the controlling subsystem will include the factory directors and the different services associated with the enterprise's administration. Despite the fact that the two subsystems are re-

JPRS 58290
22 Feb 73

USSR UDC: 632.954:632.911

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

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

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

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

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

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

2/2

1/2 040 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--FILM STRAIN GAGES FROM A PRIMEIV SUBX B PRIMEIV SUBY COMPOUNDS -U-

AUTHOR-(02)-NOVIKOV, L.V., TEREKHOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--PRIB. SIST. UPR.1970, (2), 57-8

DATE PUBLISHED-------70

SUBJECT AREAS--METHODS AND EQUIPMENT, MATERIALS

TOPIC TAGS--STRAIN GAGE, GERMANIUM ALLOY, SILICON ALLOY, TUNGSTEN, ALUMINUM OXIDE, VACUUM TECHNIQUE, CRYSTALLIZATION, NONDESTRUCTUVE TEST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1453 STEP NO--UR/0445/70/000/002/0057/0058

CIRC ACCESSION NO--AP0135124

UNCLASSIFIED

2/2 040 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135124

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FILMS WERE PREPD. BY EVAPN. OF A GE SUBX SI SUBY ALLOY FROM A W BOAT ONTO A AL SUB2 O SUB3 SUBSTRATE IN A VACUUM OF 5 TIMES 10 PRIME NEGATIVE4 MINUS 5 TIMES 10 PRIME NEGATIVE7 TORR. THE GE SUBX SI SUBY ALLOYS HAVE RESISTIVITIES OF 0.5-60 OHM CM AND 1-26 AT. PERCET SI. THE INCREASE IN THE VACUUM HAS NO PERCEPTIBLE EFFECT ON STABILIZATION OF THE COEFF. OF STRAIN RESISTIVITY KAPPA OF THE STRAIN GAGES, BUT KAPPA IS STABILIZED BY RECRYSTN. ANNEALING AT 600-700DEGREES FOR 10-20 MIN. THE STRAIN GAGES HAVE P TYPE COND., AND THERE IS NO HYSTERESIS AFTER THEIR FREQUENT DEFORMATION UP TO RELATIVE DEFORMATIONS OF 1 TIMES 10 PRIME NEGATIVE3. THE DEPENDENCE OF KAPPA ON THE COMPN. AND THE TEMP. DEPENDENCE OF THE RESISTIVITY CHANGES WITH TEMP. VARIATIONS OF THE GE SUBX SI SUBY STRAIN GAGES ARE PRESENTED.

UNCLASSIFIED

USSR

UDC: 621.396.677(088.8)

KLYUYEV, O. L., TEREKHOV, V. M., FADDEYEV, V. Ye., SHOFLER, L. V.

"Drive Mechanism for a Ground-Based Antenna System"

USSR Author's Certificate No 282452, filed 30 Oct 68, published 11 Dec 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B109 P)

Translation: This Author's Certificate introduces a drive mechanism for a ground-based antenna system. The mechanism contains a DC force converter, an even number of actuating motors, high-speed and low-speed gear boxes, and crown gears connected to the drive gears. To improve the rigidity of the gear train and simplify the construction of the mechanism, the converter is connected between the common point of the actuating motor armatures and the common point of two power diodes which are connected in series in the same direction in the armature circuits of the same motors. An additional DC source is connected in parallel with these diodes through an auxiliary diode.

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USSR

UDC 621.317.727.1

TEREKHOV, V. M.

"Determination of the Tolerance Characteristics of Resistors in R-2R Type Voltage Dividers"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Engineering. Scientific and Engineering Collection. Radio Components), 1970, vyp. 3, pp 57-64 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A279)

Translation: The problems of determining the tolerance characteristics (instability coefficient, temperature coefficient of resistance) of resistors in R-2R type voltage dividers are investigated. The results of experimental testing of the derived formulas are presented.

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USSR 632.95

SHITS, L. A., TEREKHOVA, A. I., and POZDNYSHEV, G. P.

"Method of Producing Oil Concentrates of Invert Emulsions for Agricultural Purposes"

USSR Authors' Certificate No 318381, Cl. A 01 n17/10, filed 27 Apr 70, published 17 Dec 71 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14N552P by T. A. Belyayeva)

Translation: To increase the emulsifiability of the concentrate and widen the area of optimum component ratios in the oil phase, as well as reduce the cost of the concentrate, use of a natural stabilizer for commercial oil emulsions is suggested. The stabilizer is the by-product of the crude-oil dehydration (deemulsification) process. Natural oil emulsifiers can be isolated from the slurry ("intermediate layer") that forms in petroleum collecting tanks or settling tanks after petroleum has been treated with demulsifier reagents. The"intermediate layer," rid of petroleum residues, is boiled; the precipitate is separated out; the layer is rinsed on a filter, first with boiling, then with cold water, is dried and used as an emulsifier of invert pesticidal emulsion. From the "intermediate layer" that originates as a result of treating crude oil from the Mukhanovo field with the deemulsifier

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SHITS, L. A., et al., USSR Authors' Certificate No 318381, Cl. A 01 n 17/10, filed 27 Apr 70, published 17 Dec 71

Dissolvan 4411 the product that settles in the precipitate is isolated; 100 grams of it are kept in contact for 30 minutes with 0.5-1 liter of boiling water, filtered, rinsed with 1-2 liters of cold water, and air-dried. A concentrate of the following composition is obtained (part by weight): butyl ester of 2,4-D (79-95%) 30-40, spindle oil 60-70, petroleum solvent 10-20, emulsifier 3-7. Water is poured into the concentrate, the concentrate is stirred, and invert emulsion is obtained.

2/2

1/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EFFECT OF STRUCTURE FORMING SUBSTANCES ON THE CHEMICAL AND THERMOMECHANICAL PROPERTIES OF A CELLULOSE HYDRATE FIBER -U-

AUTHOR-(05)-MIKHAYLOV, N.V., TOKAREVA, L.G., TEREKHOVA, G.M., MANOROSOVA, F.M., PANOVA, L.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (2), 37-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CELLULOSE RESIN, SYNTHETIC FIBER, DIAMINE, PHTHALATE, FILLER, PIGMENT, THERMOMECHANICAL PROPERTY, FATIGUE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0873 STEP NO--UR/0183/70/000/002/0037/0039

CIRC ACCESSION NO--AP0137901

UNCLASSIFIED

2/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137901

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CELLULOSE (I) FIBERS WERE MODIFIED WITH A NO. OF N, S, AND P CONTG. ADDITIVES. I FIBERS MODIFIED WITH 0.4-0.5PERCENT SV 1 COMPN. (A CONDENSATION PRODUCT OF N,N PRIME DI,BETA,NAPHTHYL P,PHENYLENEDIAMINE AND AMMONIUM DIAZOPHTHALATE), 0.6PERCENT CARBON BLACK, AND 0.2PERCENT BLUE OR YELLOW PIGMENTS EXHIBITED SUPERIOR FATIGUE STRENGTH AND OXIDATIVE DEGRADATION RESISTANCE.

UNCLASSIFIED

USSR

UDC 621.382.002

KLETCHENKOV, I.I., TEREKHOVA, G.V.

"Study Of The Adhesion Properties Of Negative Photoresist"

V sb. Vopr. mikroelektroniki (Problems Of Microelectronics--Collection Of Works), Kiev, "Nauk.dumka," 1971, pp 189-194 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B443)

Translation: Measurement of the adhesion of films of photoresist PVTs to an aluminum substrate was conducted by a method which forms the basis of the prevailing GOST 9364-60. Adhesion of the films in the interval of tanning temperatures of 100--160° C amounts to 1.0--1.5 gram-force/mm. A considerable increase of adhesion is begun at a temperature of 180° C and particularly at 200--220° C (6--15 gram-force/mm). This is explained by the removal of the solvent from the polymer and at higher temperatures (210--220° C) partial destruction of the molecules of PVTs. The optimum temperature of tanning is 220° C. With exposure of the specimens with the photoresist to a cold etchant of the composition 3 ml HNO_3 plus 1 ml HF for 5 min, the adhesion is decreased by two times. During a subsequent 9 min of exposure, the adhesion is not changed, after which, because of the disintegration of the molecules of PVTs, it reduces to zero. The alkali resistance and resistance to the buffer etchant > 30 min. 3 ill. 2 ref. I.M.

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UDC 621.382.002

KLETCHENKOV, I.I., TEREKHOVA, G.V.

"Adhesion Properties Of Positive Photoresist"

V sb. Voor. mikroelektroniki (Problems Of Microelectronics--Collection Of Works), Kiev, "Nauk.dumka," 1971, pp 194-199 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B444)

Translation: An investigation of the adhesion of films of photoresist based on 1.2 napthoquinonsdiazid--5--sulfoester novolak as a function of regimes of tanning, the conditions of treatment in acid, alkali, and buffer etchants and in water, was conducted with the aid of the EMA-57m adhesiometer in conformity with GOST 9564-60. With an increase of the temperature of tanning, the magnitude is decreased, probably because of shrinkage of the films and an increase of their brittleness as a consequence of removal of the solvent and semi-condensation of the polymer. With a temperature of tanning of 100° C a fixed magnitude of adhesion equal to $\sim$1 gram-force.mm^{-1} is determined for 25--30 min. In a cold acid etchant, the adhesion of the films reduces to zero with exposure during 16--17 min, and in alkali during 1 min. Adhesion of the films with exposure during 30 min to HNO_3 and buffer etchant changes immaterially. 2 ill. 3 ref. I.M.

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USSR

UDC 678:[539.612 539.4].001

SKORYY, I. A., and TEREKHOVA, L. P., Moscow Aviation Technological Institute

"Stresses in Cemented Joints of Cylindrical Shells and Panels"

Riga, Mekhanika Polimerov, No 6, Nov-Dec 72, pp 1093-1103

Abstract: The stresses in cemented joints of cylindrical shells and panels are determined, and an investigation is made of the effect of the length of the joint and the parameters of cement, shells, and panels on the magnitude of stresses. It is shown that stresses σ_0 and τ_0 are nonuniformly distributed along the cemented joint and concentrated at the edges of the joint. The stresses in the cement and the length of the zone of the boundary effect depend essentially on the modulus of elasticity of the cement. Thus for cement with the modulus of elasticity $E^*_c = 2 \cdot 10^5$ kgs/cm^2 the maximum stresses are 7.5 times higher than for cement with the modulus of elasticity $E^*_c = 2 \cdot 10^3$ kgs/cm^2, while the zone of concentration of stresses in them is equivalent to three-four thicknesses of shells or the entire length of the cemented joint, respectively. Variations of the length of the cemented joint for the same cement confirmed the fact that the zone of concentration of stresses does not depend on the length of the cemented layer. Maximum normal and tangential stresses in the cemented layer do not depend on the length of the cemented layer.

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TEREKHOVA, M. I.

CHEMICAL TRANSFORMATIONS

SINGLE-ELECTRON TRANSFER AND CHEMICAL TRANSFORMATIONS

(Conference in Rostov-on-Don)

[Article by Candidate of Chemical Sciences Z. V. Todres; Moscow, Vestnik Akademii Nauk SSSR, Russian, No 9, September 1973, pp 102-106]

A conference on the role of electron transfers in chemical reactions was held in Rostov-on-Don on 22-25 May. It was organized by the Northern Caucasus Scientific Center of the Higher School; about 40 reports were presented. Participating in the conference were the leading chemical institutes of the AS USSR and the republican academies, and also Rostov-on-Don, Moscow, Leningrad and Gor'kiy universities.

Chemical reactions are usually regarded as the rupture and formation of bonds, that is, the rearrangement of the skeleton of a molecule. It is now considered, however, that the displacement of atoms or atomic arrangements is preceded by the transfer of electrons from one of the reacting molecules to the other. The study of that stage, which has become possible through the use of new instrumental methods of investigation, especially of electron paramagnetic and nuclear magnetic resonance, expands concepts of the reaction mechanism as a sequence of elementary stages known to us.

As a result of electron transfer new particles appear, not known to organic chemistry of the past. The properties of those products were examined in a number of reports. Hemoglobin, cytochrome C and other enzymes with Fe(III) after electron transfer give nonequilibrium forms in which the iron has alredy gone over into the state Fe(II) but the protein part still retains its previous configuration (R. M. Davydov). The transformation of 4-4'-dinitro-cis-stilbene into an anion-radical is accompanied by complete cis-trans-isomerization. Destruction of the symmetry of the molecule leads to establishment of equilibrium: 4-nitro-cis-stilbene in the presence of electron transfer gives a mixture

 JPRS 60661, 30 Nov. 73

of anion-radicals of cis- and trans-stilbenes (Z. V. Todres). In the reports of S. P. Solodovnikov and M. I. Terekhova it was shown that the properties of the products of electron transfer depend not only on the distribution of electrons over the molecule but also on the entry of those products into the composition of the ionic associates.

Triethylgermyl derivatives of lithium or potassium, as Ye. N. Gladyshev has established, react in benzene or hexene with benzophenol, giving alcoholates of triethylgermyl-substituted benzhydrol. A completely different product forms in hexaethyldigermane, side by side with benzophenone ketyl. In other words, in hexametapol of the existing particle appears the triethylgermyl anion, which reacts further according to a scheme of single-electron transfer. Bimetallic organic compounds such as bis-(triethylgermyl)-mercury or bis-(triethylgermyl)-cadmium are capable of participating in electron transfer also in non-polar solvents of the type of benzene, if a sufficiently strong acceptor, for example tetracyanogen-ethylene, is used (Academician G. A. Razuvayev and G. A. Abakumov).

V. Ts. Kampel' and G. Yu. Okhlobystin revealed the general mechanism of the oxidation of organometallic compounds, according to which a single electron is torn away from those derivatives and they simultaneously decompose into an organic radical and the cation of the metal. The radicals, if they do not react chemically, give off still another electron, being oxidized to carbocations. The reaction ends with the stage of stabilization of those cations, for example, through their reaction with molecules of the solvent. The establishment of such a mechanism explains the formation of benzyl acetate as the main product of the oxidation of benzylmercuracetate by lead tetra-acetate in acetic acid. Aliphatic mercury chlorides under the same conditions give ethers of acetic acid, paraffins and olefins. The formation of hydrocarbons in that reaction also indicates the existence of radicals as intermediates of the oxidation.

