

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--FORMATION OF COMPLEXES OF SCANDIUM WITH THIOCYANATE IONS IN AQUEOUS  
SOLUTIONS -U-  
AUTHOR--(04)-SAS, T.M., GAGARINA, V.A., KOMISSAROVA, L.N., GULIA, V.G.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1255-60  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--COMPLEX COMPOUND, SCANDIUM COMPOUND, THIOCYANATE,  
POTENTIOMETRIC TITRATION, SPECTROPHOTOMETRY, IONIC BONDING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/0741 STEP NO--UR/0078/70/015/005/1255/1260  
CIRC ACCESSION NO--AP0136180

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136180

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMATION OF SC(NCS) SUBN  
PRIME(3-N) POSITIVE IN AQ. SOLN. WAS STUDIED BY POTENTIOMETRY,  
SPECTROPHOTOMETRY, AND EXTN. (SC-NCS) PRIME2 POSITIVE IS THE MOST  
STABLE WITH STABILITY CONSTS. OF 0.54 AND 1.35 TIMES 10 PRIME NEGATIVE2  
AT IONIC STRENGTH 1 AND 0.1, RESP. FACILITY: MOSK. GOS. UNIV.  
IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--ZIRCONIUM AND HAFNIUM P,AMINOBENZOATES -U-  
AUTHOR-(03)-SHIRNOV, V.A., PROZOROVSKAYA, Z.N., KOMISSAROVA, L.N.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1266-70  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ZIRCONIUM COMPOUND, HAFNIUM COMPOUND, AMINE, BENZOIC ACID,  
CHEMICAL SYNTHESIS, THERMAL STABILITY, THERMAL ANALYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3007/0716 STEP NO--UR/0078/70/D15/005/1266/1270  
CIRC ACCESSION NO--AP0136155  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136155

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZRL SUB4 AND HFL SUB4, WHERE HL  
EQUALS P,AMINOBENZOIC ACID, WERE SYNTHESIZED AND THEIR THERMAL STABILITY  
WAS DETD. BY DTA AND THERMOGRAVIMETRY. A SCHEME IS PROPOSED FOR THEIR  
DECOMP. AND KINETIC PARAMETERS OF THE INITIAL STEP OF THE DECOMP. ARE  
GIVEN. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--THERMAL STABILITY OF HEXATHIOCYANATOSCANOATES OF THE ALKALI METALS  
-U-  
AUTHOR--(04)-GULIA, V.G., KOMISSAROVA, L.N., KRASNOYARSKAYA, A.A., SAS,  
T.M.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 966-71  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--THERMAL STABILITY, THIOL, DEHYDRATION, SCANDIUM COMPOUND,  
LITHIUM COMPOUND, SODIUM COMPOUND, POTASSIUM COMPOUND, CESIUM COMPOUND,  
RUBIDIUM COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3004/2034 STEP NO--UR/0078/70/015/004/0966/0971  
CIRC ACCESSION NO--AP0132291  
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132291

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STABILITY OF M SUB3 (SC(NCS) SUB6). NH SUB2 O (I) INCREASED WITH M IN THE ORDER: M EQUALS LI LESS THAN NA LESS THAN K LESS THAN RB LESS THAN CS. DEHYDRATION OF I (M EQUALS LI) WAS ACCOMPANIED BY DECOMPN. WHILE I (M EQUALS NA, CS, OR NH SUB4 PRIME POSITIVE) FORMED ANHYD. COMPLEXES. DTA DIAGRAMS OF THE COMPLEXES AND THEIR THERMAL DECOMPN. SCHEMES ARE GIVEN. SC SUB2 O SUB3 AND M SUB2 SO SUB4 ARE THE FINAL DECOMPN. PRODUCTS OBTAINED. FACILITY: MOSK. GOS. UNIV. IN. LOMONOSIVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--NEW PHASES IN A SCANDIUM TITANIUM OXYGEN SYSTEM -U-  
AUTHOR-(03)-MIKHAYLOV, YU.YA., KOMISSAROVA, L.N., POKROVSKIY, B.I.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKADE. NAUK SSSR 1970, 190(5), 1117-20  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--X RAY ANALYSIS, CRYSTAL LATTICE STRUCTURE, SCANDIUM, TITANIUM,  
OXYGEN, PHASE ANALYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1998/2065 STEP NO--UR/0020/70/190/005/1117/1120  
CIRC ACCESSION NO--AT0122294  
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0122294

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PART OF THE SC TI O SYSTEM WAS STUDIED BY X RAY PHASE ANAL., AND MORE ACCURATE DATA WERE OBTAINED ON THE COMPN. OF THE COMPOS. FOUND EARLIER (IBID, 1966, 168, 1076). THE COMPN. IS GIVEN BY THE FORMULA SC SUB2 TI O SUB5, AND ITS INDUCED X RAY DIFFRACTION DIAGRAM AND THE CELL PARAMETERS ARE GIVEN. THE PHASE EQUIL. WERE STUDIED AT 1250 AND 1500DEGREES. IN THE REGION RICH IN TI, (SC SUB1MINUSX TI SUBX)TI O SUB5, WHICH IS ISOSTRUCTURAL WITH SC SUB2 TI O SUB5, IS FORMED. IT IS MONOCLINIC WITH BETA IS CONGRUENT TO 90DEGREES. AS THE SC CONCN. IS INCREASED BETA APPROACHES 90DEGREES MORE CLOSELY, AND FOR X EQUALS 0.82-0.83 BETA EQUALS 90DEGREES. AT 1250DEGREES THE REGION OF HOMOGENEITY OF THIS PHASE OCCURS AT X EQUALS 0.94-0.18, BUT AT 1500DEGREES IT NARROWS TO X EQUALS 0.94-0.63. A NO. OF NEW PHASES WERE FOUND IN THE SYSTEM, AND THEIR LATTICE PARAMETERS AND REGION OF EXISTANCE ARE TABULATED. SC BEHAVES LIKE AL AND FE. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED



1/2 027  
UNCLASSIFIED  
TITLE--HAFNIUM DIOXIDE, ERBIUM SESQUIOXIDE SYSTEM -U- PROCESSING DATE--20NOV70  
AUTHOR--(02)-SPIRIDONOV, F.M., KOMISSAROVA, L.N.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 875-8  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--X RAY ANALYSIS, THERMAL ANALYSIS, PHASE DIAGRAM, CRYSTAL  
STRUCTURE, SOLID SOLUTION, HAFNIUM OXIDE, ERBIUM COMPOUND  
CNTRL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1994/1724  
STEP NO--UR/0078/70/015/003/0875/0878  
CIRC ACCESSION NO--AP0115553  
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0115553

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTERACTIONS IN HFO SUB2-ER SUB2 O SUB3 SYSTEM WERE STUDIED BY THERMAL AND X RAY PHASE ANAL.; THE PHASE DIAGRAM OF THE SYSTEM WAS CCNSTRUCTED. WIDE FIELDS OF CUBIC SOLID SOLNS. OF THE SYSTEM ARE SEPD. BY A NARROW REGION OF IMMISCIBILITY. HEXAGONAL ER SUB6 HFO SUB11, WHICH EXISTS AT SMALLER THAN 1700DEGREES, TRANSFORMS TO A SOLID SOLN. OF A CUBIC STRUCTURE AT HIGHER TEMPS. THIS TRANSITION IS OF THE ORDER DISORDER TYPE.

UNCLASSIFIED

USSR

UDC 539.3:4. (1)

VOLKOV, S. D., GIRS, V. N., DENISOV, Yu. V., KLINSKIKH, N. A.,  
and KOMISSAROVA, M. L., Sverdlovsk, Ural Polytechnic Institute  
imeni S. M. Kirov

"On Methods of Solving Problems of Thermoelasticity"

Kiev, Problemy Prochnosti, No 5, May 73, pp 3-8

Abstract: The previously by one of the authors suggested new method of applying Green's functions of Laplace equation for derivation of universal algorithms for isothermic problems, which was propagated to problems of thermoelasticity (Ibid.; Volkov, S. D., et al., No 2, 1972), presented the solution by a series of quadratures the convergence of which was demonstrated on an example with already known solution. Some results of a further development of this method are reported. It is demonstrated that by known Green's function of Laplace equation of a given domain, the reduction to a series of quadratures can be applied to the solution of a disconnected boundary problem of

1/2

USSR

VOLKOV, S. D., et al., Problemy Prochnosti, No 5, May 73, pp 3-8

thermoelasticity of homogeneous isotropic bodies. General conditions of the uniform convergence of this series are determined. The distribution of stresses in an infinite circular cylinder loaded with radial forces in an asymmetric and non-standard temperature field was determined. Twenty six formulas, four bibliographic references.

2/2

- 101 -

USSR

UDC 547.241

KOMISSAROVA, S. I., VALETDINOV, R. K., and KUZNETSOV, Ye. V., Kazan',  
Chemical-Technological Institute imeni S. M. Kirov

"Reaction of Alkyldi(hydroxymethyl) phosphines With Acrylonitrile"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, pp 322-324

Abstract: The reaction of alkyldi(hydroxymethyl) phosphines with acrylonitrile leads to the formation of alkylbis( $\beta$ -cyanoethyl)phosphines provided that the reaction temperature is kept below +20°C. A sample of 10.6 g of acrylonitrile inhibited with hydroquinone was added dropwise to 10.8 g methyldi(hydroxymethyl)phosphine under nitrogen, with stirring, keeping the reaction-mixture temperature below +20°C. After the completion of addition the reaction mixture was subjected to a vacuum and the product was distilled under vacuum. The reaction was not possible with methacrylonitrile even with heating.

1/1

USSR

UDC 547.26'118

PUDOVIK, A. N., KONOVALOVA, I. V., KAKURINA, V. P., BURNAYEVA, L. A.,  
and KOMISSAROVA, T. A.

"Reactions of Dialkylphosphorous Acid Monoisocyanates With Esters of  
Benzoylformic and  $\alpha$ ,  $\beta$  -Diketobutyric Acids and Phenylglyoxal"

Leningrad, Zhurnal Obshchey Khimii, Vol 43(105), No 2, Feb 73, pp 256-260

Abstract: Monoisocyanates of dialkylphosphorous acids react with esters of pyruvic, benzoylformic, and  $\alpha$ ,  $\beta$ -diketobutyric acids and phenylglyoxal in methylene chloride at  $-5^{\circ}$  to  $0^{\circ}$  yielding 2-alkoxy-2-oxo-3-alkyl-5-substituted 2-phosphaoxazolidin-4-ones, dense liquids soluble in organic solvents, insoluble in water, and isocyanates of dialkylphosphoric acids in 15% yield. The reaction mechanism was studied by IR and NMR spectroscopic methods.

1/1

- 29 -

USSR

UDC 535.853.4:535.421

KOMISSARUK, V. A., YANICHKIN, V. I.

"Diffraction Interferometer with Arbitrary Band Direction"

Optiko-mekhanicheskaya Promyshlennost', No 11, Nov 72, pp 29-32.

Abstract: A grid-type interferometer containing an additional astigmatic optical system in the collimator is studied. The additional system allows the interference bands to be oriented arbitrarily in relationship to the movement of the wave surfaces. When the bands are parallel to the movement, they are practically achromatic. An astigmatic system consisting, for example, of a plano-convex spherical and a plano-concave cylindrical lens allows the pair of grids used in ordinary diffraction interferometer to be used in the device.

1/1

032

UNCLASSIFIED

PROCESSING DATE--20NOV70  
AUTHOR--(02)--KGMISSARUK, V.A., YANICHKIN, V.I.

