

PROCESSING DATE--02OCT70

UNCLASSIFIED

2/2 021
CIRC ACCESSION NO--AP0106911
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE REACTION OF H(O)P(S)(SH)
SUBN DET (POLY(ALKYLENE GLYCOL DITHIOPHOSPHATES)) (I) WITH 30PERCENT
P(O)R PRIME) SUB3 (WHERE R PRIME EQUALS ME, ET, ISO, PR, BU, ISO, BU, AND C
SUB5 H SUB11) WAS EXOTHERMIC AND GAVE THE H(O)P(S)(SR PRIME) SUBN DET
(II) CONTG. 10.0-16.3PERCENT P. AN ABSORPTION BAND AT 670 CM PRIME
NEGATIVE1 (WHICH MAY BE ASSIGNED TO VIBRATIONS OF P=S GROUPS) SUGGESTED
THAT A THIONE THIOL ISOMERIZATION MAY HAVE OCCURRED IN THE OLIGOMERIC
UNIT DURING TRANSESTERIFICATION. THE REACTION OF I AND II WITH NH SUB3,
RNH SUB2, R SUB2 NH, AND R SUB3 N (WHERE R IS ALKYL) WAS ALSO STUDIED.
I DISSOLVED IN DIOXANE GAVE WITH NH SUB3 (IN THE COLD) AN AMMONIUM SALT
WHICH COULD BE TREATED WITH R PRIME BR TO GIVE II. RNH SUB2, R SUB2
NH, AND R SUB3 N REACTED WITH II TO GIVE COMPLEXES.

UNCLASSIFIED

1/2 022

UNCLASSIFIED
TITLE—DIACETYLENE DERIVATIVES. 17. SPECTRAL STUDY OF THE MULTIPLE EFFECT
OF HETEROATOMS AND MULTIPLE BONDS IN ENYNE SYSTEMS -U-

AUTHOR—(04)—SHERGINA, N.I., GOLOVANOVA, N.I., NIKOLSKAYA, A.N., VOLKOV,
A.N.
COUNTRY OF INFO—USSR

SOURCE—IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 546-9

DATE PUBLISHED—70

SUBJECT AREAS—CHEMISTRY

TOPIC TAGS—ACETYLENE HYDROCARBON, IR SPECTRUM, UV SPECTRUM, CONJUGATE
BOND SYSTEM, CYCLIC GROUP

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—2000/0740

STEP NO—UR/0062/70/000/003/0546/0549

CIRC ACCESSION NO—AP0124410

UNCLASSIFIED

PROCESSING DATE--30OCT71

UNCLASSIFIED

2/2 022
CIRC ACCESSION NO--AP0124410
ABSTRACT/EXTRACT--(U) GP-0-
FOR. SHOWN ON MICROFICHE.
THESE COMPS. IS REFLECTED
ELECTRONIC CONJUGATION AND
IRKUTSK. INST. ORG. KHIM.,

ABSTRACT. IR AND UV SPECTRA WERE REPORTED
GENERALLY THE NATURE OF THE HETERO ATOM IN
IN THE ETHYLENE BANDS, INVOLVING BOTH
THE INDUCTIVE EFFECT.
IRKUTSK, USSR.

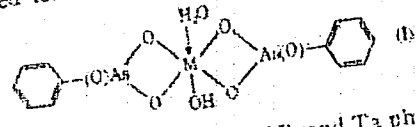
FACILITY:

UNCLASSIFIED

Acc. No. **AP0048936** Abstracting Service: CHEMICAL ABST. 5/70

Ref. Code: **4R 0075**

104501s Reaction of niobium and tantalum with phenylarsonic acid. Tsvkhanskii, V. D.; Nazarenko, V. A.; Shestina, N. G.; Komusova, V. G. (Inst. Geochem., Irkutsk, USSR). Zh. Anal. Khim. 1970, 25(1), 9-102 (Russ). When Nb and Ta phenylarsonates are formed under conditions eliminating the hydrolysis of the metal ions, the ppt. has a compn. corresponding to the formula I. In practice, when the pptn. is carried out by heating the solus. the ppt. has a compn. corresponding to the formula I. In practice, when the pptn. is carried out by heating the solus. the ppts. are contaminated with hydrolysis products, esp. when the concns. of the substances eliminating the hydrolysis are insufficient. The coordinating Nb and Ta ions in their phenylarsonates are the 4 charged M(OH)⁺ cations and the coordinated ions are the doubly charged anions of phenyl-



arsonic acid. The soly. products for Nb and Ta phenylarsonates are 8.02×10^{-47} and 7.54×10^{-47} , resp. (ionic strength = 1.0, $25 \pm 1^\circ$). Chaim Weiner