The ability of organomercuric compounds to act as electron donors was shown on the example of reactions of diaryl mercury with tetranitromethane (S. A. Shevelev, I. P. Beletskaya et al). Upon reacting with nitronium fluoroborate in sulfolan, diaryl mercury gives an aromatic hydrocarbon and (trinitromethyl)-aryl mercury as the main product and a certain quantity of $ArNO_2$ (A. N. Kashin, I. P. Beletskaya, and V. I. Stanko). The obtained results agree with the hypothesis that in the first stage of the reaction the cation-radical of diaryl mercury and the radical NO_2 form. The latter forms through electron transfer either to the nitronium cation or to the tetranitromethane. The cation-radical of diaryl mercury decomposes, giving the highly reactive radical Ar·. That radical reacts insignificantly with the lowly reactive

Acc. Nr: AP0034100 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code: UR 0078

71292u Analysis of conditions for cadmium selenide precipitation from aqueous solutions by sodium selenosulfate. Kitaev, G. A.; Terekhova, T. S. (Ural. Politekh. Inst. im. Kirova, Sverdlovsk, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 48–51 (Russ). Equil. const. (K) of $SeSO_3^{2-}$ hydrolysis was detd. in the system $CdCl_2$–NH_4OH–Na_2SeSO_3–KOH. The overall reaction can be described by the stoichiometric equation $Cd(NH_3)_4^{2+} + SeSO_3^{2+} + 2OH^- \leftrightarrow CdSe + SO_4^{2-} + 4NH_3 + H_2O$. At 25°, pK is 34.64. A CdSe mirror forms readily in the presence of $Cd(OH)_2$ in the medium. HMJR

REEL/FRAME 19710743

USSR

UDC 669.793'3'854'292'293'26'1:620.181.41

NAUMKIN, O. P., TEREKHOVA, V. F., SAVITSKIY, YE. M.

"Scandium Alloys and Their Utilization in Engineering"

V sb. Redkozemel'n. met. i splavy (Rare Earth Metals and Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 28-34 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 41776)

Translation: Data are presented on the structure of phase diagrams and the investigation of the properties of Sc alloys with Cu, La, V, Nb, Cr, and Fe. A comparison of the physical-chemical interaction of the rare earth metals and Sc with the elements of the periodic table permits the conclusion to be drawn that Sc differs appreciably from the rare earth metals as a result of the difference in electron structure, the electronegativity, and atomic radii. The study of the properties of pure Sc, the construction of the phase diagrams with the elements of the periodic table, and the construction of the composition-property diagrams permitted discovery of the areas of industrial application of Sc and development of a number of Sc alloys. 9 illustrations, 1 table, and a 13-entry bibliography.

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USSR

UDC 669.85/86:620.181.4

TEREKHOVA, V. F.

"Rare Earth Metals, Their Alloys, and New Areas of Application"

V sb. Redkozemel'n. met. i splavy (Rare Earth Metals and Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 17-21 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 41770)

Translation: A survey is made of the state of the art in scientific studies of single crystals of rare earth metals and the discovery of the fine structure and investigation of new phase diagrams of the rare earth metals with Fe, Hf, V, Ca, etc. An analysis of the constructed phase diagrams with the rare earth metals offers the possibility of drawing the conclusion that simpler phase diagrams (continuous solid solutions and eutectic) of the rare earth metals are formed with a small number of elements, basically with elements of groups III and IVA of the periodic table. As a rule, eutectic systems are formed between the rare earth metals of the yttrium subgroup with the elements of group IVA; broad areas of immiscibility are detected with the cerium subgroup for these elements. The presence of chemical compounds characterizes the systems of rare earth metals with metals of groups I and VIII. Bibliography of 9 entries.

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USSR

UDC 621.357.8:669.794(088.8)

TEREKHOVA, V. F., KULAKOV, Yu. A., SAVITSKIY, Ye. M., SHELKOVA, I. G.

"Method of Electrolytic Polishing of Rare Earth Metals and Their Alloys"

USSR Author's Certificate No 305203, Filed 27/01/70, Published 13/07/71, (Translated from Referativnyy Zhurnal, Khimiya, No 2, 1972, Abstract No 2 L248 P from the Resume).

Translation: A method of electrolytic polishing of rare earth metals and their alloys in an electrolyte containing HNO_3 and glycerin, differing in that in order to improve the quality of polishing of yttrium and its alloys, oxalic acid is introduced to the electrolyte in the following ratio of components, wt.%: HNO_3 -- 40-50, oxalic acid 20-40, glycerin -- remainder, and the process is conducted at 20°C and D = 1.5-3 a/cm^2.

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USSR

UDC 669.891.5.71.725.018.8(088.8)

STROGANOVA, V. F., TEREKHOVA, V. F., SAVITSKIY, Ye. M., STREL'TSOV, Ye. I., IGNATOVA, L. I., NAKONECHNIKOV, A. I., ZAV'YALOV, A. I. [Institute of Metallurgy imeni A. A. Baykov, Physics and Energy Institute]

"Calcium-Based Alloy"

USSR Author's Certificate No. 276422, Filed 17/12/68, Published 16/10/70. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5, I761P).

Translation: In order to increase the corrosion resistance of binary Ca-Al alloys, it is suggested that they be additionally alloyed with Be with the following relationships of components (in %): Al 0.5-1.5, Be 0.3-0.8, remainder Ca. The new alloy, while retaining high mechanical properties, has corrosion resistance defined by the weight gain of specimens of 0.003 g/cm^2 per 100 hours, i. e., is practically not oxidized in air (in an atmosphere with normal relative humidity). The melting point of the alloy is 580-600°, the specific gravity $\leq$ 1.7 g/cm^2. It is suggested for use in atomic power engineering.

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USSR UDC 546.641

SAVITSKIY, Ye. M., TEREKHOVA, V. F., and SHELKOVA, I. G.

"Study of the Fine Structure of Yttrium Single Crystals"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 70-73

Translation: A method is developed for polishing and etching yttrium single crystals. The fine structure on the base plane, on the plane of the second-order prism, and on the intermediate planes is produced. Data of structural and X-ray analysis attest to a rather high degree of perfection of the single crystals produced in the laboratory. 4 Figures; 4 Bibliographic References.

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1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--METALLOGRAPHY OF CALCIUM -U-

AUTHOR-(03)-STROGANOVA, V.F., TEREKHOVA, V.F., SAVITSKIY, YE.M.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. AKAD. NAUK SSSR, METALLY, MAR.-APR. 1970, (2), 228-230

DATE PUBLISHED-------70

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

TOPIC TAGS--CALCIUM, CALCIUM ALLOY, METAL POLISHING, MATERIAL GRINDING, NITRIC ACID, METAL MICROSTRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1453 STEP NO--UR/0370/70/000/002/0228/0230

CIRC ACCESSION NO--AP0130386

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130386

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHODS OF STUDYING CA AND CA ALLOYS METALLOGRAPHICALLY ARE DESCRIBED AND DISCUSSED. THE CHIEF DIFFICULTY IS THE REACTIVITY OF THIS ALKALINE EARTH ELEMENT IN MOIST AIR. BY PROPER ATTENTION TO TECHNIQUE GOOD RESULTS MAY BE ACHIEVED BY EXAMINING SEVERELY OXIDIZED SAMPLES AND DEDUCING THE UNDERLYING MICROSTRUCTURE. A SMOOTH AND LUSTROUS SURFACE MAY BE ACHIEVED BY USING AN INTERMEDIATE ETCH OF CONCENTRATED HNO SUB3 WITHOUT ANY OF THE USUAL GRINDING AND POLISHING PROCESSES.

UNCLASSIFIED

USSR UDC 621.793.4

KONSTANTINOV, V. A., TEREKHOVA, V.V., and TAMARIN, Yu. A.

"Nature of Alitized Layers on Nickel"

Moscow, Zashchita Metallov, Vol 6, No 2, Mar-Apr 70, pp 213-216

Abstract: The structure of the surface layer of alitized nickel depends primarily on the method and conditions of the process. Etching the cross section cut of nickel after alitizing it at 950°C in containers filled with a powder mixture of 98% Fe-Al alloy (50% Al)+2% NH_4Cl reveals three layers. The thickness of each layer is directly proportional to the square root of alitizing time. The experimental data indicate the relative diffusion rate of nickel atoms toward the surface and that of aluminum atoms from the surface. Calculations show that after alitizing, almost the entire aluminum is concentrated in the intermetallide layers. Four tables in the original article show the characteristics of diffusive layers after 4, 16, and 36 hours of alitizing at 950°C, such as the relative layer thickness, crystal structure, crystal lattice parameter, color, composition of nickel and aluminum (in percent), density (g/cm^3), and microhardness (kg/mm^2). Table 4 provides specific data on the thickness and mean composition of each layer after alitizing. In open air at 950°C, the surface of the intermetallide NiAl forms a fine layer of oxide α-Al_2O_3 which protects the alitized layer from further oxidation until the intermetallide layer dissolves in the nickel.

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1/2 014 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--GEOCHEMISTRY OF PLATINUM GROUP ELEMENTS IN ORES OF COPPER MOLYBDENUM DEPOSITS IN THE ARMENIAN SSR -U-

AUTHOR-(03)-FARAMAZYAN, A.S., KALININ, S.K., TEREKHOVICH, S.L.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1455-7

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOCHEMISTRY, PLATINUM, COPPER, MOLYBDENUM, METAL ORE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0278 STEP NO--UR/0020/70/190/006/1455/1457

CIRC ACCESSION NO--AT0108578

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AT0108578

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SAMPLES OF ORES AND CU AND MO CONCS. FROM THE KADZHARAN, AGARAK, DASTAKERT, AIGEDZOR, AND DZHINDARA DEPOSITS WERE ANALYZED FOR PT METALS, CU, MO, AU, AND AG. THE PT METAL CONTENTS IN ORES VARIED WITHIN WIDE RANGES AND WERE DISTRIBUTED VERY UNIFORMLY. ANALS. OF 6 SAMPLES OF MO CONC. SHOWED 0.026-1.1 PPM. PT. THERE WAS NO CORRELATION BETWEEN THE AU AND AG CONTENTS AND THOSE OF PT METALS AT A VERY WEAK CORRELATION BETWEEN CONTENTS OF PT METALS AND COM. COMPONENTS OF THE ORE (MO AND CU). THERE WERE DISTINCT DIFFERENCES BETWEEN DISTRIBUTION OF PT METALS IN CU AND MO CONCS. THE MO CONCS. HAD HIGHER CONTENTS OF PT AND PD THAN CU CONCS., I.E. MOLYBDENITE IS THE MAIN MINERAL CONCENTRATOR OF PT METALS WHEREAS CHALCOPYRITE IS THEIR MAIN MINERAL CONCENTRATOR OF PT METALS WHEREAS CHALCOPYRITE IS THEIR MAIN MINERAL BEARER. QUITE DISTINCT CORRELATION DEPENDENCE BETWEEN CONTENTS OF PD AND PT WAS OBSD. IN MO CONCS. WHERE PT PREDOMINATED OVER PD (PD-PT EQUALS 0.3-1 1-1). IN CU CONCS. AND ORES, THE PD CONTENT WAS USUALLY 5-6 TIMES HIGHER THAN THAT OF PT. NO INDEPENDENT PT MINERALS WERE DETECTED. HOWEVER, THE MINERAL FORM OF THEIR PRESENCE (SULFIDES OR OTHER COMPDS.) IS SUSPECTED IN THE FORM OF SUBMICROSCOPIC INCLUSIONS. THE DISTRIBUTION OF PT AND PD IN CU AND MO CONCS. EVIDENTLY WAS CONTROLLED BY THE TEMP. OF MINERALIZATION. THE PT MINERALS WITH ADMIXT. OF PD ASSOCD. WITH THE EARLIEST AND HIGH TEMP. MO MINERALIZATION WHEREAS MINERALS OF PD WITH ADMIXT. OF PT WERE RELATED TO THE LATER RELATIVE LOW TEMP. (CHALCOPYRITE) STAGE OF MINERALIZATION.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--INVESTIGATION OF THE DESTRUCTION OF ALUMINOSILICATE REFRACTORIES WHICH CONTAIN BORON NITRIDE -U-

AUTHOR-(04)-GOGOTSI, G.A., KURIAT, R.I., TEREKHOVSKIY, B.I., TRESVYATSKIY, S.G.

COUNTRY OF INFO--USSR

SOURCE--KIEV, PROBLEMY PROCHNOSTI, NO 3, MAR 70, PP 47-50

DATE PUBLISHED-----MAR 70

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

TOPIC TAGS--CRACK PROPAGATION, STRESS LOAD, THERMAL STRESS, REFRACTORY MATERIAL, ALUMINUM SILICATE, BORON NITRIDE, CORUNDUM, CLAY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0854

STEP NO--UR/3663/70/000/003/0047/0050

CIRC ACCESSION NO--AP0116366

UNCLASSIFIED

2/2 033 UNCLASSIFIED

CIRC ACCESSION NO--AP0116366 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECIMENS OF COMPLEX ALUMINOSILICATES CONTAINING BORON NITRIDE WERE STUDIED UNDER THERMAL LOADING CONDITIONS UP TO 2,5000DEGREESC TO DETERMINE THE CHARACTERISTICS OF CRACK FORMATION AND DESTRUCTION OF THESE REFRACTORY MATERIALS. TO REGISTER THE TEMPERATURE DURING TESTING, SPECIAL THERMOMETRIC SPECIMENS WITH BUILT IN THERMOCOUPLES WERE MADE. THE TIMES OF FRACTURE WERE DETERMINED BY CURRENT CONDUCTING PICKUPS. IT WAS FOUND THAT COMPOSITIONS CONTAINING 40-50PERCENT BORON NITRIDE ARE MOST RESISTANT TO THERMAL LOADING. WHEN THE BORON NITRIDE CONCENTRATION WAS HIGH (60PERCENT OR MORE) THE FRACTURE OF THE CYLINDRICAL SPECIMENS WAS CHARACTERIZED BY BOTH RADIAL AND ANNULAR CRACKS. ANALYSIS OF THE FRACTURED SURFACES REVEALED THAT THE ABILITY OF THESE MATERIALS TO WITHSTAND THERMAL LOADING DEPENDS TO A CONSIDERABLE EXTENT ON THE DISTANCE BETWEEN CORUNDUM GRAINS AND THE UNIFORMITY OF THEIR DISTRIBUTION. IT WAS FOUND THAT A REFRACTORY MATERIAL WHICH WITHSTANDS EXTREME TEMPERATURE DIFFERENTIALS MAY BE PRODUCED BY PROPER SELECTION OF THE RATIO OF COMPONENTS REFRACTORY CLAY, CORUNDUM AND A CERTAIN AMOUNT OF BORON NITRIDE. FACILITY: INSTITUTE OF PROBLEMS OF STRENGTH, ACADEMY OF SCIENCES OF THE UKRSSR; INSTITUTE OF PROBLEMS IN THE SCIENCE OF MATERIALS, ACADEMY OF SCIENCES OF THE UKRSSR, KIEV.