K

TITLE--POLARIZATION SHIFT INTERFEROMETER WITH RANDOM BAND DIRECTION -U-  
AUTHOR--(02)--KGMISSARUK, V.A., YANICHKIN, V.I.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, OPTIKO MEKHANICHESKAYA PROMYSHLENNOST', NO 1, 1970, PP  
29-31  
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--INTERFEROMETER, LIGHT SOURCE, COHERENT LIGHT, LIGHT  
POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1999/1344

CIRC ACCESSION NO--AP0123302

STEP NO--UR/0237/70/000/001/0029/0031

UNCLASSIFIED



2/2 032

CIRC ACCESSION NO--AP0123302

UNCLASSIFIED

PROCESSING DATE--20NOV70

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

ABSTRACT. A SHIFT INTERFEROMETER IS

DESCRIBED IN WHICH COHERENT LIGHT SOURCES ARE FORMED WITH THE AID OF TWO  
WOLLASTON PRISMS DEVELOPED WITH RESPECT TO EACH OTHER AT 50DEGREES. THE  
BANDS IN THIS INTERFEROMETER CAN BE ORIENTED ARBITRARILY WITH RESPECT TO  
THE SHIFT. AN INTERFEROGRAM IS GIVEN.

UNCLASSIFIED

USSR

UDC 621.396.67.095.1

RIMSHA, V. A., SERGEYEV, B. G., KOMKOV, A. S.

"A Method of Forming Sum-and-Difference Diagrams on Higher Wave Modes"

Moscow; Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,  
No 5, Feb 72, Author's Certificate No 327547, Division H, filed 19 May 69,  
published 26 Jan 72, p 156

Translation: This Author's Certificate introduces a method of forming sum-and-difference diagrams on higher wave modes in a single-horn monopulse radiator. As a distinguishing feature of the patent, the method provides for direction finding and automatically tracking a signal source with arbitrary polarization. In the aperture of the radiator a superposition is excited from each difference channel in the form of two orthogonal fields displaced in phase by  $\pi/2$  and having a zero in the plane of the orthogonal channel.

1/1

- 13 -

AND0017114

4R9020

TITLE-- SCIENCE-INDUSTRY ALLIANCE

NEWSPAPER-- SOVetskaya Litva, JANUARY 27, 1970, P 1, COLS 1-2

ABSTRACT-- ASSOCIATES OF THE KLAYPEDA NIGHT SCHOOL OF THE KAUNAS  
POLYTECHNIC INSTITUTE, HEADED BY CANDIDATE OF TECHNICAL SCIENCES  
E. LANGAS, JOINED V. KHALTUSHIN, CHIEF ENGINEER, N. KOMKOV, CHIEF  
WELDING ENGINEER, AND V. BELSKIS, SENIOR SUPERINTENDENT OF THE  
EXPERIMENTAL SECTION OF THE SHIPBUILDING PLANT "BALTIYA", IN  
DEVELOPING A NEW WELDER FOR THE PLANT.

19600321

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USSR

UDC 621.313.12+536.46

KOMKOV, S. M., NOSACH, V. G.

"Calculation of the Optimal Parameters of a Combustion Chamber"

Teplofiz. i teplotekhnika. Resp. mezhved. sb. (Heat Physics and Engineering. Republic Interdepartmental Collection), 1972, No. 21, pp 106-108 (from RZh - 34. Aviatsionnyye i raketnyye dvigateli, No 9, Sep 72, Abstract No 9.34.160)

Translation: Initial data are presented on the results of an optimal calculation of an MHD generator in calculating the optimal parameters of the combustion chamber of the MHD generator for a cycle with chemical regeneration. The method of equivalent problems is applied, making it possible to carry out further optimization depending on the proposed problem. 3 ill., 6 ref. Resume.

1/1

USSR

UDC: 621.318.56.004.5

KOMKOV, V. A. and KOSTRYUKOV, S. I. [Leningrad Production Combine  
"Krasnaya Zarya"]

"Device for Testing Relays in Service"

Avt. sv SSSR, kl H 01 h 47/00, No 331436, zayavl. 7.12.70, opubl.  
1.06.72 (Author's Certificate, USSR, class H 01 h 47/00, No 331436,  
claimed 7 December 1970, published 1 June 1972) (from RZh--  
Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 2, 1973,  
Abstract No 2A481P)

Translation: A device is proposed for testing relays while they are  
in service, containing a pulse oscillator for switching the relay,  
a delay circuit, a power supply, amplifiers connected to the con-  
tacts, discriminators, triggers for remembering rejects, indica-  
tors, and logic circuits. One illustration

1/1

- 7 -

USSR

Thorium and Uranium

UDC 546.799:541.5

KOMKOV, YU. A., KROT, N. N., and GEL'MAN, A. D.

"Heptavalent State of Transuranium Elements. XI. Reaction of Plutonium (VII) With Some Reducing Agents in Alkaline Solutions"

Leningrad, Radiokhimiya, Vol 12, No 5, 1970, pp 692-697

Abstract: The kinetics of plutonium (VII) reduction in 0.5-4 M KOH by means of iodide and iodate ions was studied spectrophotometrically. The effect of various factors on the rate of these reactions was studied and a possible mechanism for them was proposed. Semiquantitative studies of other reducing agents made it possible to classify them according to their reaction rate. The first group covered the most active reducing agents, including iodides, iodates, hydrogen, ferrocyanide, hydrazine and hydroxylamine peroxides, ascorbic acid, tin (II), and formate and sulfite ions. In the intermediate group the following were included: methanol, ethanol, formaldehyde, and thio-sulfate ions. The compounds which react with plutonium more slowly than water reacts comprised the third group and included the nitrile, acetate; and oxalate ions.

1/1

USSR

UDC 547.26'118

NIFANT'YEV, E. Ye., KOMLEV, I. V., KONYAYEVA, I. P., ZAVALISHINA, A. I., and  
TUL'CHINSKIY, V. M.

"Reactions of Hypodiphosphites with Acid Chlorides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2368-2373

Abstract: The reaction of neutral hypodiphosphites with halides of carboxylic  
acids proceeded according to  $R-\begin{smallmatrix} \diagup O \diagdown \\ \diagdown O \diagup \end{smallmatrix}-P-P-\begin{smallmatrix} \diagup O \diagdown \\ \diagdown O \diagup \end{smallmatrix}-R + R'COX \rightarrow R-\begin{smallmatrix} \diagup O \diagdown \\ \diagdown O \diagup \end{smallmatrix}-PG(=O)R' +$

$R-\begin{smallmatrix} \diagup O \diagdown \\ \diagdown O \diagup \end{smallmatrix}-PX$  /R = C<sub>6</sub>H<sub>4</sub>, CH<sub>2</sub>CH(CH<sub>3</sub>)CH<sub>2</sub>; R' = Me, Ph; X = Cl, Br/. Upon the reaction  
of hypodiphosphites with benzylsulfonyl chloride PhCH<sub>2</sub>SOCl, benzyl thiol esters

$R-\begin{smallmatrix} \diagup O \diagdown \\ \diagdown O \diagup \end{smallmatrix}-PSCH_2Ph$  of alkylenephosphorous acids /e.g., R = CH<sub>2</sub>CH(CH<sub>3</sub>)CH<sub>2</sub>/ and

chlorophosphites  $R-\begin{smallmatrix} \diagup O \diagdown \\ \diagdown O \diagup \end{smallmatrix}-PCl$  were obtained. By reacting the hypodiphosphites  
with chlorophosphites or chlorophosphines, unsymmetric structures connected  
over a P-P group were synthesized.  
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USSR

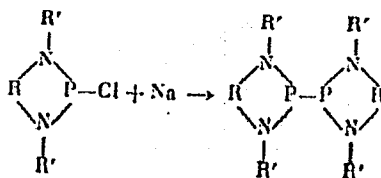
UDC 547.26'118

KOMLEV, I. V., ZAVALISHINA, A. I., CHERNIKEVICH, I. P., PREDVODITELEV, D. A.,  
and NIFANT'YEV, E. YE., Moscow State University imeni M. V. Lomonosov

"Amides of Hypodiphosphorous Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 4, 1972, pp 802-807

Abstract: Metallic sodium was reacted with cyclic amidoacyl chlorides to form the amides and esteramides of the hypodiphosphorous acid as given in the following formula:



The anhydride reactant can be prepared by treating alkylenediamines with  $\text{PCl}_3$  in the presence of triethylamine. The structure was confirmed by the NMR spectra of  $\text{P}^{31}$  and the IR spectra, especially the intense absorption in the region corresponding to the energy of the N-P vibration. The P-P bond is



USSR

UDC 547.26'118

IVANOVA, N. L., ZAVALISHINA, A. I., FURSENKO, I. V., NASONOVSKIY, I. S., KONYA-  
YEVA, I. P., KOMLEV, I. V., NIFANT'YEV, E. YE.

"Chromatography of Organic Compounds of Trivalent Phosphorus in a Thin Sorbent Layer. II"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 91-93

Abstract: Some acids of phosphorus and their esters can be identified by the method of thin layer chromatography, but the chromatograms of such substances are not always sufficiently clear and the method of thin layer chromatography was not successful heretofore for analysis of the amides and other important types of derivatives of the acids of trivalent phosphorus [E. Ye. Nifant'yev, ZhOKh, No 35, 1980, 1965]. Here, a more detailed study has been made of the conditions of thin-layer chromatography of some of the most useful types of substances of this class. As a rule, aluminum oxide of second degree Brockman activity was used as the sorbent, but silica gel, polyvinyl alcohol and chlorated polyethylenes were also investigated. They gave worse results. The presented method of thin layer chromatography proved to be useful for analysis of medium and acid phosphites, thiophosphites, amides of phosphoric acid and amidophosphites and esters of hypodiphosphoric acid.

1/1

- 38 -

1/2 030 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--COATING STABLE IN NONFERROUS METAL MELTS -U-  
AUTHOR--(03)--KAGANOV, I.R., SYCHEV, M.M., KOMLEV, V.G.  
COUNTRY OF INFO--USSR  
SOURCE--LITEINOE PROIZVOD. 1970, (1) 24  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--METAL COATING, ZINC, LIQUID METAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1986/0129 STEP NO--UR/0123/70/000/001/0024/0024  
CIRC ACCESSION NO--AP0102217  
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--AP0102217

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COATINGS CHEM. STABLE AND NOT  
WETTED BY MOLTEN ZN AND AL WERE BASED ON A MIXT. OF H SUB3 PO SUB4: H  
SUB2 O: HYDRATED AL SUB2 O SUB3: :2.1:2.3:1 WHICH WAS BOILED FOR 7 TO  
12 MIN (38 TO 44PERCENT H SUB2 O) THEN MIXED 1:1 WITH CR BORIDE AS  
FILLER FOR CHEM. RESISTANCE AND COEFF. OF EXPANSION CONTROL. THE FE  
SURFACE TO BE COATED WAS REOXIDIZED AT 900DEGREES, TO GIVE BETTER  
ADHESION, THE THERMAL TREATMENT OF THE COATING BEING CONTROLLED TO GIVE  
GOOD RESULTS.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--DETERMINATION OF THE CONTENT OF SOME AUXILIARY SUBSTANCES IN  
SUSPENSION POLY VINYL CHLORIDE -U-  
AUTHOR-(05)-PEREPLETCHIKOVA, YE.M., KALININ, A.I., KOMLEVA, V.N.,  
LUNICHEVA, E.V., ZILBERMAN, YE.N.  
COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (3), 48-51

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYVINYL CHLORIDE, CHEMICAL SUSPENSION, CHROMATOGRAPHY,  
POLAROGRAPHIC ANALYSIS, COLLOID, LEAD, CADMIUM, BARIUM, CALCIUM, ION,  
CHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1999/1802

STEP NO--UR/0191/70/000/003/0048/0051

CIRC ACCESSION NO--AP0123599

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 023

CIRC ACCESSION NO--AP0123599

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

ABSTRACT. THE QUANT. EXTN. OF RESIDUAL INITIATORS (E.G., BZ SUB2 O SUB2, AZOBISISOBUTYRONITRILE, LAUROYL PEROXIDE, ETC.) FROM SUSPENSION POLY (VINYL CHLORIDE) (I) AND THE DETN. OF INITIATORS BY GAS, LIQ. CHROMATOG. AND POLAROGRAPHY WERE DESCRIBED. QUAL. CHEM. REACTIONS WERE USED TO IDENTIFY PROTECTIVE COLLOIDS IN AQ. EXTS. OF I. PB PRIME2 POSITIVE, CD PRIME2 POSITIVE, BA PRIME2 POSITIVE, AND CA PRIME2 POSITIVE WERE DETD. BY EMISSION SPECTROSCOPY, POLAROGRAPHY, AND QUAL. ANAL., WHEREAS THE CONTENT OF CIS,9,OCTADECENE,1,OL WAS DETD. BY GAS LIQ. CHROMATOG.