7 nt

REEL/FRAME
19800708

1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--STRUCTURE OF PRODUCTS OF P,P PRIME, DIALKOXYDIPHENYLALKANE
ACETYLATION -U-
AUTHOR-(04)-ZANINA, A.S., ALT, L.YA., SHERGINA, S.I., KOTLVAREVSKIY, I.L.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 459-61
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--NMR SPECTRUM, MOLECULAR STRUCTURE, ALKOXIDE, BENZENE
DERIVATIVE, CCYCLOALKANE HYDROCARBON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0843 STEP NO--UR/0062/70/000/002/0459/0461
CIRC ACCESSION NO--AP0119747
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 009

CIRC ACCESSION NO--AP0119747

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

ABSTRACT. ACETYLATION OF ((RO)C SUB6 H SUB4)

SUB2 Z (I) WITH ACCL,ALCL SUB3 RESULTED IN DEALKYLATION OF THE STARTING

MATERIAL AND ENTRY OF THE AC GROUP IN THE POSITION ORTHO TO THE HO.

ALKYLATION OF I WITH ALKYL HALIDES GAVE DIALKOXY COMPOS. AS WELL AS

HYDROXY,ALKOXY ANALOGS. THE CONCLUSIONS WERE MADE FROM AN NMR STUDY OF

THE PRODUCTS OF SUCH REACTIONS IN WHICH Z EQUALS CH SUB2 CH SUB2 OR CME

SUB2, WHILE R WAS H, ME, ET, OR PR. NMR SPECTRAL CURVES FOR SUCH

PRODUCTS AS ME SUB2 C(C SUB6 H SUB3 AC(OH),3,4)(C SUB6 H SUB3

AC(OME),3,4) AND ME SUB2 C(C SUB6 H SUB3 AC(OME),3,4) SUB2 WERE SHOWN.

FACILITY: INST. KHIM. KINET. GORENIVA, NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC 621.372.25

SEREERYANKOVA, V. G. and SHERGINA, Z. A.

"Results from a Study of the Conditions for the Propagation of Meter Waves over Distances of 640, 440, and 280 km"

Moscow, Elektrosvyaz', No 11, 1970, pp 23-27

Abstract: Measurements of signal level at 40.3 Mc on radio links 280, 440, and 640 km long show that the received signal is determined either by ionospheric scattering or by long-distance tropospheric propagation depending on the spacing and hanger height of the antennas. The tropospheric signal component is the main contributory factor when using high antennas ($h_a \approx 30m$) at distances up to 450 - 500 km. The ionospheric component of the signal plays a significant role at a distance of 440 km only if low antennas are used, but is significant both in the case of high and low antennas at a distance of 640 km. The authors thank M. M. Shumskaya for her assistance. Original article: six figures, three tables, and four bibliographic entries.

1/1

- 41 -

USSR

UDC 621.38.002

GARYAINOV, S.A., RZHANOV, V.G., ~~SHERGOL'D, YE. K.~~

"Problems Of Protection Of Unhoused Semiconductor Devices And Integrated Circuits"

V sb. Mikroelektronika (Microelectronics--Collection Of Works), Moscow, Izd-vo "Sovetskoye Radio," No 4, 1971, pp 141-151

Abstract: The over-all problem is considered of the protection of non-housed semiconductor devices used in hybrid microcircuits from the effect of the environment. The significant shortcomings are shown of compounds of epoxy resins, various varnishes, etc., used at present for protection of such devices. A method is described for creation of a protective covering based on thin glass films. 4 fig. 4 tab. 7 ref.