UNCLASSIFIED

USSR

UDC: 669.295.5:669.292/1297:620.193/.196

TEREMETSKIY, V. A., KASHCHUK, V. A.

"Heat Resistance of Binary Alloys of Titanium with the Transition Metals of Groups III and V"

Sb. Nauch. Tr. Tomsk. Inzh.-Stroit. In-t [Collected Scientific Works of Tomsk Institute of Construction Engineering], 1973, No 21, pp 35-39 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8I727, by L. Petrova).

Translation: The influence of the addition of transition metals of group III (0.28% Pr, 0.35% Y, 0.59% La) and group V (0.76% V, 0.45% Nb, 0.41% Ta) of the periodic system on the oxidation properties of Ti at 800° is studied. The content of the metals added corresponded to a concentration near the limit of solubility in α Ti. Y, La and Pr decrease the oxidizability of Ti by 30-35%, Nb and Ta -- by 35-40%. The alloy Ti-0.76% V is oxidized significantly more intensively than Ti. 2 figures, 3 biblio. refs.

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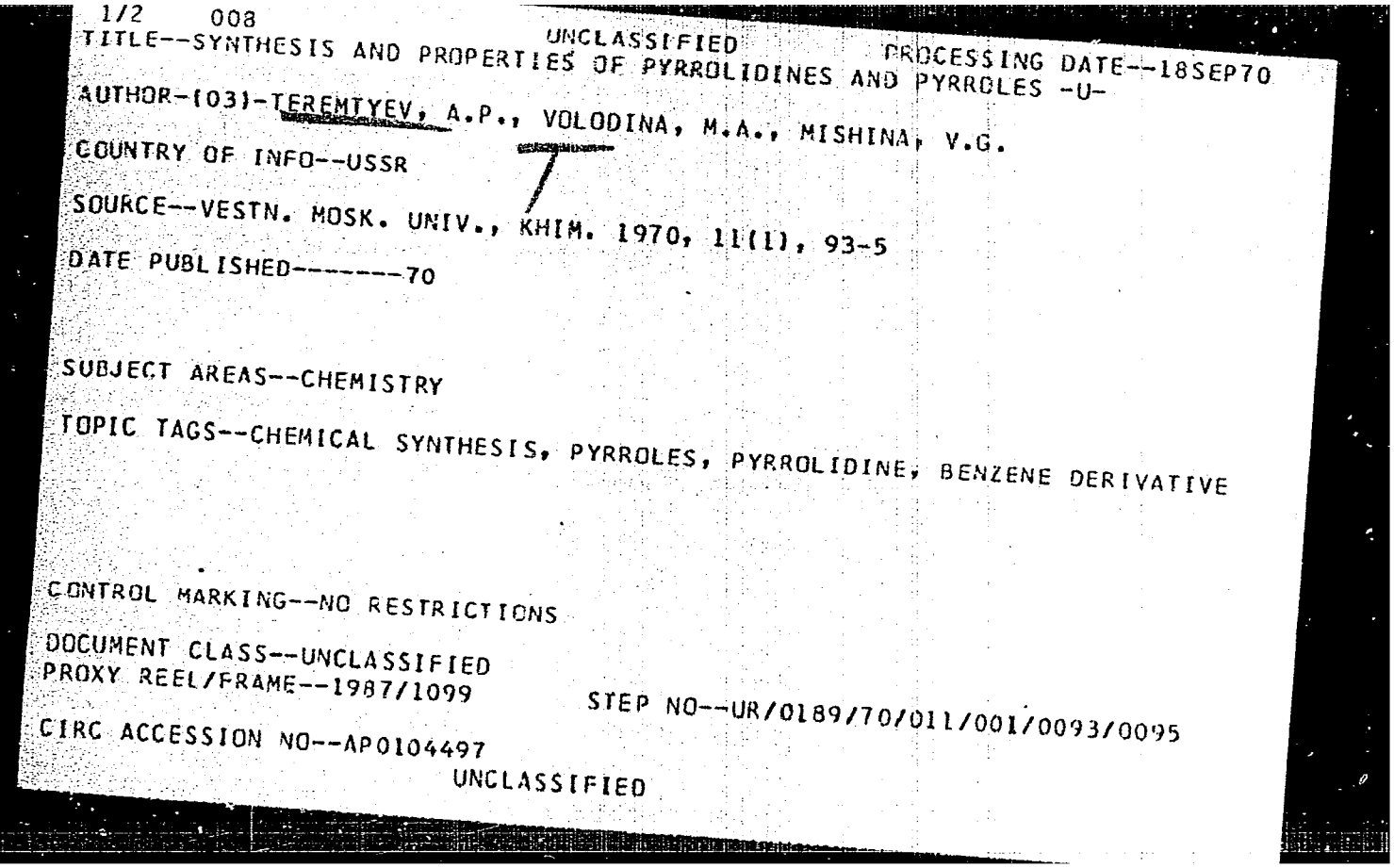


1/2 008 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--SYNTHESIS AND PROPERTIES OF PYRROLIDINES AND PYRROLES -U-

AUTHOR-(03)-TEREMTYEV, A.P., VOLODINA, M.A., MISHINA, V.G.

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11(1), 93-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, PYRROLES, PYRROLIDINE, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1099 STEP NO--UR/0189/70/011/001/0093/0095

CIRC ACCESSION NO--AP0104497

UNCLASSIFIED

2/2 008 UNCLASSIFIED

CIRC ACCESSION NO--AP0104497 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO 0.04 MOLE HCONME SUB2 WAS ADDED FOR 10 MIN 0.042 MOLE POCL SUB3, WITH COOLING AND STIRRING, THE MIXT. STIRRED 45 MIN, AND WITH COOLING WAS ADDED FOR 30 MIN 0.01 MOLE 1,ALKYL,2,METHYL(OR PHENYL)CYCLOPENTA OR CYCLOHEXA(B)PYRROLE IN 2.7 ML HCONME SUB2. THE MIXT. WAS HEATED AT 35-40DEGREES TO GIVE THESE I (R, R PRIME1, N, PERCENT YIELD, B SUB4, M.P., AND N PRIME20 SUBD GIVEN): ME, BU, 1, 50, 160-2DEGREES, -, 0.15430; PH, ET, 1, 75, -, 110-11DEGREES, -; ME, BU, 2, 60, 168-9DEGREES, -, 0.15510; PH, ET, 3, 99, -, 132-3DEGREES, -. ADDING TO 0.004 MOLE I (R EQUALS PH, R PRIME1 EQUALS ET, N EQUALS 1 OR 2) IN 25 ML H SUB2 O, 0.04 MOLE KMNO 3 HR, FOLLOWED BY 1.5 HR STIRRING GAVE 96PERCENT BZOH.

UNCLASSIFIED

UNCLASSIFIED

TITLE--VIBRONIC ABSORPTION IN IMPURITY CRYSTALS OF DEUTERIONAPHTHALENES -U-

PROCESSING DATE--16OCT70

AUTHOR-(02)-SHEKA, YE.F., TERENETSKAYA, I.P.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 720-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ABSORPTION SPECTRUM, NAPHTHALENE, ISOTOPE, CRYSTAL, EXCITED STATE, DEUTERIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0450

STEP NO--UR/0181/70/012/003/0720/0728

CIRC ACCESSION NO--AP0107056

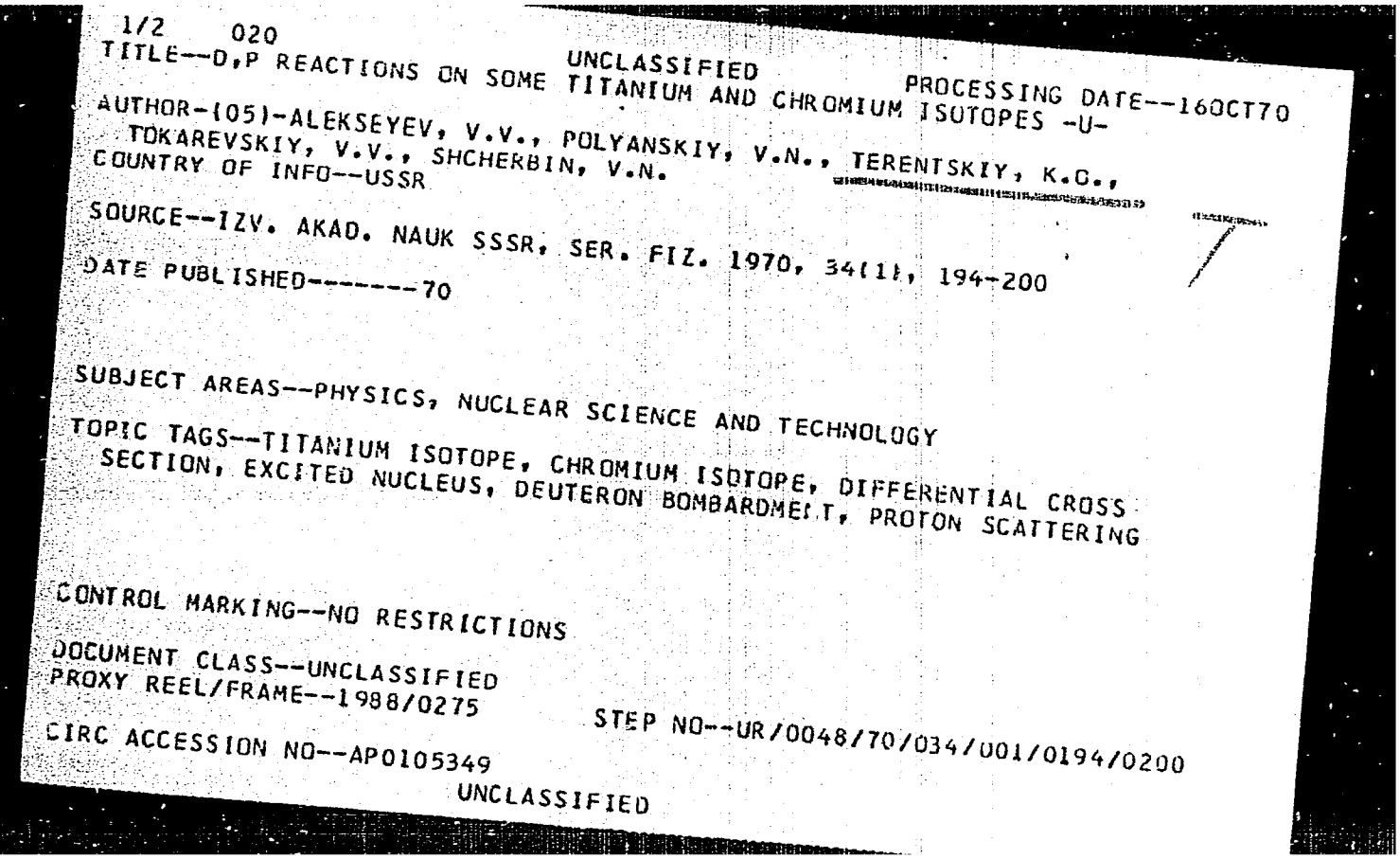
UNCLASSIFIED

272 022 UNCLASSIFIED

CIRC ACCESSION NO--AP0107056 PROCESSING DATE--16OCT79

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VIBRONIC ABSORPTION SPECTRA WERE INVESTIGATED OF 8 ISOTOPE IMPURITY CRYSTALS OF DEUTERIONAPHTHALENES (H SUBS IN D SUB8; ALPHA D AUB1 IN D SUB8; H SUB8 IN BETA D SUB4; ALPHA D SUB4 IN D SUB8, D SUB8 IN H SUB8; D SIB8 IN ALPHA D SUB1; AND D SUB8 IN BETA D SUB1) IN THE REGION OF THE TRANSITION PRIMEI A SUBIG YIELDS PRIMEI B SUB2U B SUBIG AT 4DEGREES K. A COMPLEX SPECTRAL STRUCTURE WAS OBSD. WHICH DEPENDS ON THE SIGN OF ISOTOPE SHIFT OF ELECTRONIC TERMS OF IMPURITY MOLS. RELATIVE TO THE MOLS. OF CRYSTAL SOLVENT. THIS STRUCTURE IN TERMS OF THE THEORY OF RASHBA IS RELATED TO THE EXCITATION OF DISSOCD. VIBRONIC STATES. INTERPRETATION WAS CARRIED OUT OF THE SPECTRAL BANDS. PARAMETERS WERE DETD. BY THE USE OF WHICH THE TYPES WERE FOUND OF CONFIGURATION MIXING WHICH DET. THE EXCITATION OF DISSOCD. STATES. ANAL. WAS CARRIED OUT OF THE DISTRIBUTION OF INTENSITIES IN THE VIBRONIC ABSORPTION OF AN IMPURITY CRYSTAL. FACILITY: INST. FIZ. TVERD. TELA, CHERNOGOLOVKA, USSR.