UNCLASSIFIED

AA0046402- KOMLYAKOV VA UR 0482

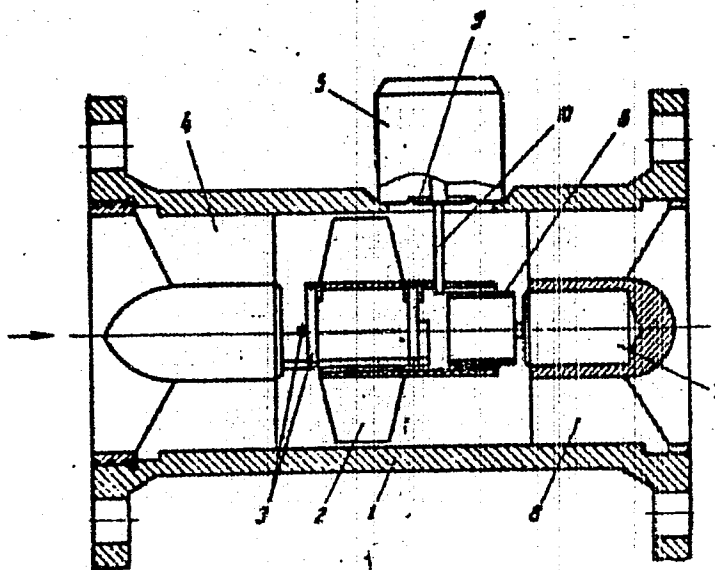
Soviet Inventions Illustrated, Section II Electrical, Derwent,

241727 TURBINE FLOWMETER contains housing (1), turbine (2), elastic brackets (3), flow directing part (4), electro-pneumatic transformer (5), ring (6), synchronous motor (7), back flow directing part (8), diaphragm (9), and arm (10). The ring (6) is made from the material with a large coefficient of thermal expansion. With the increase of temperature it reduced the gap between the ring and the hub of the turbine to compensate for the change in viscosity and density of fluid.

17.1.68 as 1210257/18-10.V.P.SUVOROV et al.THERMAL POWER ENG.RES.INST. (25.8.69) Bul 14/18.4.69. Class 42e. Int.Cl.G Olf.

19781596

AA0046402



2/8

MIT

19781597

AA0046402

AUTHORS: Suvorov, V. P.; Komarovskiy, V. A.; Komlyakov, V. A.; Kornaukhova, N. N.

Gosudarstvennyy Nauchno - Issledovatel'skiy Institut Teploenergeticheskogo  
Priborostroeniya

19781598



1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--CORRELATION BETWEEN THE FIELD AT THE START OF BARKHAUSEN  
DISCONTINUITIES AND THE CRITICAL FIELD OF POLARIZATION AND  
AUTHOR--(02)--KHARITONOV, YU.N., KOMLYAKOVA, N.S.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(3), 130-1  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--ELECTRIC POLARIZATION, FERROELECTRIC CRYSTAL, ELECTRIC FIELD,  
BARIUM TITANATE, GLYCINE, SULFATE, SINGLE CRYSTAL PROPERTY  
CCNTRGL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1214 STEP NO--UR/0139/70/013/003/0130/0131  
CIRC ACCESSION NO--AP0124868  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 020

CIRC ACCESSION NO--AP0124868

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCES OF THE FIELD, E  
SUBST, OF THE START OF BARKHUSEN DISCONTINUITIES ON THE CRIT. FIELD, E  
SUBCR, OF POLARIZATION AND REPOLARIZATION WAS STUDIED WITH SINGLE  
CRYSTALS OF ROCHELLE SALT, TRIGLYCINE SULFATE, AND JFA TITANATE. FOR  
ROCHELLE SALT, E SUBCR INCREASED LINEARLY WITH E SUBST IN BOTH  
POLARIZATION AND REPOLARIZATION. FACILITY: ABAKAN. GOSPEDINST.,  
ABAKAN, USSR.

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--BARKHAUSEN EFFECT IN FERROELECTRICS DURING CONTINUOUS X RAY  
IRRADIATION -U-  
AUTHOR--(02)-KOMLYAKOVA, N.S., KHARITONOV, YU.N.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 158-60  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--X RAY IRRADIATION, FERROELECTRIC PROPERTY, FERROELECTRIC  
EFFECT, SULFATE, GLYCINE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1997/1405 STEP NO--UR/0139/70/013/002/0158/0160  
CIRC ACCESSION NO--AT0120198  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0120198

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE DOSE OF CONTINUOUS IRRADIATION OF SEIGNETTE'S SALT AND TRIGLYCINE SULFATE ON THE TOTAL NO. OF JUMPS WAS STUDIED. THE MECHANISM OF THE MODIFICATION OF THE DOMAIN STRUCTURE IS DISCUSSED. THE ROLE OF MICRODEFECTS IS EMPHASIZED.

FACILITY: ABAKAN. PEDINST., ABAKAN, USSR.

UNCLASSIFIED

USSR

"Vitamin C in a New Role"

Yerevan, Kommunist, 8 Jan 71, p 4

Translation: Vitamin C was thoroughly studied a long time ago. Several articles have described its benefits. It has now become the doctor's ally in treating rheumatic illnesses.

Candidate of Medical Sciences Lyudmila Lukashchuk, a rheumatic fever specialist at the outpatient division of the 64th Moscow Clinical Hospital, has attempted to use Vitamin C (ascorbic acid) in treating rheumatic patients. In support of this she cited the fact that those with an active phase of rheumatic fever have the vitamin C content of their blood and urine cut almost in half. While the normal figure is 0.79 mg % in the blood and 0.74 mg per hour in the urine, for those suffering from this disease the figures are 0.42 mg % and 0.35 mg/hr.

Lyudmila Lukashchuk is trying to select the most successful combination of doses of ascorbic acid and medicine. In order to find the optimal solution, 214 people suffering from rheumatic fever have been treated as outpatients

1/3

- 99 -

USSR

Kommunist, 8 Jan 71, p 4

for a month and a half. The level of vitamin C in their blood and urine was studied three times during this period; after 7 days, after 14 days, and at the end of the treatment. Among all patients there has been only a minimum degree of rheumatic activity.

The patients were divided into four groups, depending on the method of treatment. The first group received only ascorbic acid and no other medicine. The second received antibiotics once a week, aspirin every day, and ascorbic acid. The third received quinoline preparation and vitamin C. The fourth group was given no ascorbic acid at all.

By the first week the vitamin C content of the blood and urine of the majority of those in the first three groups had risen almost to normal. This occurred most rapidly in the first group, where the patients were given only ascorbic acid.

It is known that salicylates, and in particular aspirin, lower the vitamin C levels in the organism. It now turns out that quinoline treatments have

2/3

USSR

Kommunist, 8 Jan 71, p 4

the same effect on vitamin C levels and what is more, their effect is even more intense. This means that such medicines can be effective only if they are given in conjunction with increased doses of vitamin C.

How do the patients feel? There were clinical improvements in the health of the members of the second and third groups only. These are the groups in which medical treatment and the beneficial effects of ascorbic acid were combined. Only a few persons in the fourth group, which did not receive any ascorbic acid at all, showed any clinical improvement.

Vitamin C justified the doctor's hopes. A daily dose of 3-4 grams makes it possible for the patient to deal with the onset of illness more rapidly. The effects of such treatment are long lasting; there were no repeated attacks within the usual period. In addition, the patient is less susceptible to catarrh of the upper respiratory system, influenza, and angina.

3/3

USSR

UDC: 537.312.62

KOMNIK, Yu. F.

"Superconductivity of Thin Films. I. Critical Temperature"

[Tr.] Fiz.-tekhn. in-t nizk. temperatur AN USSR ([Works] of the Physico-technical Institute of Low Temperatures of the Academy of Sciences of the Ukrainian SSR), 1971, vyp. 16, p 3-28 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract No 8D467)

Translation: A survey of the principal publications dealing with the study of critical temperatures of superconductive transition of thin metal films. Various reasons for deviation of the critical temperature of films from the values for massive metals are discussed, viz.: the development of new modifications in films, the effect of impurities absorbed during condensation of the films, development of stresses due to differences in the compression of metal and substrate during cooling, the presence of oxides and dielectric layers on the surface. Experimentally observed relations between the critical temperature and film thickness, size of crystallites, the degree of equilibrium of the crystal structure and changes in the phonon spectrum are discussed in detail. Ten illustrations, bibliography of 141 titles. Author's abstract.

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USSR

UDC: 537.312.62

KOMNIK, Yu. F.

"Superconductivity of Thin Films. II. Critical Magnetic Fields"

[Tr.] Fiz.-tekhn. in-t nizk. temperatur AN USSR ([Works] of the Physico-technical Institute of Low Temperatures of the Academy of Sciences of the Ukrainian SSR), 1971, vyp. 16, pp 29-41 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract No 8D468)

Translation: A survey of principal publications dealing with investigation of parallel critical magnetic fields in thin superconducting films. The particulars of variation in critical fields with a reduction in film thickness and increase in structural disarrangement are discussed together with the explanation of these particulars on different stages of development of theory. Ten illustrations, bibliography of 38 titles. For part I see Abstract 8D467. Author's abstract.

1/1

- 110 -

1/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--MAGNETORESISTANCE OF BISMUTH THIN FILMS IN A PARALLEL MAGNETIC  
FIELD -U-  
AUTHOR--(02)-ANDRIYEVSKIY, V.V., KOMNIK, YU.F.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1582-4  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--BISMUTH, MAGNETIC FIELD, MAGNETORESISTANCE, VACUUM  
DISTILLATION, METAL VAPOR DEPOSITION, METAL FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3005/0958

STEP NO--UR/0181770/012/005/1582/1584

CIRC ACCESSION NO--AP0133044

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133044

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION WAS CARRIED OUT OF  
MAGNETORESISTANCE IN A PARALLEL FIELD IN BI FILMS IN WHICH A QUANTUM  
SIZE EFFECT IS OBSO. BI FILMS WERE PREPD. BY CONDENSATION IN VACUUM ON  
A FRESH CLEAVAGE OF MICA AND WERE ORIENTED ALONG THE TRIGONAL AXIS  
(111). FOR SOME SPECIMENTS, IN THE FIELD DEPENDENCE OF  
MAGNETORESISTANCE THERE ARE 2 OSCILLATIONS OF SMALL AMPLITUDE; THEIR  
PERIODS DECREASE WITH INCREASING FIELD. FACILITY: FIZ.-TEKH.  
INST. NIZKIKH TEMP., KHARKOV, USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--TEMPERATURE FUNCTION OF THE CONDUCTIVITY QUANTUM OSCILLATION  
AMPLITUDE OF ANTIMONY THIN FILMS -U-  
AUTHOR--KOMNIK, YU.F., BUKHSHTAB, YE.I., NIKITIN, YU.V.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TVERD. TELA 1970, 12(3) 793-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--METAL FILM, ANTIMONY, METAL VAPOR DEPOSITION, ELECTRIC  
RESISTANCE, QUANTUM OSCILLATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1988/0658 STEP NO--UR/0181/70/012/003/0793/0798  
CIRC ACCESSION NO--AP0105637  
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105637