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1/2 025 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--TRIALS OF METHYLNITROPHOS FOR TREATMENT OF WATER RESERVOIRS AGAINST
LARVAE OF CULEX PIPIENS IN MOSCOW -U-
AUTHOR--(02)-OKTYABRSKAYA, T.A., SHERINA, L.N.
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYE BOLEZNI, 1970, VOL 39,
NR 1, PP 59-62
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--INSECT CONTROL, MOSQUITO, ORGANIC PHOSPHOROUS INSECTICIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/1955 STEP NO--UR/0358/70/039/001/0059/0062
CIRC ACCESSION NO--AP0103676
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103676

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. RESULTS OF TESTS OF 30PERCENT CONCENTRATED EMULSION OF METHYLNITROPHOS (SUMITION) AGAINST LARVAE OF CULEX PIPIENS MOSQUITOES IN WATER RESERVOIRS OF TWO TYPES: DITCHES AND MARSHES: FILTRATION FIELDS AND BIOLOGICAL PONDS OF LOCAL CANALIZATION, ARE PRESENTED. THE CONCENTRATE WAS READILY MIXED WITH WATER AND FORMED A STABLE EMULSION. METHYL NITROPHOS PRODUCES AN ACUTE TOXIC EFFECT (MAJORITY OF LARVAE DIE WITHIN 2 TO 3 HOURS). THE EFFECTIVE DOSE OF THE DRUG DEPENDS ON THE EXTENT OF GROWTH AND DEPTH OF THE WATER RESERVOIR AS WELL AS ON THE INSTAR OF LARVAE. IN SHALLOW WATER RESERVOIRS A DOSE OF 300 TO 600 G-HECTAR OF 30PERCENT DRUG (DEPENDING ON THE GROWTH) IS RECOMMENDED FOR LARVAE OF CULEX PIPIENS OF I-II INSTAR. FOR DEEP WATER RESERVOIRS THE DOSE SHOULD BE 600 TO 1500 G-HECTAR. FOR LARVAE OF III TO IV INSTARS THE DOSES SHOULD BE 600 TO 1200 AND 1500 TO 3000 G-HECTAR, RESPECTIVELY. BEFORE TREATMENT IT IS RECOMMENDED TO MOW DOWN THE VEGETATION ON THE BANK OR TO TREAT THE WATER RESERVOIR WITH HIGHER EXPEDITURE OF THE WORKING FLUID WITHOUT INCREASING THE DOSE OF THE DRUG. AS A RESULT OF USING SMALL DOSES (300 G-HECTAR) THE USEFUL BIOFAUNA OF WATER RESERVOIRS DOES NOT DIE. INCREASING THE DOSE TO 1500 G-HECTAR CAUSES ITS PARTIAL DEATH, AND FURTHER INCREASE (ABOVE 3000 G-HECTAR) RESULTS IN A COMPLETE STERILIZATION OF THE WATER RESERVOIR. THEREFORE IT IS RECOMMENDED TO CARRY OUT TREATMENTS AGAINST LARVAE OF I TO II INSTARS. REPEATED HABITATION OF WATER RESERVOIRS OCCURS IN 6 TO 7 DAYS IRRESPECTIVE OF THE DOSE OF THE DRUG USED.

UNCLASSIFIED

Acc. Nr: AP0101144

Ref. Code: UR0297

PRIMARY SOURCE: Antibiotiki, 1970, Vbl 15, Nr. 3, pp 247-250

ON THE PROBLEM OF ANTIBIOTIC RESISTANCE TRANSFERENCE

S. I. Sherishorina, B. A. Shenderov

Saratov Medical Institute

A possibility of resistance transference to levomycetin, tetracycline and neomycins from Zonne and Flexner dysentery bacteria, isolated in the Saratov region, to Coli bacteria during conjugation was shown. The rate of the transference depended on both the contact time and the individual peculiarities of the parent cultures used in the experiments. The feature of resistance to neomycins was not linked to the features of resistance to tetracycline and levomycetin and its presence suppressed the transference of the latter.

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REEL/FRAME
19850770

6

1/2 007 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--CATALYTIC PROPERTIES OF CYTOCHROME C, ADSORBED ON SILICA GEL AND
LIPID SURFACES -U-
AUTHOR-(02)-SHERIYEV, A.V., POLTORAK, D.M.