UNCLASSIFIED



1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--D,P REACTIONS ON SOME TITANIUM AND CHROMIUM ISOTOPES -U-

AUTHOR-(05)-ALEKSEYEV, V.V., POLYANSKIY, V.N., TERENTSKIY, K.G., TOKAREVSKIY, V.V., SHCHERBIN, V.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 194-200

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--TITANIUM ISOTOPE, CHROMIUM ISOTOPE, DIFFERENTIAL CROSS SECTION, EXCITED NUCLEUS, DEUTERON BOMBARDMENT, PROTON SCATTERING

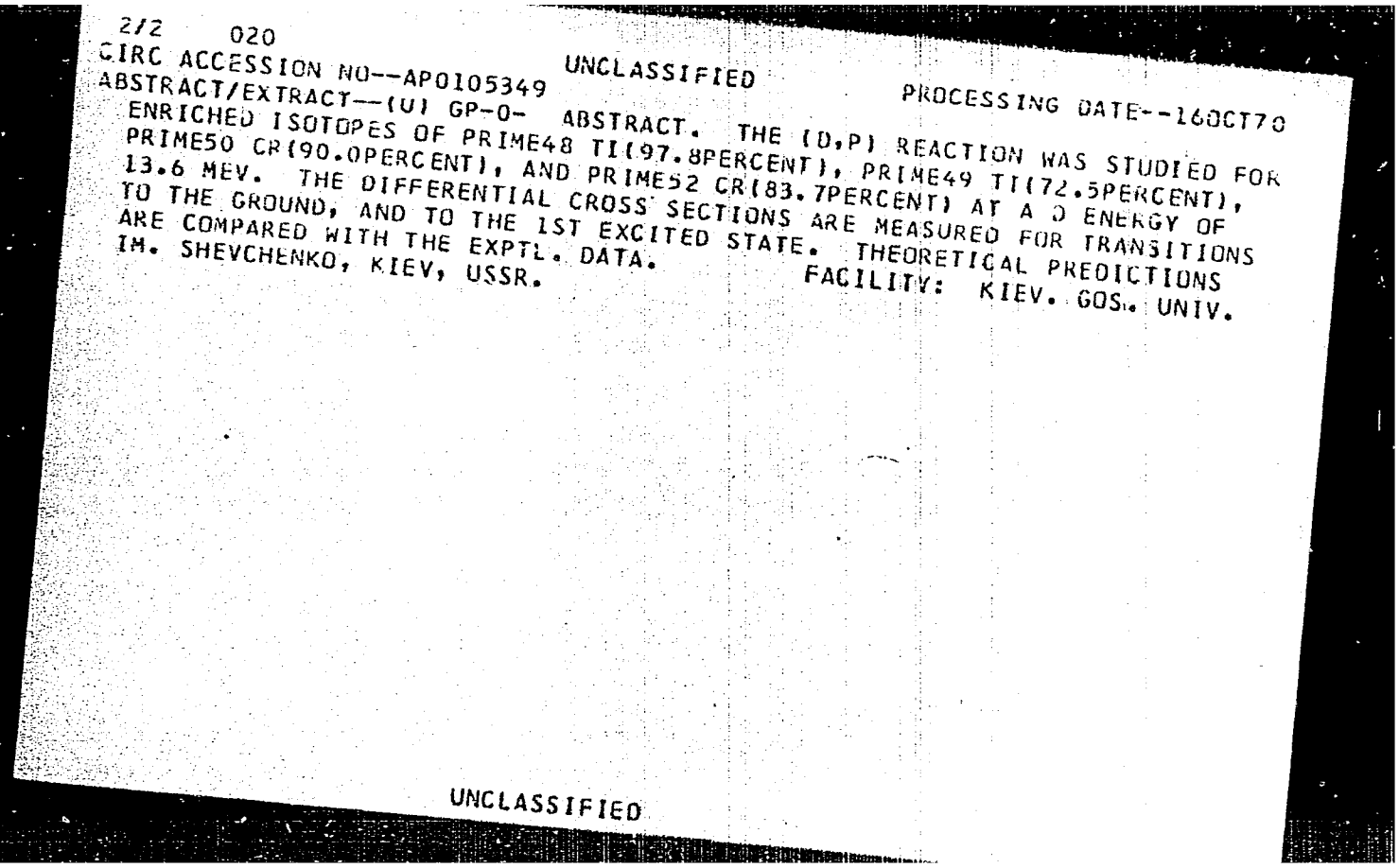
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0275 STEP NO--UR/0048/70/034/001/0194/0200

CIRC ACCESSION NO--AP0105349

UNCLASSIFIED



2/2 020
CIRC ACCESSION NO--AP0105349 UNCLASSIFIED PROCESSING DATE--16OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE (D,P) REACTION WAS STUDIED FOR ENRICHED ISOTOPES OF PRIME48 TI(97.8PERCENT), PRIME49 TI(72.5PERCENT), PRIME50 CR(90.0PERCENT), AND PRIME52 CR(83.7PERCENT) AT A D ENERGY OF 13.6 MEV. THE DIFFERENTIAL CROSS SECTIONS ARE MEASURED FOR TRANSITIONS TO THE GROUND, AND TO THE 1ST EXCITED STATE. THEORETICAL PREDICTIONS ARE COMPARED WITH THE EXPTL. DATA.
IM. SHEVCHENKO, KIEV, USSR. FACILITY: KIEV. GOS. UNIV.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--NATURE OF THE THIRD MAXIMUM IN ANGULAR DISTRIBUTIONS OF ELASTICALLY SCATTERED DEUTERONS -U-

AUTHOR-(04)-VERESHCHAGIN, A.N., TERENETSKIY, K.O., CHERNOV, I.P., TUKAREVSKIY, V.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 460-3

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--DEUTERON SCATTERING, ELASTIC SCATTERING, ANGULAR DISTRIBUTION, SCATTERING CROSS SECTION, CALCIUM ISOTOPE, TITANIUM ISOTOPE, MANGANESE ISOTOPE, SPIN ORBIT COUPLING, NUCLEAR MODEL, DIFFERENTIAL CROSS SECTION, CYCLOTRON/(U)U120 CYCLOTRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0205 STEP NO--UR/0048/70/034/002/0460/0463

CIRC ACCESSION NO--AP0105281

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105281

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STRONGLY RELATIVISTIC OPTICAL POTENTIAL AND A POSSIBILITY OF OBTAINING FURTHER EXPTL. DATA ALLOWED FOR A STUDY OF FORMING THE 3RD MAX. THAT REPRESENTS AN ANOMALY IN THE ANGULAR DISTRIBUTION OF CROSS SECTIONS OF THE ELASTIC SCATTERING OF 13.6 MEV D ON NUCLEI WITH A APPROXIMATELY EQUAL TO 50. IN THE U-120 CYCLOTRON, THE ELASTIC SCATTERING OF THESE D WAS STUDIED ON PRIME40 CA, PRIME46-50 TI, AND PRIME55 MN NUCLEI. SCATTERED D WERE REGISTERED WITH TELESCOPES CONSISTING OF SI(LI) DETECTORS FORMED BY THIN (DE-DX) AND THICK (E) SPECTROMETERS OF THICKNESSES 150 AND 1500 MM, RESP. THE SELECTION OF D WAS BASED UPON THE (DE-DX)E LAW. GEOMETRIC CONDITIONS OF THE EXPT., MONITORING THE FLUX AND EXPRESSING THE ABS. VALUES WERE DESCRIBED BY V. V. ALEXEEV, ET AL. (1968). ERRORS OF ABS. VALUES FOR DIFFERENTIAL CROSS SECTIONS DID NOT EXCEED PLUS OR MINUS 10PERCENT. THE CALCN. OF DIFFERENTIAL CROSS SECTIONS WAS BASED UPON THE OPTICAL MODEL OF THE NUCLEUS, TAKING SPIN ORBITAL INTERACTION INTO ACCOUNT. INTRODUCING THE SPIN ORBITAL INTERACTIONS INTO THE OPTICAL MODEL OF THE NUCLEUS YIELDS A RELIABLE ELUCIDATION OF EXPTL. RESULTS IN THE 3RD MAX. REGION. FACILITY: INST. FIZ., KIEV, USSR.

UNCLASSIFIED

Nuclear Physics

USSR

VERESHCHAGIN, A. N., [redacted] K. O., CHERNOV, I. P. and TOKAREVSKIY, V. V., Institute of Physics of the Academy of Sciences UkrSSR, Kiev State University imeni T. G. Shevchenko

"On the Nature of the 'Third Maximum' in Angular Distributions of Elastically Scattered Deuterons"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 34, No. 2, Feb 70, pp 460-463

Abstract: Anomalies in angular distributions observed in studying differential cross sections for the elastic scattering of 13.6 Mev deuterons over a wide range of atomic weights are discussed, particularly the anomalous behavior of the so-called "third maximum" in the neighborhood of nuclei with $A \approx 50$: while the remaining maxima of the angular distributions are shifted towards smaller angles as A increases, the position of the third maximum for Ti^{48}, $Cr^{50,52,54}$, and Fe^{56} shifts towards greater angles as A increases. The third maximum for nuclei with $A > 56$ merges with the fourth and is not detectable experimentally. In this article, new experimental data and a more realistic optical potential is used to find an explanation for this anomaly. The elastic scattering of 13.6 Mev deuterons by Ca, Ti, and Mn nuclei was measured on the U-120 cyclotron

USSR

VERESHCHAGIN, A. N., et al, Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, Vol. 34, No. 2, Feb 70, pp 460-463

of the Scientific Research Institute of Nuclear Physics at Tomsk Polytechnical Institute. The optimal potential parameters were calculated for the different isotopes using both theoretical and experimental cross sections. It was found that the experimental data in the region of the third maximum are satisfactorily explained by taking into account spin-orbital interaction.

Card 2/2

USSR

UDC 632.95

KOST, A. N., YUDIN, N. B., CHERNYSHEVA, N. B., TERENIN, V. I., Moscow University

"A Method of Making β-Indolyl Carboxylic Acid Amides"

USSR Author's Certificate No 339542, filed 10 Sep 70, published 23 Jun 72 (from RZh-Khimiya, No 9, May 73, abstract No 9N558 by T. G. Chekareva)

Translation: Amides of β-indolyl carboxylic acids, which may find application as growth regulators for plants and microorganisms or as intermediates for synthesizing medicines, are synthesized by saponification of the corresponding nitriles with concentrated H_2SO_4 while cooling to 0-5°C. Example. 3.12 g of 3-indolyl acetonitrile are added to 25 ml of concentrated H_2SO_4 cooled to 0°C while mixing and cooling. The mixture is allowed to stand for 16 hours at about 20°C, poured over ice, alkalized with a concentrated aqueous solution of NH_4OH, and the precipitate is isolated, giving 1.74 g of 3-indolyl acetamide, melting point 153°C (water), yield 50%. The following compounds of type I are synthesized by analogous methods (given are the compound, melting point, °C, and yield, %): 3-(3-indolyl)-propioamide, 134, 53; 3-(2-methyl-3-indolyl)-propioamide, 125-6, 99; 3-(2-methyl-5-chloro-3-indolyl)-propioamide, 145-6, 91.

1/1

USSR

UDC 546.55-547.24

KAZANKOVA, M. A., MALYKHINA, I. G., TERENINA, M. B., and LUTSENKO, I. F.,
Moscow State Institute imeni M. V. Lomonsov

"Generation of Copper Hydride and its Complexes With Compounds of Trivalent Phosphorus"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 10, 1972, pp 2133-2137

Abstract: In order to improve on the purity of the copper hydride obtained from the Wurtz reaction, cuprous bromide was reacted with triethyltin in absolute tetrahydrofuran at -25°, giving pure copper hydride. The degree of purity of the product was determined by comparing its reaction with triisopropylphosphine with that of copper hydride obtained by the Wurtz method. The stabilizing influence of triisopropylphosphine was suggested to be due to the formation of pi bonds with the d orbitals of the metal, and therefore hexamethyltriaminophosphine was predicted to show an even stronger stabilizing influence. Various stoichiometric complexes of cuprous halides or copper hydride with hexamethyltriaminophosphine were prepared. These hydrides had higher melting points than the corresponding triisopropylphosphine complexes. The halide complexes were also reduced to the corresponding hydrides and pure copper hydride with triethyltin. It was shown that the

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USSR

KAZANKOVA, M. A., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 10, 1972, pp 2133-2137

thermal stability of the complexes is inversely proportional to the number of ligands on a copper molecule. All reactions were carried out under dry argon.

2/2

USSR

TERENKO V. S.

UDC 621.373.421.13:621.372.412

"Spurious Angular Frequency Modulation of Quartz Oscillators with Vibration" Elektron. tekhnika. Nauchno-tekhn. sb. (Electronic Engineering. Scientific and Technical Collection), 1970, ser 9, vyp. 2, pp 40-44 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D274)

Translation: This article contains a discussion of the materials of an experimental investigation of the effect of vibrations on the frequency phase stability of yxb 2/-α°/35° cut precision resonators. There are four illustrations and a three-entry bibliography.