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELEC. RESISTANCE WAS INVESTIGATED IN THIN (IS SIMILAR TO 300 ANGSTROM) POLYCRYST. FILMS OF SB IN A BROAD RANGE OF TEMPS. (4.2-350DEGREESK). THE FILMS WERE OBTAINED BY VACUUM DEPOSITION IS SIMILAR TO 10 PRIME NEGATIVE6 TORR ON GLASS SUBSTRATES. THE DEPENDENCE OF THE FILM RESISTANCE ON THICKNESS IS OSCILLATORY. THE PERIOD OF THE OSCILLATIONS DOES NOT CHANGE WITH TEMP. AND IS SIMILAR TO 25 ANGSTROM. THE AMPLITUDE OF THE OSCILLATIONS DECREASES WITH INCREASING TEMP. ACCORDING TO  $T \exp(2\pi \text{ PRIME}^2 \text{ KT} - \Delta \text{ EPSILON SUBF})$ , WHERE  $\Delta \text{ EPSILON SUBF}$  IS THE SPLITTING OF SUBBANDS CLOSE TO THE FERMI LEVEL AS A RESULT OF SPACE QUANTIZATION. THE VALUES OF  $\Delta \text{ EPSILON SUBF}$  WERE DETD. FOR FILMS OF VARIOUS THICKNESSES. THESE VALUES COINCIDE WITH THE EVALUATIONS OBTAINED FROM KNOWN DATA ON THE BAND STRUCTURE OF SB. THE EFFECT OF THE RELAXATION BROADENING OF THE SUBLEVEL EDGES ON THE AMPLITUDE OF COND. QUANTUM OSCILLATIONS IS SHOWN.

UNCLASSIFIED

USSR

UDC 539.16.04:621.384.67

KOMOCHKOV, M. M., and TETEREV, Yu. G."Activation of Synchrocyclotron Cooling Water"

Moscow, Atomnaya Energiya, Vol 34, No 1, Jan 73, pp 17-22

Abstract: The concentration of gamma-active isotopes in the cooling water of the synchrocyclotron ( $E_0=680$  MeV) in the Laboratory of Nuclear Problems of the Joint Institute of Nuclear Research was studied and the levels of gamma-radiation near the cooling system were measured. The activity of gamma-active isotopes was measured on spectrometers with NaI(Tl) and Ge(Li) detectors. In the water of the cooling system long-life isotopes were found which are corrosion products of the cooling system material. The activity of these isotopes is commensurable with that of  $Be^7$  produced from the oxygen of water. The concentration of radioactive isotopes in water is determined not only by the intensity of accelerated protons and half-life periods, but also by the sorption and desorption processes on the walls of the cooling system. Therefore, the equilibrium gamma-activity of long-life isotopes ( $T_{1/2} > 6$  days) is reached during 6 days, irrespective of their half-life periods. The formulas presented for calculating induced radioactivity were obtained on the basis of investigated regularities in the accumulation of radioactive isotopes in the water of the cooling system. Two figures, two tables, five bibliographic references.

1/1

- 70 -

USSR

UDC; 53.07/.08+53.001.5

ZAYTSEV, L. N., KOMOCHKOV, M. M., SYCHEV, B. S.

"Principles of Accelerator Shielding"

Osnovy zashchity uskoriteley (cf. English above), Atomizdat, 1971, 400 pp, ill. 2 r. 64 k. (from RZh-Fizika, No 4, Apr 72, Abstract No 4A532 K)

Translation: This is a book on the problems of calculating the parameters of designing , and utilizing accelerator shielding. The book consists of ten chapters dealing with interactions between particles and matter, the propagation of radiation in matter, methods of calculating the shielding parameters, the types of radiation in accelerators, experimental studies of processes in shielding, induced radioactivity, composition of shielding and selection of materials, planning of buildings and shielding, and construction of shielding.  
V. P.

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1/2 030 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--RADIATION YIELD BEYOND OIYAI SYNCHROCYCLOTRON SHIELDING -U-

AUTHOR-(04)-ALEYNIKOV, V.YE., KIMEL, L.R., KOMOCHKOV, M.M., SIDORIN, V.P.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(5), 438-9

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--SYNCHROCYCLOTRON, RADIATION SHIELDING, CONCRETE, ANGULAR  
DISTRIBUTION, SPECTRAL DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAHE--3008/0516

STEP NO--UR/0089/70/023/005/0430/0439

CIRC ACCESSION NO--AP0137605

UNCLASSIFIED



2/2 030

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137605

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE YIELD OF N (FAST, SLOW, AND MEDIUM ENERGY) BEYOND THE OIYAI SYNCHROCYCLOTRON (600 MEV) SHIELDING WAS MEASURED TO DET. SPECTRAL ANGULAR DISTRIBUTION OF THE RADIATION. THE SYNCHROCYCLOTRON IS LOCATED WITHIN A CONCRETE SHIELDING MEASURING 52 TIMES 38 TIMES 32 M. THE THICKNESS OF THE CONCRETE WALLS IS 2 M. ALL WALLS, WITH THE EXCEPTION OF ONE, WERE ALSO PROTECTED BY A LAYER OF EARTH (10 M THICK). THE MOST INTENSIVE RADIATION LOSS, COMPRISING 50-60PERCENT OF THE TOTAL LOSS, OCCURS THROUGH THE WINDOW OPENINGS.

UNCLASSIFIED

Acc. Nr: **AP0044611**

Ref. Code: **UR0497**

PRIMARY SOURCE: **Klinicheskaya Meditsina**, 1970, Vol 48,  
Nr 1, pp **93-96**

**ALTERATIONS OF SOME FUNCTIONAL TESTS OF THE LIVER  
IN MECHANICAL JAUNDICE**

**Murav'yeva, N. K.; Komogortseva, G. A.**

**Summary**

The authors examined 41 patients with mechanical jaundice, 9 — with chronic hepatitis after sustained infectious hepatitis and 15 apparently healthy persons (control group). Data were derived testifying to the fact that in protractedly running mechanical jaundice there occur changes in the liver characteristic of chronic hepatitis, this finding its reflection in pathological changes of functional (in this instance precipitation) tests, which at this period of mechanical jaundice lose their differential diagnosis value. Determination of the fibrinogen level may be utilized as a differential diagnosis test between mechanical and parenchymatous jaundice.

REEL/FRA  
**19771288**

1/2 021  
UNCLASSIFIED  
PROCESSING DATE--04DEC70  
TITLE--LUBRICATING COOLING LIQUID FOR COLD WORKING OF METALS -U-  
AUTHOR--(05)-NIKITIN, YU.I., SKRIPKO, G.F., SOKHIN, S.M., POGORELYY, B.V.,  
KOMOLAYEVA, L.V.  
COUNTRY OF INFO--USSR  
SOURCE--U.S.S.R. 263,799  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PATENT, METALWORKING LUBRICANT, COLD WORKING,  
CHEMICAL COMPOSITION, BORATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3004/0844

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

CIRC ACCESSION NO--AA0131437

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0131437

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A LUBRICATING COOLING LIQ. HAS THE FOLLOWING COMPN.: CALCD. SODA 0.1-0.8, H SUB2 O SOL. CELLULOSE ESTER SALT 0.03-0.3, NH SUB4 CL 0.05-0.1, NA TETRABORATE 0.2-0.5, NANO SUB3 0.1-0.3, PARAFFIN OIL 0.1-0.5, AND H SUB2 O 97.5-99.42PERCENT. FACILITY: UKRAINIAN SCIENTIFIC RESEARCH INSTITUTE OF INSTRUMENTS AND SYNTHETIC EXTRAHARD MATERIALS.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--KINETICS OF THE FIRST POSTRADIATION MITOSES DURING THE IRRADIATION  
OF A SYNCHRONOUS CULTURE OF SOTS CELLS IN VARIOUS PHASES OF THEIR LIFE  
AUTHOR--(02)--GUBIN, V.A., KOMOLOV, I.S.

COUNTRY OF INFO--USSR

SOURCE--RADIOBIOLOGIYA 1970, 10(1), 152

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GAMMA RADIATION, RADIATION BIOLOGIC EFFECT, RADIATION DOSAGE,  
MITOSIS, RADIATION CELLULAR EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/1843

STEP NO--UR/0205/70/010/001/0152/0152

CIRC ACCESSION NO--AP0127253

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127253

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SYNCHRONOUS POPULATION OF SOTS  
CELLS WAS GAMMA IRRADIATED WITH 500 R DURING VARIOUS PERIODS OF MITOSIS.  
FORMATION OF INITIAL POSTIRRADN. MITOSES WAS ACCOMPANIED BY  
PROLONGATION OF THE LIFE CYCLE. THIS EFFECT WAS MOST NOTABLE AFTER  
IRRADN. OF CELLS DURING DNA SYNTHESIS. FACILITY: INST. BIOFIZ.,  
MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 51:155.001.57:681.3.06

KOMOLOV, V. V.

"On Correction of a Linear Discriminant Function by Separation of Classes  
Conforming to Distribution Laws Other than Normal"

Tr. VNI med. priborostr. (Works of the All-Union Scientific Research  
Institute of Medical Instrument Making), 1971, vyp. 1, pp 141-147 (from  
RZh-Kibernetika, No 12, Dec 71, Abstract No 12V1007)

Translation: The author considers the problem of correcting a linear  
discriminant function constructed on the basis of the hypothesis of normal  
distribution of classes  $R_1$  and  $R_2$  in the case where this hypothesis fails.  
Adjustment correction formulas are derived for the directing vector and  
free term of the linear discriminant function. Author's abstract.

1/1

USSR

UDC: 51:155.001.57:681.3.06

YENYUKOV, I. S., KOMOLOV, V. V.

"Algorithms for Constructing Linear Discriminant Functions for Diagnosis of Two Illnesses"

Tr. VNII med. priborostr. (Works of the All-Union Scientific Research Institute of Medical Instrument Making), 1971, vyp. 1, pp 78-88 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V1023)

Translation: Equations are derived for determining the linear discriminant function which minimizes the loss function. The conditions of existence and uniqueness of the linear discriminant function are determined for the case of separation of two classes. Authors' abstract.

1/1



USSR

UDC: 51:155.001.57:681.3.06

YENYUKOV, I. S., KOMOLOV, V. V.

"Algorithms for Constructing Linear Discriminant Functions for Diagnosing an Arbitrary Number of Illnesses"

Tr. VNII med. priborostr. (Works of the All-Union Scientific Research Institute of Medical Instrument Making), 1971, vyp. 1, pp 89-92 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V1024)

Translation: A method is given for constructing a system of linear discriminant functions for the case where there are more than two classes to be separated. Authors' abstract.

1/1

- 96 -

Radiobiology

USSR

UDC 621.311.12(540)

KOMOLOVA, G. S., TRIFONOV, E. N., and YEGOROV, I. A., Institute of Biochemistry  
imeni A. N. Bakh, Academy of Sciences USSR, Moscow

"Structural Changes in DNA Isolated From Tissues of Gamma-Irradiated Animals"

Moscow, Doklady Akademii Nauk SSSR, Vol 208, No 1, 1973, pp 248-250

Abstract: Investigations were conducted on the effects of whole-body gamma irradiation on the DNA in different tissues. The experiments were performed on sixty 200-250 g male Wistar rats, the experimental group of which was exposed to  $^{60}\text{Co}$  at a rate of 200 r/min for a total dose of 650 r (the equivalent of an  $\text{LD}_{50}$  dose). Following irradiation, the animals were decapitated at different periods of time, the thymus, liver, and spleen were removed and the DNA extracted in both control and experimental animals. The molecular weight of the isolated DNA in both groups of animals was about  $7-10 \times 10^6$ . Analysis of DNA by the formaldehyde kinetic method showed that in the case of thymus DNA, there were  $1.3 \pm 0.4$  structural defects per 10,000 nucleotide pairs 15 min after irradiation. This figure remained relatively constant for about one hour, and by 3 hr increased to  $6.1 \pm 0.3$  per 10,000 nucleotide pairs and remained relatively unchanged for the next 15 hrs. In the spleen and liver, the number of defects in secondary DNA structure was 4.5 and 1.6, respectively, per 10,000

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USSR

KOMOLOVA, G. S., et al., Doklady Akademii Nauk SSSR, Vol 208, No 1, 1973,  
pp 248-250

nucleotide pairs 18 hr after irradiation. The data indicate certain tissue specificity with respect to DNA damage in the postirradiation period. After 3 hr it is believed that damage to the secondary structure of DNA was due to irradiation-induced nucleases as indicated by the concomitant increase in the amount of single-strand DNA.