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11(1), 18-21

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CATALYSIS, SILICA GEL, CHOLESTEROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0249

STEP NO--UR/0139/70/011/001/0018/0021

CIRC ACCESSION NO--AP0120939

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP012G939
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE CATALYTIC PROPERTIES OF
CYTOCHROME C ADSORBED ON DIFFERENT SURFACES WERE STUDIED. THE RELATIVE
ACTIVITIES, CONST. OF PAIR INTERACTIONS AND K SUBML WERE CALCD. THE
GREATEST ACTIVITY OF CYTOCHROME C WAS FOUND WHEN ADSORBED ON SID SUB2
CHOLESTEROL.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

1/2 032
TITLE--CAST IRON -U-

AUTHOR-(03)-SHERMAN, A.D., VAKUSHIN, N.N., ABRAMENKO, YU.E.

COUNTRY OF INFO--USSR

5

SOURCE--U.S.S.R. 263,890

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CAST IRON, CHEMICAL PATENT, CHEMICAL COMPOSITION, CARBON,
SILICON, MANGANESE, COPPER, PHOSPHORUS, ALUMINUM, CHROMIUM, BORON, IRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1832

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

CIRC ACCESSION NO--AA0132097

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0132097

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CAST IRON WITH IMPROVED MECH.
PROPERTIES AND BETTER TECHNOL. PROPERTIES HAS THE FOLLOWING COMPN.: C
2.8-4.0, SI 2.0-3.5, MN 7.0-12, CU 1.5-3.0, P 0.5-0.8, AL 1-2.5, CR
1.5-3.0, B 0.1-0.5PERCENT, AND FE THE REMAINDER. FACILITY:
MOSKOVSKIY DVAZHDY ORDENA LENINA I ORDENA TRUDOVOGO KRASNOGO ZNAMENI
AVTOMOBIL'NYY ZAVOD IM. I. A. LIKHACHEVA.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--SEX AND CONGENITAL DISEASES OF THE HEART -U-
AUTHOR--(02)--GEODAKYAN, V.A., SHERMAN, A.L.
COUNTRY OF INFO--USSR
SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 2, PP
18-23
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HEART DISEASE, REPRODUCTIVE SYSTEM, DIAGNOSTIC MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/0195 STEP NO--UR/0481/70/000/002/0018/0023
CIRC ACCESSION NO--AP0108519
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0108519

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

ABSTRACT. ON THE STRENGTH OF CONCEPTIONS OF THE BIOLOGICAL ROLE OF SEXUAL DIFFERENTIATION IN THE EVOLUTIONARY CHANGES OF POPULATIONS A HYPOTHESIS IS ADVANCED ON THE RATIO OF SEXES WITH CONGENITAL DISEASES OF THE HEART AND MAJOR BLOOD VESSELS. ACCORDING TO THIS HYPOTHESIS DEFECTS FROM WHICH SUFFER MOSTLY MALE PATIENTS ARE ACQUIRED, UNFAVOURABLE TESTS OF EVOLUTION, DEFECTS OF FEMALES ARE MOSTLY RETURN TO ONTO AND PHILOGENETIC PAST. STATISTICAL MATERIAL, OVER 26,000 CASES WITH 22 CONGENITAL HEART DEFECTS, CONFIRM ALMOST COMPLETELY THE ABOVE HYPOTHESIS. THIS HYPOTHESIS PERMITS TO EXPLAIN FACTS WHICH DID NOT COINCIDE WITH THE ACCEPTED CONCEPTIONS OF GENESIS OF CONGENITAL HEART DEFECTS BY ROKITANSKY, SPITZER, L. D. KRYMSKY. AN APPLIED ASPECT OF CONCEPTIONS, THE SIGNIFICANCE OF SEX AS A DIGNOSTIC SIGN OF CONGENITAL HEART DEFECTS IS DISCUSSED.

FACILITY: INSTITUT OBSHCHEY GENETIKI AN SSSR AND INSTITUT KHIRURGII IM. A. V. VISHNEVSKOGO AMN SSSR, MOSCOW.