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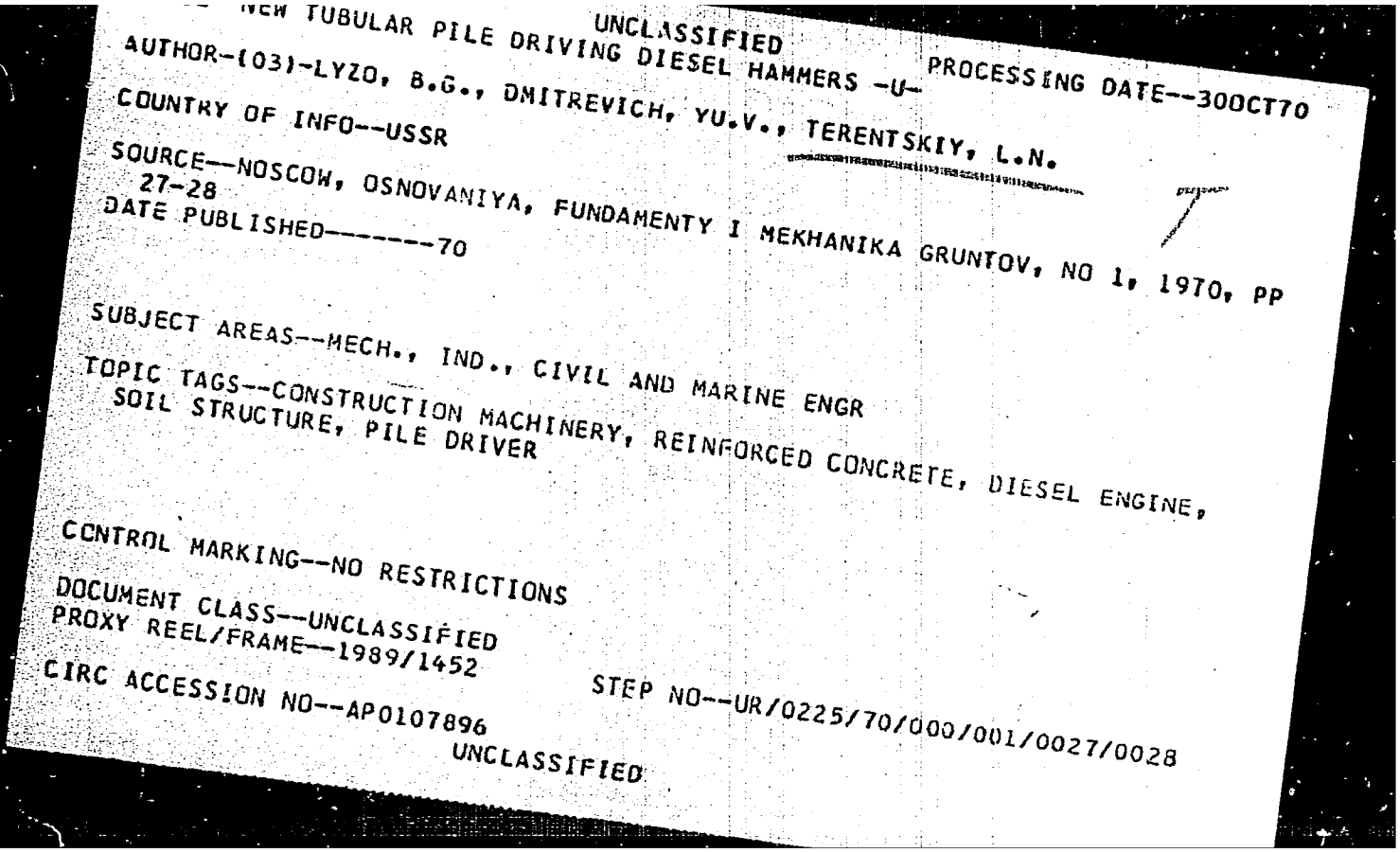


UNCLASSIFIED

NEW TUBULAR PILE DRIVING DIESEL HAMMERS -U- PROCESSING DATE--30OCT70

AUTHOR-(03)-LYZO, B.G., DMITREVICH, YU.V., TERENTSKIY, L.N.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, OSNOVANIYA, FUNDAMENTY I MEKHANIKA GRUNTOV, NO 1, 1970, PP 27-28

DATE PUBLISHED-------70

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

TOPIC TAGS--CONSTRUCTION MACHINERY, REINFORCED CONCRETE, DIESEL ENGINE, SOIL STRUCTURE, PILE DRIVER

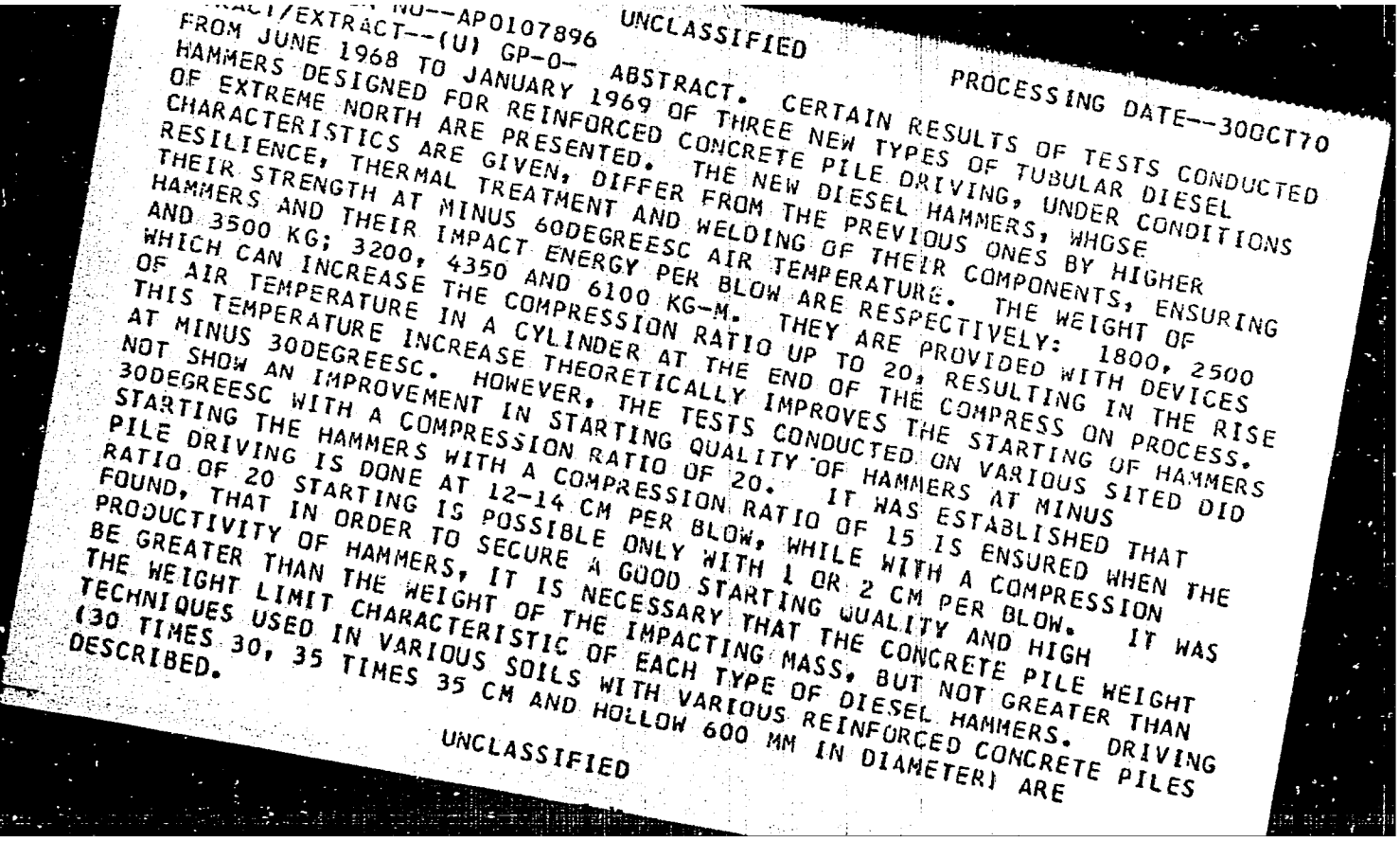
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1452 STEP NO--UR/0225/70/000/001/0027/0028

CIRC ACCESSION NO--AP0107896

UNCLASSIFIED



UNCLASSIFIED

PROCESSING DATE--30OCT70

/EXTRACT--(U) GP-0- ABSTRACT. CERTAIN RESULTS OF TESTS CONDUCTED FROM JUNE 1968 TO JANUARY 1969 OF THREE NEW TYPES OF TUBULAR DIESEL HAMMERS DESIGNED FOR REINFORCED CONCRETE PILE DRIVING, UNDER CONDITIONS OF EXTREME NORTH ARE PRESENTED. THE NEW DIESEL HAMMERS, WHOSE CHARACTERISTICS ARE GIVEN, DIFFER FROM THE PREVIOUS ONES BY HIGHER RESILIENCE, THERMAL TREATMENT AND WELDING OF THEIR COMPONENTS, ENSURING THEIR STRENGTH AT MINUS 60DEGREESC AIR TEMPERATURE. THE WEIGHT OF HAMMERS AND THEIR IMPACT ENERGY PER BLOW ARE RESPECTIVELY: 1800, 2500 AND 3500 KG; 3200, 4350 AND 6100 KG-M. THEY ARE PROVIDED WITH DEVICES WHICH CAN INCREASE THE COMPRESSION RATIO UP TO 20, RESULTING IN THE RISE OF AIR TEMPERATURE IN A CYLINDER AT THE END OF THE COMPRESS ON PROCESS. THIS TEMPERATURE INCREASE THEORETICALLY IMPROVES THE STARTING OF HAMMERS AT MINUS 30DEGREESC. HOWEVER, THE TESTS CONDUCTED ON VARIOUS SITED DID NOT SHOW AN IMPROVEMENT IN STARTING QUALITY OF HAMMERS AT MINUS 30DEGREESC WITH A COMPRESSION RATIO OF 20. IT WAS ESTABLISHED THAT STARTING THE HAMMERS WITH A COMPRESSION RATIO OF 15 IS ENSURED WHEN THE PILE DRIVING IS DONE AT 12-14 CM PER BLOW, WHILE WITH A COMPRESSION RATIO OF 20 STARTING IS POSSIBLE ONLY WITH 1 OR 2 CM PER BLOW. IT WAS FOUND, THAT IN ORDER TO SECURE A GOOD STARTING QUALITY AND HIGH PRODUCTIVITY OF HAMMERS, IT IS NECESSARY THAT THE CONCRETE PILE WEIGHT BE GREATER THAN THE WEIGHT OF THE IMPACTING MASS, BUT NOT GREATER THAN THE WEIGHT LIMIT CHARACTERISTIC OF EACH TYPE OF DIESEL HAMMERS. DRIVING TECHNIQUES USED IN VARIOUS SOILS WITH VARIOUS REINFORCED CONCRETE PILES (30 TIMES 30, 35 TIMES 35 CM AND HOLLOW 600 MM IN DIAMETER) ARE DESCRIBED.

UNCLASSIFIED

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UDC 624.155.15

USSR

LYZO, B. G., DMITREVICH, Yu. V., TERENTSKIY, L. N.

"New Tubular Pile Driving Diesel Hammers"

Moscow, Osnovaniya, Fundamenty i Mekhanika Gruntov, No 1, 1970, pp 27-28

Abstract: Certain results of tests conducted from June 1968 to January 1969 on three new types of tubular diesel hammers designed for reinforced concrete pile driving, under conditions of Extreme North are presented. The new diesel hammers, whose characteristics are given, differ from the previous ones by higher resilience, thermal treatment and welding of their components, ensuring their strength at -60°C air temperature. The weight of hammers and their impact energy per blow are respectively: 1800, 2500 and 3500 kg; 3200, 4350 and 6100 kg/m. They are provided with devices which can increase the compression ratio up to 20, resulting in the rise of air temperature in a cylinder at the end of the compression process. This temperature increase theoretically improves the starting of hammers at -30°C. However, the tests conducted on various sites did not show an improvement in starting quality of hammers at -30°C with a compression ratio of 20.

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USSR

LYZO, B. G., et al., Osnovaniya, Fundamenty i Mekhanika Gruntov, No 1, 1970, pp 27-28

It was established that starting the hammers with a compression ratio of 15 is ensured when the pile driving is done at 12-14 cm per blow, while with a compression ratio of 20 starting is possible only with 1 or 2 cm per blow. It was found, that in order to secure a good starting quality and high productivity of hammers, it is necessary that the concrete pile weight be greater than the weight of the impacting mass, but not greater than the weight limit characteristic of each type of diesel hammers. Driving techniques used in various soils with various reinforced concrete piles (30x30, 35x35 cm and hollow 600mm in diameter) are described. Orig. art. has: 1 table.

2/2

UDC 547.825

USSR

IL'ICHEV, Yu. Ye., IL'ICHEV, I. Ye., RUKHADZE, Ye. G., and TERENT'YEV,
Moscow State University

"Obtaining Alkylmercaptoethylpyridines"

Leningrad, Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, p 2763

Abstract: A method was developed for obtaining alkylmercaptothylpyridines (II) by alkaline decomposition of the salts of S-alkylisothiuronium in the presence of vinylpyridine. This method assures high yield of the desired product, but unfortunately produces a large number of S-alkylisothiuronium salts.

By using 2-Vinylpyridine, thiourea, and benzyl chloride, a 47.4% yield of benzylmercaptothylpyridine was obtained; similar results were obtained with ethylmercaptoethyl-2-pyridine, using ethyl bromide instead of benzyl chloride, and here the yield was 50%.