2/2

- 59 -

KOMOLOVA, G. S.

DNA CATABOLISM IN THE ORGANS OF RATS UNDER THE INFLUENCE OF TRANSVERSELY DIRECTED ACCELERATIONS

UDC 612.398.145.1.014.733.001.001

Article by G. S. Komolova, V. F. Makaryan, Ye. V. Belikov, L. D. Yermolov, and I. A. Yegorov; *Antibiotiki i Khimicheskaya Meditsina*, Moscow, Vol. 5, No. 5, September-October 1972, pp. 14-17, submitted for publication 2 August 1972.

**Abstract:** Exposure of rats to transverse accelerations of 25 g, imparted for six minutes, resulted in a 20% decrease in the DNA content in their spleens and caused no changes in liver DNA content. The exposure brought about no variations in DNAase activity in tissue homogenates of their superintendents. However, the total activity of the free and bound enzyme in the liver measured in the homogenate after treatment with Triton X-100 was 1% lower in the experimental animals than in the controls. The physicochemical properties of DNA (molecular weight and secondary structure) from tissues of animals which were exposed to accelerations remained unaltered in comparison with normal levels.

It is known that transverse accelerations cause functional, morphological and biochemical shifts in the animal body. There is a definite correlation between structural impairments and biochemical changes in the relation between structural impairments and biochemical changes in the relation of animals subjected to high accelerations (M. I. Samoylov and T. M. Shadrin). Animals exhibit a decrease in oxygen concentration in the tissues and this results in a decrease in the level of cell respiration with maladaptation or hypoxia (A. S. Bazar, et al., 1963). A shortage of energy resources can cause an impairment in functioning of cell membranes. Data published by Moorek and Brody show that during liver hypoxia there is a disturbance of oxidative phosphorylation and a decrease in the  $\text{ATP}$  level in the mitochondria. It is also known that an oxygen shortage in the tissues causes damage to the membranes of lysosomes and mitochondria with an impairment in their contractility (De Duve, 1969; Fredrick, Chevreton-Cambalieu).

Accordingly, acceleration is among the factors capable of making labile the membranes of subcellular structures. The lability of these membranes is usually accompanied by the setting free of enzymes from

JRS 57517

15 Nov 72

USSR

UDC 577.15

KOMOLOVA, G. S., YERYGIN, G. D., VASIL'YEVA, T. B., and YEGOROV, I. A.,  
Institute of Biochemistry imeni A. N. Bakh, Academy of Sciences USSR, Moscow

"Effect of a Constant Magnetic Field of High Intensity on the Enzymatic  
Hydrolysis of Nucleic Acids"

Moscow, Doklady Akademii Nauk SSSR, Vol 204, No 4, 1972, pp 995-997

Abstract: DNA ( $S \sim 25$ ) and RNA were subjected to the action of DNA-ase and RNA-ase respectively at 25°C for 1.5 hr under the effect of a magnetic field. The reaction mixtures were circulated continuously through a tube. The change in the enzyme activity due to the action of the magnetic field was determined spectrophotometrically on the basis of the increase of extinction in the acid-soluble fraction at  $\lambda = 260 \text{ m}\mu$ . The concentration of the enzyme at which the reaction began was 0.6  $\%$ /ml (enzyme - substrate ratio 1:5000) for RNA-ase and 3  $\%$ /ml for DNA-ase (enzyme - substrate ratio 1:50), respectively. In the experiments with DNA - DNA-ase, the activity of DNA-ase was increased as a result of the action of the magnetic field by 30, 16, and 0% at intensities of the magnetic field equal to  $3.2 \times 10^3$ ,  $1.2 \times 10^3$ , and  $0.8 \times 10^3$  Oe, respectively. The effect of the magnetic field can be ascribed to reorientation of DNA molecules. The activity of RNA-ase was not yet increased at  $3.2 \times 10^3$  Oe. One may assume that much higher intensities of the magnetic

1/2

USSR

KOMOLOVA, G. S., et al., Doklady Akademii Nauk SSSR, Vol 204, No 4, 1972,  
pp 995-997

field will be required to exert an effect on the RNA - RNA-ase reaction.  
(Submitted by Academician A. I. Oparin, 19 Jul 71).

2/2

- 7 -

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--SEPARATION OF RIBONUCLEASE PHOTOLYSIS PRODUCTS BY A GEL FILTRATION  
METHOD -U-  
AUTHOR--(04)-KOMOLOVA, G.S., YEGOROV, I.A., VASILYEVA, T.B., MAKEYEVA, V.F.  
COUNTRY OF INFO--USSR K  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1)  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--RIBONUCLEASE, PHOTOLYSIS, CHEMICAL SEPARATION, GEL, FILTRATION  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3003/1477 STEP NO--UR/0020/70/191/001/0229/0230  
  
CIRC ACCESSION NO--AF0130406

2/2 011

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0139406

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GEL FILTRATION ON A SEPHADEX G-100 COLUMN WAS USED TO SEP. THE FRACTIONS OF RIBONUCLEASE AFTER ILLUMINATION WITH UV LIGHT. ILLUMINATION TO THE POINT OF 15PERCENT INACTIVATION PRODUCED A SECONDARY PEAK ON THE CHROMATOGRAM IN WHICH THE ENZYMIC ACTIVITY WAS TOTALLY LACKING. FURTHER INACTIVATION LED TO ENHANCEMENT OF THIS PEAK, FOLLOWED BY DEVELOPMENT OF YET ANOTHER NEW PEAK WHICH HAS SOME ENZYMIC ACTIVITY. EVIDENTLY IN THE EARLY STAGE OF ILLUMINATION AN SS BOND IS RUPTURED AND FURTHER DENATURATIONAL CHANGES IN THE ENZYME ARE NOT ACCOMPANIED BY BREAKS OF OTHER SS BRIDGES. THE TOTAL SH CONTENTS IN NATURAL AND ILLUMINATED SPECIMENTS PROVED TO BE EQUAL. THE LOSS OF ACTIVITY CANNOT BE ASCRIBED TO DENATURATION PER SE OF ALL ENZYME MOLES. BUT ONLY OF SPECIFIC PARTS OF THESE. FACILITY: INST. BIOKHM. IM. BAKHA, MOSCOW, USSR.

UNCLASSIFIED



Physiology

USSR

UDC 616.281-008.55:359

KOMORDIN, I. P., Maj Med Serv

"Certain Characteristics of Meniere's Syndrome in Deep Divers"

Moscow, Voenno-Meditsinskiy Zhurnal, No 5, 1973, pp 66-67

Abstract: Meniere's disease in divers presents a clinical picture of a purely labyrinthine pathology, quite distinct from the general decompression sickness. Analysis of eight cases of Meniere's disease revealed the following common characteristics. The disorder develops suddenly during ascent decompression at a depth of 40-45 meters after a 1.5-3 hr stay at a depth greater than 150 meters. The disease includes severe vertigo, headache, nystagmus, nausea, vomiting, impaired hearing, tinnitus, and poor orientation in space. On the other hand, such typical manifestations of the decompression sickness as skin itch and pain in muscles and joints are absent. Rapid recompression to the maximum pressure immediately alleviates the disorders in only 30% of the cases. In the remaining cases, recovery begins after 3-8 hrs under high pressure, with vertigo, headache, and the feeling of congestion in the ears subsiding the last. While individual predisposition undoubtedly plays a role, nonobservance of the prescribed pre-dive rest and diving in the second half of the day and at night increase the chance for Meniere's syndrome to develop.

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USSR

KOMORDIN, I. P., Voenno-Meditsinskiy Zhurnal, No 5, 1973, pp 66-67

It has not been established whether the syndrome is caused by gas bubbles trapped in the endolymph or in the blood vessels of the labyrinth.

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- 46 -

1/2 007 UNCLASSIFIED  
TITLE--UNIFORMITY OF A SINTER CHARGE -U-

PROCESSING DATE--11SEP70 /

AUTHOR--KOROTICH, V.I., BUTIVCHENKO, V.N., KOMORNIKOV, G.I., STARIKOV,  
M.A.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(1), 1-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SINTER, IRON ORE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1987/0143

STEP NO--UR/0133/70/030/001/0001/0007

CIRC ACCESSION NO--AP0103822

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103822

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM THE MICRONON UNIFORMITY STANDPOINT, AN IDEALLY MIXED SINTERING CHARGE CAN BE CONCEIVED AS A NO. OF ADJOINING ELEMENTARY CELLS, FOR EXAMPLE CUBES, THE EDGE OF WHICH IS EQUAL TO THE DISTANCE  $L$  BETWEEN NEIGHBORING SIMILAR PARTICLES HAVING DIAM.  $A$ . THIS DISTANCE IS GIVEN AS  $L$  EQUALS  $A/P$  TIMES  $10$  PRIME<sup>7</sup>- $\gamma$  AF)PRIMEONE HALF WHERE  $P$  IS  $D$ .,  $\gamma$  IS CHARGE  $D$ .,  $A$  IS THE PERCENTAGE OF A GIVEN COMPONENT, AND  $F$  IS THE PERCENTAGE OF A GIVEN FRACTION OF THE COMPONENT. THIS DISTANCE VARIES LARGELY AS A FUNCTION OF PARTICLE SIZE, THUS DEFINING THE CELL REQUIRED FOR THEORETICAL NONUNIFORMITY, WHICH IS NONUNIFORMITY IN THE CASE OF IDEALLY UNIFORM DISTRIBUTION OF SEP. PARTS IN A VOL. OF CHARGE. EXAMPLES OF DIMENSIONS OF THESE CELLS FOR DIFFERENT SIZES OF VARIOUS MATERIALS OF A SINTERING CHARGE ARE GIVEN. ACTUALLY THEY HAVE TO BE MARKEDLY INCREASED, ON ACCOUNT OF INADEQUATE MIXING, TO PROVIDE SUFFICIENT SAMPLES. THE NO. OF SAMPLES OF THIS SIZE NEEDED TO PROVIDE THE AV. COMPN. DECREASES WITH THEIR LARGE VOL.; FOR THE CONDITIONS DESCRIBED, 30-50-CM PRIME<sup>3</sup> SAMPLES ARE SUFFICIENT. MACRONONUNIFORMITY IS A FUNCTION OF MIXING, WHICH REDUCES IT WITHOUT ELIMINATING IT.

UNCLASSIFIED

USSR

UDC 620.197.5

LETSKIKH, YE. S., KOMORNIKOVA, A. G., KNYAZHEVA, V. M., KOLOTYRKIN, YA. M.

"Anodic Protection of Titanium in Solutions of Chromic Chloride Containing Chromous Chloride"

Moscow, Zashchita Metallov, Vol 6, No 6, Nov-Dec 70, pp 635-639

Abstract: The possibility of anodic protection of titanium as applied to the technological process conditions of obtaining chromic chloride based on the solution of its hydroxide in hydrochloric acid is discussed. It is shown that anodic protection permits a significant increase in the corrosion resistance of titanium in solutions of chromic chloride containing a reducing agent -- chromous chloride. The losses of chromous chloride resulting from anodic oxidation do not exceed the process requirements.