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1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--IRON CARBONYLS AS INHIBITORS OF RADICAL CHAIN REACTIONS OF ORGANOSULFUR COMPOUNDS -U-

AUTHOR-(05)-KANDROR, I.I., PETROVA, R.G., PETROVSKIY, P.V., TERENTYEV, A.B., FREYDLINA, R.KH.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(4), 835-8 (CHEM)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IRON COMPOUND, CARBONYL COMPOUND, ORGANIC SULFUR COMPOUND, ALKENE, CHAIN REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0698 STEP NO--UR/0020/70/191/004/0835/0838

CIRC ACCESSION NO--AT0124370

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124370

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING MIXTS. OF UNSATD. SULFIDES AND PHSH WITH FE(CO SUB5 (I) (0.5 MOLE PERCENT) IN SEALED AMPULS AT 80DEGREES OR 150DEGREES 10 HR WAS USED AS THE TECHNIQUE FOR STUDYING THE EFFECT OF THE CARBONYL ADDITIVE ON THE REACTION. I INHIBITED THE RADICAL ADDN. OF PHSH TO THE OLEFINS. THE FOLLOWING PRODUCTS WERE OBTAINED FROM THE INDICATED OLEFINS IN THE PRESENCE (ABSENCE) OF I; PHSCH:CH SUB2 100PERCENT MECH (SPH) SUB2 (100PERCENT (PHSCH SUB2) SUB2); PHSCPH:CH SUB2 1000PERCENT MEC(SPH) SUB2 PH (56PERCENT PHSCHPHCH SUB2 SPH AND 27PERCENT MEC(SPH) SUB2 PH); AND MEC(SPH) SUB2 PH 100PERCENT MECH(SPH)PH; NO REACTION TOOK PLACE WITH OR WITHOUT FE(CO) SUB5 WITH PHSH AND MECH(SPH) SUB2. FORMATION OF PHSCHPHME ABOVE RESULTED FROM ADDN. OF PHSH IN ACCORD WITH THE MARKOVNIKOV RULE, AND CONVERSION OF THE MERCAPTAL INTO THE FINAL PRODUCT OCCURRED BY LOSS OF PHS RADICAL, WITH FE(CO) SUB5 INHIBITING THE RADICAL ADDN. OF PHSH TO THE ORIGINAL OLEFINIC SULFIDE. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr. AP0100239 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code UR0062

111856q **Radiation-chemical telomerization of ethylene by methyl formate.** Bryantsev, I. N.; Zagorets, P. A.; Romina, N. N.; Terent'ev, A. B.; Freidlina, R. Kh. (Inst. Elementoorg. Soedin., Moscow, USSR). *Izv. Akad. Nauk SSSR, Ser. Khim.* 1970, (1), 169–71 (Russ). The telomerization of $H_2C:CH_2$ with HCO_2Me gives $Me(CH_2)_nCO_2Me$ (I) (n = 1, 3, and 5), $HCO_2(CH_2)_nMe$ (II) (n = 2, 4, or 6), a compd. of mol. formula $C_{10}H_{20}O_2$, and $C_2H_{11}CHEtCO_2Me$, whether initiated with *tert*-Bu_2O_2 or γ-irradn. The increase in the reaction temp. increases the yields of I + II (at 125° and 190°, the yields were 0.25 and 7.0% and the G-values 0.71 and 20.0, resp.) and the proportion of II in the mixt. increased. The percentages of the products listed above at 125° were 20.1, 27.6, 21.2, 2.5, 4.2, 3.4, 17.0, and 4.0, resp.; and at 190°, 12.6, 19.4, 16.4, 7.8, 15.5, 8.7, 9.4, and 9.7, resp. With *tert*-Bu_2O_2 as initiator, the yield was 24.0% at 140° in 4 hr and the product percentages were 25.9, 20.0, 10.8, 19.4, 9.7, 3.2, 6.2, and 4.3%, resp. CPJR

REEL/FRAME
19841629

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--TELOMERIZATION OF ETHYLENE WITH METHYL PROPIONATE AND ETHYL ACETOACETATE -U-

AUTHOR-(03)-TERENTYEV, A.B., CHIZHOV, YU.P., BRAKHME, P.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 176-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACETATE, ETHYLENE, ALIPHATIC CARBOXYLIC ACID, CHEMICAL SEPARATION, GAS CHROMATOGRAPHY, CHEMICAL REACTION RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0702 STEP NO--UR/0062/70/000/001/0176/0178

CIRC ACCESSION NO--AP0113566

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0113566

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TELOMERIZATION OF ETHYLENE (I) WITH ETCO SUB2 H OR ETCO SUB2 ME IN THE PRESENCE OF TERT,BU SUB2 O GAVE THE FOLLOWING PRODUCTS (PRODUCT, PERCENT IN MIXT. GIVEN): (FORMULA SHOWN ON MICROFICHE). THE LAST 2 PRODUCTS ARE FORMED BY REARRANGEMENT OF II OR III. THE TELOMERIZATION OF I WITH ACCH SUB2 CO SUB2 ET IN THE PRESENCE OF DICYCLOHEXYL PERCARBONATE GAVE A MIXT. CONTG. 59PERCENT ACCHETCO SUB2 ET, 16PERCENT ACCHBUCO SUB2 ET, 18PERCENT ACCETBUCOS BU2 ET, AND 7PERCENT ACCET SUB2 CO SUB2 ET. ALL THESE PRODUCTS WERE SEPD. AND IDENTIFIED BY GAS CHROMATOG. FACILITY: INST. ELEMENTOORG. SOED IN., USSR.

UNCLASSIFIED

USSR UDC 632.95

TERENT'YEV, A. P., GRABLYAYUSKAS, K. V., and KOTOV, A. L.

"Method of Production of N',N'-Dimethylhydrazide of Succinic Acid"

USSR Author's Certificate No 309004, filed 6/02/70, published 29/09/71; (Translated from Referativnyy Zhurnal, Khimiya, No 9, 1972, Abstract No 9 N590 P by T. A. Belyayeva).

Translation: Four-hundred point three g of succinic anhydride is added to the mixture of 600 ml CCl_4 and 100 ml DMPA, then a solution of 240.4 g Me_2NNH_2 in 300 ml CCl_4 is added over 30-60 minutes at 20-30° (cooled with ice and salt to maintain the temperature), the mixture is stirred for 2 hours at ~20°. The precipitate is separated, washed with CCl_4, suspended in 1.2 l iso-PrOH, boiled for 30 minutes, cooled to 0°, filtered, the precipitate is washed with iso-PrOH and ethyl acetate, and dried, producing succinic acid N',N'-dimethylhydrazide, yield 85.8-90.8%. IR spectra are presented.

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UDC 541.49

USSR

IL'ICHEV, I. Ye., and TERENT'YEV, A. P. (Deceased), Chair of Organic Chemistry

"Alkylpyridine Derivatives. Reaction of Pyridylethylated Amines with Aliphatic Epoxides"

Moscow, Vestnik Moskovskogo Universiteta, Vol 12, No 2, Mar-Apr 71, pp 238-239

Abstract: Ethylene oxide was passed through a methanol solution of monopyridyl-ethylmethylamine heated to 50-55°. The reaction mixture was heated for another 3 hrs, methanol was evaporated and the product -- N-Methyl-N-[2-(2 pyridyl) ethyl]-ethanolamine (I) -- was distilled under vacuum; its boiling point was 130-131.5°/1mm, n_D^{20} 1.5264, d_4^{20} 1.0484. (I) was converted to an acetate, b.p. 117-118°/0.5 mm, n_D^{20} 1.4997, d_4^{20} 1.0480. N-Ethyl-N-[2-(2-pyridyl)-ethyl]-ethanolamine, b. p. 108-109°/0.5mm, n_D^{20} 1.5199, d_4^{20} 1.0296 was similarly obtained; its acetate boiled at 123-125°/1mm, n_D^{20} 1.4944, d_4^{20} 1.0304. Essentially the same reaction was used for the preparation of N-methyl-N-[2-(2-pyridyl)ethyl-]-propanol-2-amine, b.p. 128-130°/5mm, n_D^{20} 1.5103 d_4^{20} 1.0112 and

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USSR

IL'ICHEV, I. Ye. and TERENT'YEV, A. P., Vestnik Moskovskogo Universiteta, Vol 12, No 2, Mar-Apr 71, pp 238-239

N-Ethyl-N-[2-(2-pyridyl)-ethyl]-propanol-2-amine, b.p. 110-112°/1.5 mm, n_D^{20} 1.5058, d_4^{20} 0.9996, their acetates having the following properties, respectively: b.p. 127-129°/1mm, n_D^{20} 1.4924, d_4^{20} 1.0235 and b.p. 118-120°/0.5 mm, n_D^{20} 1.4901, and d_4^{20} 1.0091. The reaction of pyridylethylmethylamine with epichlorohydrine gave 2,3-epoxy-N-methyl,N-[2-(2-pyridyl)-ethyl]-propylamine, b.p. 121-123°/2.5mm, n_D^{20} 1.5184, d_4^{20} 1.0422, and 2,3-epoxy-N-ethyl-N-[2-(2-pyridyl)-ethyl]-propylamine, b. p. 134-136°/4mm, n_D^{20} 1.5124, d_4^{20} 1.0269. N-[2-(2-pyridyl)ethyl]-ethanolamine, b. p. 139-140°/2mm was obtained by treating ethanolamine with 2-vinylpyridine in presence of HCl.

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USSR

UDC 547.754.756.759.07

KOST, A. N., SOLOMKO, Z. F., PRIKHOD'KO, N. M., and TERENT'YEV, A. P. (deceased)
Moscow State University Imeni M. V. LOMONOSOV, Dnepropetrovsk State University

"Chemistry of Indole. XXIV. Synthesis of 1-Acetyl-6-methyl-8-keto-2,3,7,8-tetrahydro-1H,9H-1,4-diazepine-[2,3-f]-indole"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 787-788

Abstract: To 1.91 g of 1-acetyl-5,6-diaminoindoline in 50 ml dry xylene, 1.52 ml of acetoacetate in 5 ml xylene is added dropwise with heating. The reaction mixture is heated for one hour with continuous removal of water. After cooling, a solid product -- 1-acetyl-6-methyl-8-keto-2,3,7,8-tetrahydro-1H,9H-1,4-diazepino-[2,3-f]-indole (I) is obtained, which after repeated recrystallization from methanol melts at 223.5-224.5°. Another route to (I) consists of indoline reaction with acetoacetate to form ethyl ester of β-[(1-acetyl-6-aminoindolinyl-5)-amino]crotonic acid, which then reacts with sodium ethoxide to yield (I). Heating (I) in 2N sulfuric acid gives 2-methyl-5-acetyl-6,7-dihydroimidazo-[2,3-f]-indole, m.p. 328-329°.

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UNCLASSIFIED PROCESSING DATE--18SEP70

1/2 019

TITLE--SUBSTITUTION ON THE BENZENE RING OF INDOLE. XI. SYNTHESIS OF SUBSTITUTED 5,NITRO,6,AMINOINDOLINES -U-

AUTHOR-(04)-TERENTYEV, A.P., VINOGRADOVA, YE.V., CHETVERIKOV, V.P., DASHKEVICH, S.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN, 1970, (2), 161-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, INDOLE, ORGANIC NITRO COMPOUND, [illegible]NE, UV SPECTRUM, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1093 STEP NO--UR/0409/70/000/002/0161/0163

CIRC ACCESSION NO--AP0104491

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70

2/2 019

CIRC ACCESSION NO--AP0104491

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CF. CA 71: 22110D. I (R PRIME1 EQUALS H, R PRIME2 EQUALS NO SUB2) WAS HEATED WITH EXCESS AMINE TO GIVE I (R PRIME1 EQUALS H) (R PRIME2, PERCENT YIELD, AND M.P. GIVEN): CYCLOHEXYLAMINO, 91, 184.5-5.5DEGREES (ALC.); PIPERIDINO, 80, 103-4DEGREES (HEPTANE); HO(CH SUB2)SUB2 NH, 76.5, 195-4DEGREES (MEOH OR MENO SUB2); BUNH (II) 69, 144-5DEGREES (AQ. MEOH); PHCH SUB2 NH (III), 90, 172.5-3.5DEGREES (ETOH). I (R PRIME1 EQUALS AC, R PRIME2 EQUALS NO SUB2) (IV) (3 G) AND 10 ML BUNH SUB2 WAS HEATED 6 HR AT 78DEGREES TO GIVE 82PERCENT II. IV (3.1 G) AND 15 ML BUNH SUB2 WAS REFLUXED 2 HR TO GIVE 30PERCENT I (R PRIME1 EQUALS AC, R PRIME2 EQUALS BUNH), M. 142-3DEGREES (MEOH). SIMILARLY PREPD. WAS 47.8PERCENT I (R PRIME1 EQUALS AC, R PRIME2 EQUALS PHCH SUB2 NH) (V), M. 221.5-22DEGREES (HCONME SUB2). III (0.1 G) AND 5 ML AC SUB2 O WAS HEATED 2.5 HR TO GIVE 86.5PERCENT V. N SUB2 H SUB4 .H SUB2 O (3 ML) WAS ADDED TO 3 G IV IN 25 ML ETOH TO GIVE 48PERCENT (R PRIME1 EQUALS AC, R PRIME2 EQUALS NHNH SUB2), M. 208-9DEGREES (ISO-PROH). SIMILARLY, 77PERCENT I (R PRIME1 EQUALS H, R PRIME2 EQUALS NHNH SUB2), M. 179-80DEGREES (ETOH), WAS OBTAINED FROM 10 ML N SUB2 H SUB4 .H SUB2 O AFTER 4 HR IN THE PRESENCE OF 0.4 G K SUB2 CO SUB3. UV SPECTRAL DATA WERE GIVEN.

UNCLASSIFIED

1/2 [illegible] 028 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ANALYSIS OF HETEROORGANIC COMPOUNDS. VII. DIFFERENTIAL SPECTROPHOTOMETRIC DETERMINATION OF SILICON AS MOLYBDOSILICIC ACID -U-

AUTHOR-(03)-TERENTYEV, A.P., GRANDSKOVA, N.A., BONDAREVSKAYA, YE.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(1), 196-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--FABRIC, HETEROCYCLIC BASE COMPOUND, SILICON, SPECTROPHOTOMETRIC ANALYSIS, BENZENE DERIVATIVE, ORGANOSILICON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1328 STEP NO--UR/0075/70/025/001/0196/0198

CIRC ACCESSION NO--AP0055999

UNCLASSIFIED

CIRC ACCESSION NO--AP0055999

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A VARIANT FOR THE DIFFERENTIAL SPECTROPHOTOMETRIC METHOD FOR SI DETN. AS MOLYBDOSILICIC ACID IS SUGGESTED WITH K SUB2-CRO SUB4 IMITATING THE COLOR OF THE ACID AS REF. SOLN. THE REF. SOLN. IS PREPD. BY DISSOLVING 3 G K SUB2 CRO SUB4 IN 1 1.0.05N KOH. THE ABSORBANCE OF THIS SOLN. (1 ML IN 50 ML H SUB2 O) CORRESPONDS AT 400 MMU TO THAT OF THE MOLYBDOSILICIC ACID CONTG. 365 MUG SI. THE METHOD CAN BE USED FOR THE DETN. OF SI IN ORGANOSILICON COMPDS., SUCH AS PH SUB3 SIOH, PH SUB3 SIOSIPH SUB3 AND FABRICS IMPREGNATED BY VARIOUS HYDROPHOBIC ORGANOSILICON LIQS. WITH STD. DEVIATIONS OF 0.08-0.14.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310004-6"

USSR UDC: 547.75

TERENT'YEV, A.P., VOLODINA, M.A., MISHINA, V.G., Department of Organic Chemistry Moscow State University imeni M.V. Lomonosov, Moscow, Ministry of Higher and Secondary Specialized Education RSFSR

"Synthesis and Properties of Pyrrolidines and Pyrroles"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/Feb 70, pp 93-95

Abstract: The authors investigated the reaction of formylation of 1-alkyl-2-(methyl- or phenyl)-cyclopentano-4, 5-pyrroles, and also 1-alkyl-2-(methyl- or phenyl)-cyclohexano-4,5-pyrroles. The position of the formyl group was determined on the basis of the products of formylation of 1-ethyl-2-phenylcyclopentano- and cyclohexano-4, 5-pyrroles. Interaction of 1-alkyl-2-(methyl- or phenyl)-cyclopentano- and cyclohexano-4, 5-pyrroles with dimethylformamide and phosphorus oxychloride formed previously unknown 1-alkyl-2-(methyl- or phenyl)-3-formylcyclopentano- and cyclohexano-4, 5-pyrroles with a yield of 50-89%. The synthesized 1-butyl-2-methyl-3-formylcyclopentano- and cyclohexano-4,5-pyrroles are oils which darken rapidly in air. The 1-ethyl-2-phenyl-3-formylcyclopentano- and cyclohexano-4, 5-pyrroles are crystals. It is established that the formyl group occupies the third position in the pyrrole cycle rather than the benzene ring.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310004-6"

Radar

USSR UDC 621.391.2

TERENT'YEV, A.S.