The experimental procedure and results are described in detail. It was found that introduction of chromous chloride into a solution of chromic chloride greatly reduces the corrosion resistance of titanium as a result of shifting the stationary potential from the passive region to the transient region.

The titanium solution rate is defined as a function of the potential in the chromic chloride solution containing chromous chloride. When using anodic protection of the titanium the corrosion resistance of the titanium can be

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USSR

LETSKIKH, YE. S., et al., Zashchita Metallov, Vol 6, No 6, Nov-Dec 70, pp 635-639

increased by 30 times. It is established that the basic anodic process in titanium in the passive region is oxidation of  $\text{Cr}^{2+}$ , the rate of which is approximately two orders higher than the titanium solution rate. However, the expenditures on electric power are low in the case of anodic protection. They do not go beyond the technological process requirements on the losses of  $\text{Cr}^{2+}$  as a result of anodic oxidation. A significant increase in the titanium solution rate was also detected in the passive region in the presence of the reducing agent ( $\text{Cr}^{2+}$ ).

2/2

KOMOTSKIY, R. V.

Spacecraft  
Engineering

QUALITY EVALUATION OF EMANCIPATORY PROCESSES IN SPACE VEHICLE CONTROL

10:28:55 54340

26 09 71

1. A. D. KOROTKIN, V. A. TARD  
R. V. KOMOTSKIY, V. P. SHTIL'NITSKIY  
A. M. GIBBYANET

pp 1-7

**Abstract:** The problem of quantitative evaluation of capacity for work by a human operator in a space vehicle control system is currently quite important. Such an evaluation is required for determining the level of the operator's training, to predict his reliability, to carry out professional selection, etc. The proposed method for evaluating the work capacity of a human operator is based on probability-iterative methods and the mathematical theory of linear differential transforms. The method taken into account human adaptability in the course of professional training and makes it possible to determine the probability of successful implementation of a task in the course of one control cycle under both normal and emergency flight conditions. The high information yield of this method is supported by a number of experiments.

The creation of modern and promising systems for controlling space vehicles is impossible without organizing optimum relationships among the functions of mechanisms, apparatus, equipment and other "nonliving" devices, on the one hand, and the human being controlling them, on the other. At whatever control level the man-operator may be situated, he must solve information-logic problems and appropriately impart carefully calculated reactions to the control organs.

KOMOTSKIY, R. V.

Human  
Engineering

SOIIPRS 53801  
12 AUG 71

UDC 612.812:629.78.07:658.55.011.56/001.57

MODELS OF A MAN-OPERATOR IN INVESTIGATING SPACESHIP MANUAL CONTROL

Article by R. V. Komotakiy, S. A. Minaev and A. Ye. Chesyahev; Moscow, Kozmicheskaya Prolegnaya i Ispytaniya, Moscow, Vol. 3, No. 3, 1971, pp 45-50, submitted 1 July 1970

**Abstract:** This paper discusses the possibility and feasibility of replacing a man-operator with an appropriate model and surveys the current models in accordance with the main classes of operator's activity. When possible the authors give mathematical descriptions of models and instructions on how to use models in studying manual operation of a spacecraft.

The experience of spaceflights in our country and abroad has convincingly demonstrated the possibility and feasibility of including man in the ship control system. Despite a number of advantages of a machine, man is preferable for performing functions requiring inductive reasoning, identification of images, flexibility and adaptability to changing and unexpectedly arising conditions.

The reliability requirements and the high cost of experimentation under actual conditions dictate use of the method for investigating a manual control system in the planning stage by statistical modeling by means of ground trainer-research complexes with the participation of a group of operators. The objective of the investigation was to establish the qualitative and quantitative characteristics of the information necessary to the operator for making a decision on each specific problem, determine the time for the reception and analysis of information, match the time parameters of man and machine, etc. Statistical modeling with man's participation can be performed only on a real time scale and usually over an extremely long time and it is time-consuming. In addition, the difference in individual characteristics of operators predetermines the scatter of investigated parameters of the projected system and necessitates a great number of experiments for attaining statistically reliable results. Accordingly, it is desirable to replace a man-operator by his model, making possible a substantial decrease in the duration of the



USSR

UDC 621.395.625.6

DERYUGIN, L.N., KOMOTSKIY, V.A., FRIDMAN, G.KH.

"Characteristics Of Thin-Film Metal Matrices For Laser Beam Inscription"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 6(12), 1972, pp 89-95

Abstract: The paper presents theoretical evaluations and the results of experimental studies of the sensitivity and resolution powers of thin-film metal matrices when inscription is performed by evaporation of a metal film under the influence of laser radiation. The limiting possibilities of the matrix are estimated with respect to sensitivity, resolution power, and speed of response. Within the scope of the work studies were also made of matrices of other types in which layers of colored polymer were used as an absorption layer, as well as combined layers consisting of a metal film and a layer of colored polymer. Brief comments are made on these studies. 4 fig. 3 tab. 9 ref. Received by editors, 25 Oct 1971.

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USSR

UDC: 621.317.784.023

KOMOV, A. N., PAKHOMOV, V. V.

"SHF Power Meters Based on Hall emf Pickups"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, vyp. 44, pp 69-74 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A283)

Translation: A method based on the Hall effect in semiconductors belongs to the small number of methods of power measurements in the millimeter wavelength range which permit measuring true power flow. The operating principle is explained for meters in this category for waveguide use, and their advantages are pointed out. An investigation was made of meters for the indicated band based on N-type and P-type InSb pickups and N-type InAs pickups over the wide temperature interval from -160 to +80°C. The experimental procedure is presented and the results of the experiment are discussed. Five illustrations, bibliography of six titles. E. L.

1/1

USSR

UDC: 621.372.412

DRONOV, N. D., KOMOV, A. N., Novocherkassk "Order of the Red Banner of Labor"  
Polytechnical Institute imeni Sergo Ordzhonikidze

"A Method of Changing the Frequency of a Piezoelectric Resonator"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,  
No 12, Apr 71, Author's Certificate No 299944, Division E, filed 29 Dec 69,  
published 26 Mar 71, pp 206-207

Translation: This Author's Certificate introduces a method of changing the frequency of a piezoelectric resonator made from a quartz or ceramic plate whose side faces are metallized with a magnetic conductive material. As a distinguishing feature of the patent, the natural frequency of the piezo-electric plate is changed by placing the above-mentioned resonator is an alternating magnetic field.

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Acc. Nr:

AP0052062

Ref. Code: UR0396

PRIMARY SOURCE: Patologicheskaya Fiziologiya i  
Eksperimental'naya Terapiya, 1970, Vol 14,  
Nr 1, pp 43-45

REPRODUCTION OF EXPERIMENTAL ENDARTERITIS BY HORMONES

A. N. Shabanov, Ts. Ya. Gudynskaya, M. A. Potekayeva, D. V. Komov

Hydrocortisone and testosterone were injected to male rabbits for 3 months, daily. Vessels of the limbs, abdominal and thoracic aorta and renal artery were examined. Un-  
typical changes, varying from mucoid swelling to plasmatic impregnation were revealed  
in all the groups of rabbits. Analogous changes were seen in histological and histoche-  
mical examination of the vessels at the early stages of endarteritis obliterans.

111

REEL/FRAME  
19820600

64 2

Acc. Nr. AN 0103340

Ref. Code: 74R9030

AUTHOR-- KOMOV, V., CORRESPONDENT, VORONEZH

TITLE-- "KATYUSHA" WAS BORN HERE

NEWSPAPER-- NEDELYA, MAY 4-10, 1970, NR 19, P 19, COLS 1-2

ABSTRACT-- ACCORDING TO THE ARTICLE, THE FIRST KATYUSHA ROCKET LAUNCHERS OF THE SECOND WORLD WAR FAME WERE PRODUCED AT THE PLANT IMENI KOMINTERN IN VORONEZH. TODAY THIS PLANT IS MANUFACTURING EXCAVATORS. LATER THE KOMINTERN DRAWINGS WERE USED BY A MOSCOW PLANT "KOMPRESSOR". WHEN THE KOMINTERN PLANT WAS EVACUATING TO THE URALS, DESIGNER PETR MIKHAYLOVICH FEDIN WAS IN CHARGE OF THE OPERATION. TODAY FEDIN IS BACK WITH HIS OLD PLANT KOMINTERN.

CREDIT IS GIVEN TO YA. TUPITSIN, CHIEF ENERGETICS ENGINEER, AND V. CHERNOGUBOVSKIY, CHIEF ENGINEER, FOR SETTING UP PRODUCTION OF KATYUSHA,S AT THE KOMINTERN PLANT.

REEL/FRAME  
19861540

ALS  
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1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--AGE SPECIFIC DIFFERENCES OF THE CATALASE ACTIVITY AND CONCENTRATION  
HEMOLYSED BLOOD PROTEIN IN PATIENTS WITH A SEVERE COURSE OF BRONCHIAL  
AUTHOR--(04)--BULATOV, P.K., KOMOV, V.P., MAKSIDOVA, A.O., BERGER, R.G.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 5, PP 78-80

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RESPIRATORY SYSTEM DISEASE, BLOOD CHEMISTRY, HEMOLYSIS,  
CATALASE, BIOLOGIC AGING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1998/0474

STEP NO--UR/0504/70/042/005/0078/0080

CIRC ACCESSION NO--AP0121148

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121148

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED THE ACTIVITY OF CATALASE AND PROTEIN CONCENTRATION OF HEMOLYSED BLOOD IN PATIENTS WITH A SEVERE COURSE OF BRONCHIAL ASTHMA. THERE WAS SEEN A SHARP FLUCTUATION IN THE ENZYMIC ACTIVITY AND PROTEIN CONCENTRATION DEPENDING UPON THE PHASE OF THE DISEASE AND THE PATIENT'S AGE. THE AUTHORS ASSUME THAT THE CHANGES OF THE CATALASE ACTIVITY ARE CAUSED ON THE ONE HAND BY A GENERAL PATHOLOGY OF TISSUE RESPIRATION AND ON THE OTHER ONE BY CERTAIN COMPENSATORY FUNCTIONS OF THE ORGANISM.

FACILITY: KAFEDRA POSPITAL'NOY TERAPII I Leningrad. MEDITSINSKOGO INSTITUTA IM. I. P. PAVLOVA. FACILITY: KAFEDRA BIOKHIMII Leningrad. KHIMIKO-FARMATSEVTICHESKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC 539.214:539.374

~~KOMOV, V. S.~~

"Elastoplastic Twisting of Prismatic Bars of Noncircular Cross Section"

Ufim, Tr. Ufim. aviats in-ta (Transactions of the Ufim Aviation Institute),  
Vyp 32, 1971, pp 88-94 (from Referativnyy Zhurnal -- Mekhanika, No 4, 1973,  
Abstract No 4V607)

Translation: On investigating the stress and deformation conditions of non-circular bars, twisted beyond the limits of elasticity, one of the basic difficulties is determining the limits of elasticity of the cross section center. An approximate solution of this problem under conditions of ideal plasticity exists only for partial forms of the cross section. An algorithm of the solution of integral equations of the coordinates of the elastic center is worked out by the method of successive approximations for any cross section and the solution is given by this method for an ellipse, an oval and a shaft with two parallel flats. (5 bibliographic entries)

1/1



USSR

UDC: 612.013.7.014.45

SHKARINOV, L. N., PAVLOVA, I. V., and KOMOVA, A. D., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR

"Comparison of the Effects of Different Kinds of Noise on Energy Metabolism in Experimental Animals"

Moscow, Higiyena Truda i Professional'nyye Zabolevaniya, No 1, 1971, pp 5-9

Abstract: Rats were exposed to various frequencies and levels of noise (125 and 4,000 hz at 80 db and 125 and 4,000 hz at 97 db) 6 hours a day for 7 days. The content of pyruvic acid, creatine, creatinine, amino nitrogen, and inorganic acid in urine served as indexes of energy metabolism. Lactic acid and phosphorus fractions were determined in the brain, blood, and some internal organs after the experiments. Noise at 125 and 4,000 hz and 80 db reduced the content of pyruvic acid, creatine, etc. but had no effect on blood and brain lactic acid, an indication of intensification of the oxidative processes and glycolysis and resulting accumulation of macroergic phosphorus compounds. The action of octave bands with mean geometric frequencies of 125 and 4,000 hz at 97 db inhibited glycolysis in the CNS and disrupted the oxidative processes in the brain and viscera.