"Measuring the Parameters of a Pulse Signal in the Presence of Re-Reflections"

Moscow, Radiotekhnika i Elektronika, Vol XV, No 7, 1970, pp 1446-1456

Abstract: This article contains an investigation of the problem of estimating the complex amplitude and delay of a signal pulse in the presence of interfering (re-reflected) signals analogous to it with respect to shape and stationary noise. The sum re-reflected signal is considered as a nonstationary random process. The case of delayed re-reflections is analyzed in detail. The optimal linear filter is found the form of which is determined by the measured signal parameter and the ratio of the intensities of the re-reflections and noise.

In this paper the case where the re-reflections are nonstationary and delayed with respect to the basic signal is considered. The shape and the carrier frequency of the signal are considered given, and the relative Doppler shift is equal to zero. The measuring device is in the form of a system of linear

USSR

TERENT'YEV, A.S., Radiotekhnika i Elektronika, Vol XV, No 7, 1970, pp 1446-1456

filters and simple nonlinear converters of their output processes. With weak noise the problem reduces to determining the optimal weight functions of these filters, their characteristic properties and the properties of the optimal meter. Optimization minimizes the dispersion of the measurement error caused by re-reflections, in the presence of a zero regular error and with a given increase in the dispersion of the noise error by comparison with the minimum. The optimal filters and measurement quality depend on the distribution density of the mean intensity of the re-reflections. The integral equation defining the optimal filter is solved for its least favorable form. The results of the solution are used to determine the characteristics of the optimal estimates with different values of the minimum re-reflection delay and the properties of the optimal filters with a zero value of the delay.

It is pointed out that when measuring the parameters of the pulse signal, the measurement caused by the delayed re-reflections can be decreased as much as one might like by increasing the noise error. This is of interest in a number of cases where averaging the results of individual measurements by decreasing

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USSR

TERENT'YEV, A.S., Radiotekhnika i Elektronika, Vol XV, No 7, 1970, pp 1446-1456

the noise error leaves the error from re-reflection practically without change. The decrease in this error is achieved with least losses when measuring the time position of the signal pulse. The results are worse when measuring the amplitude and phase. With the least favorable distribution of the mean re-reflection intensity with zero minimum delay the optimal filters entering into the meter consist of a high-frequency filter and circuits for weighted summation of the signal envelope and its first derivative. The optimal passband of the high-frequency filter is broadened with an increase in the re-reflection intensity by comparison with the noise intensity. Its frequency characteristic is equalized within the limits of this band.

The corresponding measuring device retains its optimalness in practice even with a small finite minimum re-reflection delay.

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1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--QUANTITATIVE ESTIMATION OF QUALITY OF MEASURING DEVICES -U-

AUTHOR-(02)-SAKHAROV, A.P., TERENTYEV, D.I.

COUNTRY OF INFO--USSR

SOURCE--STANDARTY I KACHESTVO, 1970, NR 3, PP 26-28

DATE PUBLISHED-------70

SUBJECT AREAS--METHODS AND EQUIPMENT, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--QUALITY CONTROL, MEASUREMENT, ERROR ANALYSIS, SCIENTIFIC INSTRUMENT R AND D

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0080 STEP NO--UR/0422/70/000/003/0026/0028

CIRC ACCESSION NO--AP0111274

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0111274

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE INTRODUCES THE CONCEPTS OF OBJECTIVE AND SUBJECTIVE INDICES OF QUALITY AND THE CONCEPT OF AUALITY FUNCTION. METHODS FOR THEIR DETERMINATION ARE DESCRIBED. AN EXAMPLE IS GIVEN OF FINDING THE OBJECTIVE INDEX INCLUDING THE METROLOGICAL PREPERTIES OF THE MEASURING DEVICES, THEIR RELIABILITY, AS WELL AS THE TOTAL EXPENDITURE FOR THEIR DESIGN, PRODUCTION, AND OPERATION. THE CASES ARE INDICATED FOR ESTIMATION OF PRODUCT QUALITY ON THE BASIS OF OBJECTIVE OR SUBJECTIVE INDICES.

UNCLASSIFIED

USSR UDC 621.385.032.11 → 621.52

SOLOV'YEV, A.V., TERENT'YEV, G.G., BRUK, S.G., LYTKIN, YU. V., YEPIFANOV, V.N., RUDIN, G.A.

"On The Use Of Type 'NORD' Magnetodischarge Pumps For Evacuation Of Microwave Devices"

Elektron. tekhnika. Nauchno-tekhn. sb. Tekhnol. i organiz. proiz-va (Electronic Technology. Scientific-Technical Collection. Technology And Organization Of Production), 1970, Issue 5(37), pp 57-60 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A115)

Translation: Use of "NORD" magnetodischarge pumps with an evacuation rate of 25 and 100 l/sec in the production of microwave tubes makes it possible to increase the average useful life of the devices and the rate of output of suitable devices (by 5%) in comparison with that occuring with use of oil methods of evacuation. A unique vacuum system of evacuation stations is created with identical rectifier blocks, equal dimensions of vacuum ducts and arrangement of the manometer data units [датчик]. For stable operation of the magnetodischarge pumps of the types indicated, it is necessary at monthly intervals to degas them at a temperature of 300--350° C (the NORD-100 for 5 hours and the NORD-25 for 3--3.5 hours), and also reliably to guard against the entrance of oil from the forevacuum pump. 2 ill. 1 tab. 3 ref. G.B.

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USSR

UDC 669.245.018.44

DOLZHANSKIY, YU. M., MOISEYEV, V. N., SIBILEVA, L. I., and TERENT'YEV, L. N., All-Union Scientific Research Institute of Aviation Materials

"Investigation of the Statistical Principles of the Effect of Alloying Elements on the Mechanical Properties of Alloys in the Ti-Al-Mo-V System (Type VT16)"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy--Chernaya Metallurgiya, No 4, 1973, pp 132-137

Abstract: Studies were made to find the statistical principles for the relationship of the mechanical properties of type VT16 alloys in the annealed and thermally strengthened states to alloy content of Al, Mo, V for three basic forms of heat treatment: annealed, quenched and aged to a tensile strength (TS) greater than or equal to 105 kg/mm^2, and quenched and aged to a TS greater than or equal to 125 kg/mm^2. As the experiment plan, matrix PFE 23 was selected for the following levels of alloying element concentration changes: Al-1.0 and 3.0%, Mo-2.0 and 6.0%, and V-2.0 and 6.0%. Analysis of models for strength and ductility led to the following conclusions. For the manufacture of fasteners, operating under shear, it is recommended to use alloys of average composition: Al $\approx$ 2.0%, Mo $\approx$ 6.5%, and V $\approx$ 4.0% or Al $\approx$ 3.5%, Mo $\approx$ 5.0% and V $\approx$ 4.0%. It was established that these alloys, made from titanium sponge TG-100, ensure a shear strength $\approx$ 64 kg/mm^2 at a level of reduction in area greater than or

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USSR

DOLZHANSKIY, YU. M., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy--Chernaya Metallurgiya, No 4, 1973, pp 132-137

equal to 60%. For fasteners, operating in tension, it is recommended to employ alloys of an average composition: Al $\approx$ 2.5%, Mo $\approx$ 4.5%, and V $\approx$ 4.5%. An alloy with this composition will have a TS equal to or above 110 kg/mm^2 with a reduction in area value of $\approx$ 60% when heat treated as follows: annealed at 780°C for two hours + quenched from 820°C in water for two hours + aged at 570°C for eight hours. For force parts with mechanical properties at a level of TS $\geq$ 125 kg/mm^2 and reduction in area $\approx$ 55-58%, it is recommended to heat treat this alloy by quenching from 780°C for one hour in water + aging at 500°C for 16 hours. 3 figures, 2 tables.

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USSR

MURASHKO, A. G., SENCHENKO, N. I., TERENT'YEV, M. D.

"One Method of Formal Description of Analog Computer Structural Plans"

Analogovaya i Analogo-Tsifr. Vychisl. Tekhn. [Analog and Analog-Digital Computer Equipment -- Collection of Works], No 5, Moscow, Sov. Radio Press, 1973, pp 80-86 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V641, by the authors).

Translation: One method of formal description of structural plans for analog computers is studied. One version of the internal language of an analog computer is suggested and examples of the application of this language for the description of structural plans are studied.

USSR UDC: 681.3

MURASHKO, A. G., TERENT'YEV, M. F., GREBENNIK, L. A.

"On One Principle of Constructing Combination Computers"

V sb. Analogovaya i analogo-tsifr. vychisl. tekhn. (Analog and Analog--Digital Computer Technology--collection of works), vyp. 4, Moscow, "Sov. radio", 1971, pp 60-66 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V551)

Translation: This article considers formulation of the problem of constructing a computer system with controllable precision and speed. The structure of such a system is briefly described. Authors' abstract.

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1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--USE OF THE FADDEEV EQUATIONS TO CALCULATE ELECTRON SCATTERING LENGTH FOR HYDROGEN -U-

AUTHOR-(02)-TERENTYEV, M.V., KOTOVA, L.P.

CCUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1312-14

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON SCATTERING, HYDROGEN, CALCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/2044 STEP NO--UR/0020/70/190/006/1312/1314

CIRC ACCESSION NO--AT0112999

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0112999

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FADDEEV EQUATION (1960) USED FOR THE CALCN. OF ELECTRON SCATTERING OF H SHOWED THAT TRIPLET AND SINGLET SCATTERING ARE DIFFERENT. THE PHYS. CAUSE OF THIS DIFFERENCE WAS ASCRIBED TO THE LOWER 1ST APPROXN. IN A TRIPLET. THIS DOES NOT CONTAIN THE ELECTRON ELECTRON AMPLITUDE OF SCATTERING.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DESCRIPTION OF THE SPACE TIME PICTURE OF THE PRODUCTION AND DECAY OF UNSTABLE PARTICLES -U-

AUTHOR--IERENTYEV, M.V.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(5), 1099-1111

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--SPACE TIME, ELEMENTARY PARTICLE, PARTICLE PRODUCTION, RADIOACTIVE DECAY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0591 STEP NO--UR/0367/70/011/005/1099/1111

CIRC ACCESSION NO--AP0137676

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137676

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NONEXPONENTIAL CORRECTIONS TO THE DECAY LAW FOR UNSTABLE PARTICLES, THE APPEARANCE OF EFFECTS DUE TO THE DIMENSIONS OF THE WAVE PACKETS IN THE INTERFERENCE PICTURE FOR K SUB2 YIELDS 2 PI AND K SUB1 YIELDS 2 PI DECAYS, AND THE DESCRIPTION OF DECAYS OF THE STATES WITH INDEFINITE METRICS ARE GIVEN IN TERMS OF WAVE PACKET THEORY. FACILITY: INST. TEOR. EKSP. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR

BOGOMOL'NYY, YE. B., DOLGOV, A. D., ZAKHAROV, V. I., OKUN', L. B., and TERENT'YEV, M. V., Institute of Theoretical and Experimental Physics, State Committee on the Use of Atomic Energy

"On Possible Effects of CPT-Invariance Violation and $K_L \rightarrow 2\mu$ Decay"

Moscow, Yadernaya Fizika, Vol 15, No 5, May 72, pp 985-994

Abstract: An earlier article by the authors noted that the experimental data of A. L. CLARK, T. ELIOTT, R. C. FIELD et al. on $K_L \rightarrow 2\mu$ decay can be fitted to unitarity if it is assumed that there is a CPT-noninvariant interaction which makes a contribution to the $K_L \rightarrow 2\mu$ decay amplitude in the form

$$ibK_2\bar{\mu}\gamma_5\mu \qquad (1)$$

and partly compensates for the contribution of the two-photon intermediate

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BOGOMOL'NYY, YE. B., et al., Yadernaya Fizika, Vol 15, No 5, May 72, pp 985-994

state to the absorptive CPT-invariant part of the amplitude. If the absorptive part, which results from other real transitions, is ignored, there is no conflict with the CLARK et al. experiment if $b \simeq 0,5a \simeq 10^{-12}$. The present article gives a detailed discussion of properties of such an interaction and experimentally observed effects in which it might appear. Properties of the K^0_L, K^0_S system are considered, followed by a discussion of possible leptonic decays of K mesons with the participation of neutral currents and charged currents, nonleptonic decays, radiative decays, and muon decays.

The authors thank V. N. GRIBOV, B. L. IOFFE, and I. YU. KOBZAREV for interesting discussions.