1/1

- 33 -

UDC: 621.791.793:546.821

USSR

GRABIN, V. F., Candidate of Technical Sciences, NOVIKOV, YU. K., Engineer, GUREVICH, S. M., Doctor of Technical Sciences, KOMPAN, YA. YU., Candidate of Technical Sciences, NOVIKOVA, D. P., Candidate of Technical Sciences, Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences of the Ukrainian SSR, CHERKASOV, N. I., Engineer, Tashkent Aviation Plant imeni Chkalov

"Structure and Properties of the Weld Zone During the Electro-Slag Welding of High-Strength Titanium Alloy"

Kiev, Avtomaticheskaya Svarka, No 9, Sep 73, pp 20-23

Abstract: The authors study the reasons for the reduced impact strength in the weld zone during the electro-slag welding of titanium alloy; ways are also sought for increasing ductility. The joints were studied with edges 60 mm thick which were done by electro-slag welding at 1700-2000 amps and 24-25 v, using the AN-T4 flux. Metallographic and x-ray analyses of the weld zone metal in its state after welding show that the metal structure is of the martensite alpha prime phase and residual beta phase type. The results show that the reduction of the impact strength in the weld zone during the electro-slag welding of an alloy of the titanium-vanadium-molybdenum-chromium-iron-zirconium system is conditioned by polygonization which is conditioned by a reversible alpha to beta phase transition and by the development of welding stresses during cooling. It is also shown that annealing at 750°C increases the impact strength of the joints.

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- 74 -

USSR

UDC 621.791.793:546.821

KOMPAN, YA. VI., GUREVICH, S. M., and NOVIKOV, YU. K., Institute of Electric Welding imeni Ye. O. Paton, and GREBEN', K. A., Institute of Gas, Academy of Sciences Ukr SSR

"Molten Bath Bubbling in the Electrosag Welding of Titanium Alloys"

Kiev, Avtomaticheskaya Svarka, No 10, Oct 72, pp 15-16

Abstract: A study was made to determine the optimum depth of gas jet penetration into the weld bath in the electrosag welding of VT1 titanium alloy with a thickness of 40 mm. The gas bubbles remove nonmetallic inclusions from the bath and allow the fluxes to better react with the oxides in the metal bath. The formula used to determine optimum gas jet penetration, proposed by K. A. Greben', was:

$$h = \omega \sqrt[3]{\frac{d}{g} \frac{\gamma}{\gamma_M}}$$

where  $\omega$  -- jet velocity at the instant of entering the metal bath, m/sec;  
 $\gamma$  -- gas density, kg/m<sup>3</sup>; d -- jet diameter, m; g -- acceleration of gravity, m/sec<sup>2</sup>,  
 $\gamma_M$  -- liquid metal density, kg/m<sup>3</sup>. For a bath temperature of 1900-2200°C the depth of gas penetration into the molten metal was 13 mm at 1900°C and 14 mm at 2200°C.

USSR

KOMPAN, YA. YU., et al., Avtomaticheskaya Svarka, No 10, Oct 72, pp 15-16

at 2200°C. Bubbling the weld bath with argon made it possible to obtain joints with a reduced oxygen and nitrogen content, increased ductility, and a finer grain structure in the seam metal. 2 figures, 2 tables, 4 equations.

2/2

- 46 -

USSR

UDC: 621.375.826+532.763

VASIL'YEV, A. A., KOMPANETS, I. N., NIKITIN, V. V.

"Shortening the Switching Time of an Optical Transparency on a Liquid Crystal"

Moscow, Kvant. elektronika (Quantum Electronics), No 3, "Sov. radio", 1972, pp 81-83 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 73, abstract No 1B438 by T. V.)

Translation: A transparency on a liquid crystal controlled by an electric field is used for data recording. Scattering of the light flux with turbulent motion of the domains of the liquid crystal by sections of the transparency to which the electric field is applied leads to loss of coherence of the transmitted light and a sharp attenuation of its intensity.

The pattern of electric voltages recorded on the transparency is thus transformed to an optical image which is transferred as a hologram to a photographic plate, using a laser. The frequency characteristics of dynamic scattering are studied for activation and deactivation. As a result of studying the influence which an alternating electric field and short field pulses have on scattering duration, an image recording cycle time of less than 1.2 ms is achieved. Three illustrations, bibliography of six titles.  
1/1

USSR

UDC 621.375.82

KOMPANETS, I. N., MOROZOV, V. N., NIKITIN, V. V., BLINOV, L. M.

"Controlled Transparency on a Liquid Crystal for Recording Holograms"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 3,  
Moscow, Soviet Radio, 1972, pp 79-81 (from RZh-Fizika, No 12, Dec 72,  
Abstract No 12D1021)

Translation: A study was made of the effectiveness of using liquid crystals as light switches. A matrix comprising glass-metal inserts, a liquid crystal, and a transparent electrode controlled by an electric voltages permits recording of holograms at a rate of more than 50 cycles/sec, insuring high image contrast. Liquid crystals "with a memory" can be used to prepare the information before input to an optical computer and for output from the computer. The bibliography has 7 entries.

1/1

- 47 -

USSR

BASOV, N. G., BEREZIN, P. D., BLINOV, L. M., ~~KOMPANETS, I. N.~~, MOROZOV, V. N.,  
and MIKITIN, V. V., Physics Institute imeni P. N. Lebedev, Academy of Sciences  
USSR

"Phase Modulation of Coherent Light by Means of Liquid Crystals"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15,  
No 4, 20 Feb 72, pp 200-203

Abstract: The article describes results of a study of the effect of phase modulation with an electric field of coherent light passing through a nematic liquid crystal with positive anisotropy of permittivity ( $\epsilon_{\parallel} > \epsilon_{\perp}$ ). Such modulation opens up the possibility of the use of thin transparent layers of liquid crystals in controlled phase transparencies and permits an increase in optical data processing speed as compared to the speed of other liquid-crystal light switches. Phase changes in the light passing through the liquid crystal were recorded by observing the interference of light reflected by a rear and a front electrode. 4'-ethoxybenzylidene-4-aminobenzonitrile was used as the liquid crystal.

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1/2 026 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--PLASTIC OPERATIONS ON THE SCLERA -U-  
AUTHOR--(03)-SCMOV, YE.YE., YURCHENKO, V.V., KOMPANETS, N.A.  
COUNTRY OF INFO--USSR  
SOURCE--VOYENNO-MEDITSINSKIY ZHURNAL, NO 3, 1970, PP 32-36  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--WOUND, EYE, PLASTIC SURGERY, TISSUE TRANSPLANT, ADHESION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REL/FRAME--3006/0391 STEP NO--UR/0177/70/000/003/0032/0036  
CIRC ACCESSION NO--AP013+104  
UNCLASSIFIED



272 026

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134154

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PENETRATING WOUNDS OF THE SCLERA WITH THE FORMATION OF A DEFECT OF THE TISSUE ARE AMONG THE ESPECIALLY SEVERE DAMAGES OF THE ORGAN OF VISION WHOSE TREATMENT INVOLVES GREAT DIFFICULTIES. A PROBLEM OF PARAMOUNT IMPORTANCE IS THE TIMELY AND RELIABLE REESTABLISHMENT OF THE HERMETIC SEAL OF THE EYEBALL AND THE CREATION THANKS TO THAT OF CONDITIONS CONTRIBUTING TO THE NORMALIZATION OF ITS TONUS AND A FAVORABLE COURSE OF THE REPARATIVE PROCESSES. TO ACHIEVE THAT GOAL SOLELY BY MEANS OF THE OPEN SUTURES ORDINARILY USED IN SURGERY OF WOUNDS OF THE EYEBALL WITH DEFECT OF THE TISSUE DOES NOT SEEM POSSIBLE. THEREFORE IT CAN BE A MATTER ONLY OF PLASTIC CLOSURE OF THE SCLERAL DEFECT. THE PURPOSE OF OUR EXPERIMENTS WAS TO STUDY THE PLASTIC PROPERTIES OF TRANSPLANTS OF DIFFERENT NATURE INTENDED FOR THE REPLACEMENT OF SCLERAL DEFECTS. SIMULTANEOUSLY A DETERMINATION WAS MADE OF THE INFLUENCE OF THE BIOLOGICAL ACTIVITY OF AUTO AND HOMOTRANSPLANTS ON THE CHARACTER OF THEIR ADHESION, AND ALSO A SEARCH WAS MADE FOR THE MOST RATIONAL WAYS TO CLOSE TRAUMATIC DEFECTS OF THE WALL OF THE EYEBALL.

UNCLASSIFIED

USSR

BASOV, N. G., KOMPANETS, O. N., LETOKHOV, V. S. and NIKITIN, V. V.  
Physics Institute imeni P. N. Lebedev, Academy of Sciences, USSR

"Investigating Narrow Resonance Within the Dopler Line of Rotational-Oscillating Transitions of the SF<sub>6</sub> Molecule during Absorption Saturation"

Moscow, Zhurnal Eksperimental'noy i Teoriticheskoy Fiziki, Vol 59, No 2(8), 1970, pp 394-403

Abstract: Experimental measurement was made of the amplitude and width of narrow resonances within the Dopler line of rotational-oscillating transitions of the SF<sub>6</sub> molecule during the saturation of adsorption of a quasi-travelling wave from a CO<sub>2</sub> laser. The object of the experiment was to demonstrate the possibility of spectroscopy within the Dopler line by means of absorption saturation of a quasi-travelling wave. The effects of resonance widening were determined for the first time. The experimentally obtained large peak amplitude, along with its narrow width demonstrated the usefulness of the method for stabilizing the CO<sub>2</sub> laser frequency. The properties of a nonlinear spectroscope with a quasi-travelling wave are analyzed.

- END -

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KOMPANETS, V.S.

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J-9979

82

CHANGES IN THE FUNCTIONAL STATE OF THE BODY  
AMONG THE FLIGHT PERSONNEL OF THE  
MILITARY TRANSPORT AVIATION (pp 59-60)

By Lieutenant Colonel Medical Service K. V. Kuryavov.

Candidate of Medical Sciences.

Major Medical Service V. S. Kompanets.

Lieutenant Colonel Medical Service S. V. Gerasimov.

Lieutenant Colonel Medical Service S. S. Lavchuk.

and Major Medical Service A. L. Ignatyev.

The modern technical equipment of the VTA (Voyenno-transportnaya aviatsiya, military transport aviation) has considerably broadened its tactical possibilities. Naturally, this has changed the conditions of its professional activities and led to stricter requirements concerning the working capability of the personnel of the flight crews. Of late, works were published dedicated to the medical study of the conditions and way of life of VTA flight personnel. Thus, as a result of clinical-psychological and hygienic studies of VTA flight activities, a number of authors have provided medical descriptions and described the specific characteristics of long-distance flights (A. I. Zorvich, Ye. V. Bondarev, V. A. Vokrov, V. L. Barishchuk, V. G. Ovchinnikov, V. V. Karsavetov, V. L. P. Vokhmyanin, 1969, and others).

The object of our study was the influence of average-length flights on the body of the flight personnel. In this effect, we studied 42 members of flight crews who displayed no deviations in their state of health. They were in the 20-39 years age group with ten to 18 years of flight experience. The studies were made before the flights and 30-40 minutes after landing (in the spring-summer period). The flights took place in simple weather conditions at a 3,000-5,000 meters altitude. Take-off and landing took place at the base airfield. The influence of the flights on the state of the body was evaluated through studies of the nervous and cardiovascular systems and through laboratory data.

With a view to evaluating the dynamics of nervous processes (capability to concentrate and divide the attention), we used the intermittent flashing of numbers test. We determined a steady increase in the number of errors after flights, averaging 0.52 compared with the starting data ( $t = 2.001$ ; initial = 1.000). In addition, the average value of starting data will be marked by 1); the overall time was increased insignificantly (by three seconds). The attention span was determined with the help of the correctional span was involving the use of Landolt rings. The number of

Military Medical Journal #28  
01.9

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--REDUCTION OF MAGNESIUM, CALCIUM, STRONTIUM AND BARIUM WITH SILICON /  
AND ALUMINUM FOR THE PRODUCTION OF COMPLEX MODIFIERS -U-  
AUTHOR--(05)--GOLEV, A.K., ZAYKO, V.P., RYSS, M., VOLOSHCHENKO, M.V.,  
KOMPANICHENKO, V.M.  
COUNTRY OF INFO--USSR  
SOURCE--V 56. TEZISY DOKL. VIII KONFERENTSII PO TEORII I PRAKT. PROIZ-VA  
REFERENCE--KZH-TEKHNOLOGIYA MASHINOSTROYENIYA, NO 3, MAR 70, ABSTRACT E  
DATE PUBLISHED--70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, MATERIALS, MECH., IND.,  
CIVIL AND MARINE ENGR  
TOPIC TAGS--METAL REDUCTION, MAGNESIUM, CALCIUM, STRONTIUM, BARIUM,  
SILICON, ALUMINUM, SMELTING FURNACE, NODULAR IRON, CAST IRON,  
METALLURGIC CONFERENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/1662

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

CIRC ACCESSION NO--AR0127136

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

2IRC ACCESSION NO--ARO127136

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS NOTED THAT DURING REDUCTION OF MG FROM MG OXIDE BY 75PERCENT FERROSILICON WITH THE USE OF FLUX (FLUORITE), IT IS POSSIBLE TO OBTAIN 3-4PERCENT MG IN ALLOY. WITH REDUCTION IN THE PRESENCE OF CA OXIDE IT IS POSSIBLE TO OBTAIN UP TO 5-6PERCENT MG IN THE ALLOY. CA WAS REDUCED BY 75PERCENT FERROSILICON UP TO 22-24PERCENT OF ITS CONTENT IN ALLOY. USE OF CALCIUM IN INDUSTRIAL SMELTING IS AS HIGH AS 25-35PERCENT IN THE ABSENCE OF OTHER OXIDES IN CHARGE. COMBINED REDUCTION OF CA, AL AND SI ALLOWS TO BRING RECOVERY OF CA FROM OXIDES UP TO 40PERCENT AND ITS CONCENTRATION IN ALLOY UP TO 24-26PERCENT. REDUCTION OF SR WAS MOST DIFFICULT OF THE ALKALINE EARTH METALS, ITS CONCENTRATION DURING COMPLEX SILICON CALCIUM ALUMINOTHERMIC PROCESS DID NOT EXCEED 15PERCENT. BARIUM WAS MOST EASILY REDUCED. DURING REDUCTION OF BA BY 75PERCENT FERROSILICON, ITS CONCENTRATION REACHED 35PERCENT AND ITS SHIFT TO ALLOY 45PERCENT. DURING COMPLEX CALCIUM SILICON ALUMINOTHERMIC PROCESS THE AMOUNTS WERE 45 AND 80PERCENT RESPECTIVELY.

UNCLASSIFIED

USSR

UDC 678.675.046.32.01:537

KHIMCHENKO, YU. I., MELESHEVICH, A. P., KOMPANIYETS, V. A., and RADKEVICH, L. S.

"Effect of  $\gamma$ -Radiation on the Electric Properties of Metal Polymers Based on Polycaproamide"

Moscow, Plasticheskiye Massy, No 5, 1973, pp 27-29

Abstract: A study was made of the results of investigating the effect of  $\gamma$ -radiation on the electric properties of polycaproamide filled with highly dispersed metals. The electrical conductivity of the metal polymers depends essentially on the radiation dosage. The greatest increase in electrical conductivity is observed for polycaproamide filled with copper or nickel; the electrical conductivity of polycaproamide with iron or cobalt depends on the radiation dosage to a lesser degree. The variations in electrical conductivity are caused by the difference in supramolecular structures of the polymer in contact with different metals. By variation of the electrical conductivity in combination with ionizing radiation, it is possible to estimate the uniformity of the structure of the polymer compounds with electrically conducting fillers.

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-- 69 --

1/2 017 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--ON THE MECHANISM OF FORMATION OF METALLO POLYMERS BASED ON EPOXY  
THIOKOL COMPOSITION AND COLLOIDAL LEAD -U-  
AUTHOR--(05)-ULBERG, Z.R., KOMPANIYETS, V.A., ILINA, Z.T., YAVORSKAYA,  
N.V., NATANSON, F.M.  
COUNTRY OF INFO--USSR  
SOURCE--KULLOIDNYY ZHURNAL, 1970, VOL 32, NO 2, PP 278-281  
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METAL CONTAINING POLYMER, EPOXY RESIN, LEAD, POLYSULFIDE  
RUBBER, FREE RADICAL, CHEMISORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1992/1551

STEP NO--UR/0069/70/032/002/0279/0281

CIRC ACCESSION NO--AP0112545

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2/2 017

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112545

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERACTION OF AN EPOXY  
THIOKOL MIXTURE WITH COLLOIDAL LEAD DURING ITS THERMAL FORMATION  
INVOLVES THE APPEARANCE IN THE SYSTEM OF FREE RADICALS AT THE  
TEMPERATURE 240 PLUS OR MINUS 10DEGREES. THE INTERACTION BETWEEN THE  
EPOXY THIOKOL MIXTURE AND THE SURFACE OF COLLOIDAL LEAD IS OF A  
CHEMISORPTIVE NATURE. THE TEMPERATURE CONDITIONS OF PREPARATION OF  
METALLO POLYMERS BY THE THERMAL METHOD HAVE BEEN ESTABLISHED. THE  
DEGREE OF SWELLING OF METALLO POLYMERS DECREASES WITH RISING METAL  
CONCENTRATION.

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Acc. Nr:

AP 0039881

Abstracting Service  
CHEMICAL ABST. 3-10

Ref. Code:

UR 0393

63620j Flavonoids from *Salix elbrusensis* bark. Kompani-  
sev, V. A. (Pyatigorsk. Farm. Inst., Pyatigorsk, USSR). *Rhim.*  
*Prir. Soedin.* 1969, 5(4), 323-4 (Russ). The dried and ground  
bark (1.5 kg) of 1-5-year-old branches of *S. elbrusensis* trees was  
exhaustively extd. with 70% EtOH. The exts. were evapd., dild.  
with H<sub>2</sub>O, and treated with CHCl<sub>3</sub>, and then with EtOAc. The  
EtOAc exts. were evapd., and flavonoids were pptd. with anhyd.  
CHCl<sub>3</sub>. The ppt. was dissolved in a min. vol. of 50% EtOH, and  
Et<sub>2</sub>O was added to satn. The mixt. was allowed to stand at 3-4°,  
and within 10-12 days, crystals formed of a 5,7,4'-trihydroxy-  
flavone 5β-D-glucopyranoside, salipurposide (C<sub>21</sub>H<sub>22</sub>O<sub>10</sub>·1.5 H<sub>2</sub>O,  
m. 226-7°). The cambium layers from the bark (0.8 kg) of  
50-year-old trees were extd. in a Soxhlet app. with Et<sub>2</sub>O satd.  
with H<sub>2</sub>O. The ext. was evapd. to half the initial vol., and left  
standing at 3-4°. After 24 hr, the ppt. was washed with anhyd.  
Et<sub>2</sub>O, dissolved in a min. vol. of dry Me<sub>2</sub>CO, and filtered. The  
filtrate was brought to boiling, and 2-3-fold of hot H<sub>2</sub>O was  
added. After cooling bright-orange crystals of 4,2',4',6'-tetra-  
hydroxychalcone 6'β-D-glucopyranoside (C<sub>21</sub>H<sub>22</sub>O<sub>10</sub>, m. 171-3°)  
were formed. This substance was identified as isosalipurposide.

J. Smydzuk

8B

REEL/FRAME

19741276

USSR

UDC: 911.3.616.9-022.39(470)

KOMPANTSEV, N. F., SLESARENKO, V. V., MERKOVA, A. M.

"Long-range Plans for Eradicating Individual Zoonotic Infections (Brucellosis, Anthrax, and Tularemia) in USSR Territory"

V sb. Materialy XV Vses. S'ezda Epidemiologov, Mikrobiologov i infektzionev, tezisov dokl. Ch. I (Proceedings of the 15th All Union Conference of Epidemiologists, Microbiologists and Specialists in Infectious Disease, Thesis Report Part I -- collection of works) Moscow, 1970, pp 114-115 (from RZh-Meditsinskaya geografiya, No 1, Jan 71, Abstract No 1.36.82)

[No abstract]

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USSR

UDC: 621.371.25

ALIMOV, V. A. and KOMRAKOV, G. P., Radiophysics Research Institute

"Scattered Signal Fading During the  $F_{sp}$  Phenomenon in the Ionosphere"

Gor'kiy, Izvestiya VUZ--Radiofizika, No 10, 1972, pp 1581-1583

Abstract: The  $F_{sp}$  or F-spread phenomenon refers to the situation in which a sounding pulse reflected from the F-region of the ionosphere is of much longer duration than the pulse itself. Because earlier experiments investigating this phenomenon suffered from errors, the authors propose their own observations of  $F_{sp}$ , made on March 1971, at the vertical ionosphere sounding station in Zimenkakh. In these observations, pulses with a repetition frequency of 50 Hz and a duration of 100  $\mu$ s were used for the soundings, and the receiver had a band width of 30 kHz. The scattered signal was observed on an A-scan oscillograph. Curves are given of typical amplitude distributions for the pulse leading edge and middle of the scattered signal, and are found to be in close agreement with those of Hagakami. The authors express their gratitude to L. M. Yerukhimov for his attention to the work, and to N. A. Bakovina for her assistance in preparing the experimental material.

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USSR

UDC: 551.510.535

BENEDIKTOV, Ye. A., GRISHKEVICH, L. V., IVANOV, V. A., and  
KOMRAKOV, G. P.

"Some Statistical Characteristics of Signals Partially Reflected  
from the D Region of the Ionosphere"

Gor'kiy, Izvestiya VUZ -- Radiofizika, vol 15, No 4, 1972, pp 504-  
509

Abstract: This paper offers experimentally obtained information regarding the statistical characteristics of partially reflected radio waves and its possible interpretation through a model of "frozen" heterogeneities moving in a horizontal direction. The experimental equipment consisted of a transmitter operating on a frequency of 5.75 MHz, with a pulse power of the order of 750 kW and a pulse width of 50  $\mu$ s repeated at a 50-Hz rate. A four half-wave dipole, the antenna had a directional diagram of about  $56^\circ$  by  $56^\circ$  at a half-power level and was linearly polarized. The receiver antenna consisted of 36 pairs of crossed dipoles and had a  $12^\circ$  by  $12^\circ$  diagram, and was capable of picking up signals with linear and circular polarization. Auxiliary receiver antennas were also used. Experimental runs were made on separate days in the spring of 1970 and were repeated in March of 1971. Processing  
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