2/2

1/2 008 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ADDITION OF DIAZOMETHANE TO BETA ETHYNYLPYRIDINES -U-

AUTHOR-(04)-TERENTYEV, P.B., MOSKVINA, T.P., MOSHENTSEVA, L.V., KOST, A.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (4), 498-502

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AZO COMPOUND, METHANE, PYRIDINE, MORPHOLINE, HETEROCYCLIC NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0932 STEP NO--UR/0409/70/000/004/0498/0502

CIRC ACCESSION NO--AP0134661

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134661

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO A SOLN. OF ETMGBR (FROM 4.8 G MG AND 32.6 G ETBR) IN 120 ML TETRAHYDROFURAN (THF) WAS ADDED, DURING 1 HR, SHOWN ON MICROFICHE.

FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--MASS SPECTRA OF PHENYLPYRIDINES -U-

AUTHOR-(05)-TERENTYEV, P.B., KHMELNITSKIY, R.A., KHROMOV, I.S., KOST, A.N., GLORIOZOV, I.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3) 606-10

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MASS SPECTRUM, BENZENE DERIVATIVE, PYRIDINE, AZO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1583 STEP NO--UR/0366/70/006/003/0606/0610

CIRC ACCESSION NO--AP0112577

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112577

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MASS SPECTRA WERE OBTAINED OF 2, 3, OR 4,PHENYLPYRIDINES, 2,METHYL,5,PHENYLPYRIDINE, AND 2,6,DIPHENYLPYRIDINE. THE POSSIBLE IONIC STRUCTURES OF LARGE IONIC FRAGMENTS WERE DEDUCED BY AN LCAO CALCN. METHOD. THE PYRIDINE RING ISOMERIZES, DURING MASS SPECTROSCOPY TO AZO PRISMANE OR AZOBENZOVALENE TRICYCLIC STRUCTURES.

UNCLASSIFIED

USSR

UDC 51:155.001.57:681.3.06

TERENT'YEV, S. N., KUTSENKO, V. M.

"One Pattern Recognition Algorithm"

Probl. Bioniki. Resp. Mezhved. Nauchno-tekhn. Sb. [Problems of Bionics, Republic Interdepartmental Scientific and Technical Collection], No 4, 1970, pp 80-82, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V650 by the authors).

Translation: The problem of construction of a pattern recognition algorithm on the basis of the statistical theory of recognition is studied. Assuming normal distribution and independence of individual recognition characteristics, an algorithm for two classes of objects is produced which can be run on a computer.

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USSR

UDC 547.539:547.241

YAKOBSON, G. G., FURIN, G. G., TERENT'EVA, T. V., Novosibirsk Institute of Organic Chemistry of the USSR Academy of Sciences, Siberian Branch, and the Novosibirsk State University

"Aromatic Fluorine Derivatives. LI. Preparation and Reactions of Polyfluoro Aromatic Difluorophosphines and Tetrafluorophosphoranes"

Leningrad, Russian, Zhurnal Organicheskoi Khimii, vol 9, No 8, Aug 73, pp 1707-1713

Abstract: A method was developed for making polyfluorodichlorophosphines by the reaction of polyfluoro aromatic compounds with PCl_3 in the presence of $AlCl_3$. Pentafluorophenyltetrafluorophosphorane was formed in the reaction of pentafluorophenylmagnesium bromide with PCl_5. Study of the action of nucleophilic agents on pentafluorophenyltetrafluorophosphoranes showed that nucleophilic displacement occurs at the P atom and the corresponding phosphinic salt is formed. Experimental data on the preparations and the properties of the compounds formed are listed.

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1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SPECTROPHOTOMETRIC DETERMINATION OF WATER IN ORGANIC COMPOUNDS BY MEANS OF COBALT CHLORIDE -U-

AUTHOR-(02)-TERENTYEV, V.A., STRELCHIK, B.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 382-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTROPHOTOMETRIC ANALYSIS, WATER, COBALT CHLORIDE, ORGANIC SOLVENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2069 STEP NO--UR/0075/70/025/002/0382/0384

CIRC ACCESSION NO--AP0125656

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125656

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SPECTROPHOTOMETRIC METHOD WAS DEVELOPED FOR THE QUANT. DETN. OF H SUB2 O IN ORG. COMPDS. BY USING COCL SUB2.6H SUB2 O. SPECTRA OF A 2PERCENT COCL SUB2.6H SUB2 O SOLN. IN ISO-PROH IN ITS MIXT. WITH H SUB2 O WERE STUDIED. IN A PURE ALC. THE SOLN. ACQUIRES A DEEP BLUE COLOR WITH AN ABSORBANCE MAX. AT 640 NM. THE INTENSITY OF THE COLOR DECREASES WITH H SUB2 O ADDN. AND AT LAST IT BECOMES PINK COLORED WITH AN ABSORBANCE MAX. AT 520 NM. THE MOLAR ABSORPTIVITY OF THE BLUE COMPD. IS 60 TIMES GREATER THAN OF THE PINK ONE. THE CALIBRATION CURVE PREPD. FROM THE ABSORBANCE AND CONCN. OF COCL SUB2.6H SUB2 O IN ISO-PROH IS A STRAIGHT LINE. WITH 2PERCENT ALC. COCL SUB2. 6H SUB2 O AT A RATIO SALT ANALYZED SOLN. OF 24:1, 0-100PERCENT H SUB2 O CAN BE DETD., WHILE WHEN THE RATIO SALT ANALYZED SOLN. IS 12:1 ONLY UP TO 60PERCENT H SUB2 O CAN BE DETD. CALIBRATION CURVES FOR H SUB2 O DETN. COMPLETELY MERGE FOR SOLVENTS, SUCH AS ALCS., ME SUB2 CO, ACOH AND THEIR MIXTS. FACILITY: SCI.-RES. INST. SYN. ALC., NOVOKUIBYSHEVSK, USSR.

UNCLASSIFIED

USSR

UDC 616.981.718-078.7-031:611.778

TERENT'YEV, V. F., and ZEYTLENOK, M. A., Voronezh Medical Institute

"Significance of the Intradermal Allergic Test With Soluble Antigen From Rickettsia burneti to Epidemiological Studies of Q Fever Foci"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 2, 1973, pp 70-74

Abstract: The toxicity and specificity of soluble Q fever antigen from Rickettsia burneti, when administered in the form of a skin allergy test, was compared with that of the CFR (complement-fixing reaction). Toxicity trials on 895 individuals proved that the skin test produced no undesirable local or general reactions. Tests on 60 individuals that had suffered Q fever 1.5 months to 5 years previously indicated that the skin test becomes more sensitive than CFR as the period after the illness increases. In general the skin test produced positive reactions among 50 of the 60 individuals while the CFR was positive in only 28 out of 56 cases. Specificity was determined by comparing results of skin tests on 150 patients with infectious illnesses other than Q fever with those on 237 residents of Voronezh, for which Q fever is not characteristic. The test was positive for only 4.0 percent of the patients and 3.4 percent of the residents. On the other hand tests on 697 individuals in areas for which Q-rickettsiosis is endemic were positive in 44.0 percent of the cases, while

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TERENT'YEV, V. F. and ZEYTLENOK, M. A., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 2, 1973, pp 70-74

the CFR was positive among 20.0 percent of 439 individuals. Finally a comparison of the sensitivity of the two tests at a meat-processing combine, where Q-rickettsiosis is highly possible, revealed that the skin test was 3 times more sensitive than the CFR. Thus the high specificity and sensitivity of the skin test, simplicity of administration and observation, absence of toxic reactions, and possibilities for employment in the field recommend this test for studies of Q-rickettsiosis foci and for diagnosis.

USSR

UDC: 539.385

TERENT'YEV, V.F., MAKHUTOV, N.A., POYDA, V.G. and SHCHERBAK, A.M., Institute of Metallurgy imeni A.A. Baykov, Academy of Sciences USSR

"Influence of Surface Layers and Aging on Bauschinger Effect During Low-Cycle Loading"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press, 1971, pp 41-48

Translation: This study concerns the influence of removing a grain-size thick surface layer (following the first half-cycle of loading) as well as intermediate aging at 270° C for 2 hours on the Bauschinger effect in low-carbon St.3 steel. It is shown that the Baushinger effect in low-carbon steel is largely due to the presence of a much stronger grain-size thick surface layer as well as surface residual stresses. Removal of the surface layer after the first half-cycle of loading (in the stretch region) or aging after the first half cycle minimizes the Bauschinger effect. In both cases the decrease in Baushinger effect is, most likely, related to the marked decrease in surface residual stresses. (6 illustrations, 18 bibliographic references; summary).

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USSR

UDC: 539.385

TERENT'YEV, V.F., ROSHCHIN, V.V. and MASLOV, L.I., Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR

"Cyclic Strength of Dissimilar Weld Joints of Low-Carbon Steel With 18-8-Type Stainless Steel"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press, 1971, pp 73-80

Translation: This study concerns the cyclic strength of specimens from weld joints of dissimilar metals involving 20 and Kh18N1VT steels. The tests were conducted by alternating pure bending at room temperature. The specimens were prepared by non-consumable electrode welding using two variants: 1) surfacing sv-10Kh16N25M6 filler wire on 20 steel; 2) surfacing Kh18l0NT steel and filling in the basic groove with sv-08G2S welding wire. The cyclic strength of the weld joints of dissimilar steels made with austenitic filler wire under 10^8 loading cycles was 18-19 kg/mm^2 which is 20% lower than the fatigue limit of the weakest component of the weld joint -- the 20 steel. The cyclic strength of a joint made with austenitic filler wire as welded is determined by the strength of the fusion area. (4 illustrations, 6 biblio. references; summary)

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USSR

UDC: 539.385

AGEYEV, N.V., PETROVA, L.A., TERENT'YEV, V.F., GRANKOVA, L.P. and KOZLOVSKAYA, T.M., Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR

"Effect of Structure on the Cyclic Strength of IVT1 Titanium Beta-Alloy"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press, 1971, pp 70-73

Translation: The cyclic strength of IVT1 titanium alloy (6.7% Mo, 4.99% Cr, 2.8% Fe, 3.1% Al) has been investigated under alternating loads following heat treatments under various conditions. The structure of the alloy was examined as a function of these conditions under both light and electron microscopes. The highest fatigue limit of 5.3 kg/mm^2 was exhibited by an alloy heat treated under the following specifications: hardening at 800C for 1 hr., water quenching, aging for 15 hrs. at 550C, and cooling in open air. The alloy treated under these conditions is characterized by homogeneous decay of the β-solid solution. (3 illustrations, 6 bibliographic references; summary).

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USSR

UDC: 539.385

IVANOVA, V.S., TERENT'YEV, V.F. and POYDA, V.G., Institute of Metallurgy imeni A.A. Baykov, Academy of Sciences USSR

"Community of Nature of Both Fatigue Limits and Physical Yield Points"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press, 1971, pp 15-23

Translation: Discussed is a hypothesis explaining the community of nature of both physical fatigue limits and physical yield points. To analyze the relation between these phenomena, use was made of the kinetics of changes in the yield area during the cyclic loading (repeated stretching at loading frequency of 2800 cycles/minute of flat specimens from St.3 steel. It is shown that cyclic loading, after a certain incubation period, results in the disappearance of the yield tooth and gradual elimination of the yield area on the static stretch curve. Based on the derived data, it is suggested that determination of the physical fatigue limit (by analogy with the

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IVANOVA, V. S., et al., "Community of Nature of Both Gatigue Limits and Physical Yield Points", Sb. "Ustalost' metallov i splavov", 1971, pp 15-23

physical yield point) is governed by the formation (during cyclic loading) of a hardened surface shell of the thickness of the grain. The fatigue limit conforms to a stress which fails to cause microcracks of critical length in the hardened surface layer. This shell serves as a barrier to the escape of dislocations from the inner layers of the metal and thus hinders the generation of irreversible damage. (4 illustrations, 33 bibliographic references; summary).

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USSR

UDC 621.785.53

TERENT'YEV, V. F., STEPANOV, V. N. and MASLOV, L. I., Institute of Metallurgy imeni A. A. Baykov

"Weld Joint Strength of Steels 20 and Kh18N10T at 20-500 C"

L'vov, Fiziko-Khimicheskaya Mekhanika Materialov, No 6, Nov-Dec 71, pp 11-15

Abstract: Purpose of this work was to study the static and cyclic strength of weld joints of steels 20 and Kh18N10T from 20 to 500°C. Samples were cut from the ends of tubes and argon-arc welded according to three variants: 1) surfacing on steel 20 with welding wire EP-267--first three layers; remaining layers -- welding wire Sv-04Kh19N11M3; 2) surfacing on steel 20 with welding wire Sv-10Kh16N25M6 (EI-395)--first three layers, remaining layers same as variant 1; 3) surfacing on steel Kh18N10T and filling the seam with welding wire Sv-08G2S. Tensile tests showed that, with temperature change, the location and type of failure of dissimilar steel welded joints changes and is associated with the phenomenon of strain aging of pearlitic low-carbon steel. Fatigue tests of the welded joints between 20° and 500° C showed that strain-hardening of the low-carbon steel also tends to shift the failure

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TERENT'YEV, V. F., et al, Fiziko-Khimicheskaya Mekhanika Materialov, No 6, Nov-Dec 71, pp 11-15

point to the austenitic steel at the blue brittleness temperature. The reinforcing structural heterogeneity of the austenitic and pearlitic at the melting interface at 500°C does not lower fatigue strength of a welded joint of steel 20 + Kh18N10T. 2 figures, 1 table, 6 bibliographical references.

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1/2 035 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--EFFECT OF THE EARLIER FLOW OF THE SURFACE LAYER ON THE STRENGTHENING AND BREAKDOWN OF METALS AND ALLOYS -U-

AUTHOR--IVANOVA, V.S., TERENTYEV, V.F.

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHIM. OBRAB. MATER. 1970, (1) 79-89

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METAL AGING, GRAIN SIZE, FATIGUE STRENGTH, STRAIN HARDENING, METAL HEAT TREATMENT, PLASTIC FLOW, METAL BRITTLENESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0634 STEP NO--UR/0472/70/000/001/0079/0089

CIRC ACCESSION NO--AP0105613

UNCLASSIFIED