UNCLASSIFIED

USSR

SHERMAN, E. B.

"One Method of Solving Multiproduct Production and Transportation Models"

Nauch. tr. Mosk. In-t nar. Kh-va [Scientific Works of Moscow Institute of the Economy], 1972, No 101, pp 151-158 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V714 by Yu. Finkel'shetyn).

Translation: A multiproduct production-transport model, broadly used at the present time in the practice of optimization of branch prospective planning, is studied. This model, without basic changes, but rather only with increases in dimensionality, can easily contain conditions allowing the dynamics of the processes studied to be considered, as well as transport expenditures for deliveries not only of finished products, but of basic types of raw materials, semimanufactured goods, etc. Thus, the discussion concerns not one but rather an entire set of multiproduct production-transport models. From the formal point of view, all models in this set are problems of partial integer linear programming with Boolean variables. In spite of the great practical importance of problems of this type, no satisfactory methods for their solution have yet been developed. This is explained both by general difficulties in doing numerical solution of integer problems and by the great dimensionality of models

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USSR

SHERMAN, E. B., Nauch. tr. Mosk. In-t nar. Kh-va, 1972, No 101, pp 151-158.
of this class. For example, the model of development and displacement of a moderate-sized branch, producing 10 large groups of products at 20 active and new enterprises, each of which has an average of 4 versions of possible development, delivering products to 25 large economic regions of the country, presents a problem in integer linear programming with more than 5,000 variables and almost 500 limitations. In practical calculations, the so-called two-stage (approximate) method of solution is most common. It can be successfully used only for a very narrow range of labor-consuming branches of machine building, producing highly portable products. The author suggests an iterative method, also yielding an approximate solution to the multiproduct production-transport problem. However, this method does not have many of the shortcomings of the two-stage method, and the area of its effective application is significantly broader. There is no information on the solution of practical problems or machine experiments.

2/2

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--CONFORMATION FEATURES OF PEPTIDE FRAGMENTS CONTAINING PROLINE
RESIDUES -U-

AUTHOR--(04)--GALAKTIONOV, S.G., SHERMAN, S.A., KIRNARSKIY, L.I.,
NIKIFOROVICH, G.V.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(3), 236-9

S

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEPTIDE, FRACTIONATION, PROLINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3003/0883

STEP NO--UR/0250/70/014/003/0236/0239

CIRC ACCESSION NO--AT0129952

UNCLASSIFIED

003
CIRC ACCESSION NO--AT0129952

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY USING A MORE COMPACT MATH.
EXPRESSION THAN USUALLY EMPLOYED, THE CONFORMATIONAL FEATURES OF 2 TYPES
OF MOL'S. CONTG. PROLINE RESIDUES WERE MAPPED USING EXISTING DATA FOR THE
MATRIX APP. OF EYRING.
MINSK, USSR.

FACILITY: INST. TEPLO-MASSOOBMENA,

UNCLASSIFIED

USSR

UDC 548.5:531.717

IOFFE, Ya. I., SMUSHKOV, I. V., and SHERMAN, Yu. I., All-Union Scientific Research Institute of Single Crystals

"Device for Measuring the Diameter of Single Crystals During Growing"

Moscow, Zavodskaya Laboratoriya, No 2, 1971, pp 239-240

Abstract: A device developed at the All-Union Scientific Research Institute of Single Crystals for measuring the diameter of single crystals during growing is described. The measuring technique, based on photographic recording of the dislocation of a bright edge on the side of the crystal opposite the illuminated side, is discussed with reference to the optical diagram of the photorecorder. Whereas the generally used visual measuring method has an accuracy which does not exceed ± 10 mm, the present method is accurate to 0.5 mm.

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USSR

UDC 621.376.2(088.8)

SKORIK, YE. T., SHERMAREVICH, V. G., and BUTYRINA, L. A.

"A Channel Modulator With Single Sideband Suppression"

USSR Author's Certificate No 282463, filed 2 Jun 69, published 18 Dec 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D312 P)

Translation: A channel modulator with single sideband suppression is proposed. The device contains a 3-DB power divider, switching diodes which are connected to the output arms of the divider, and an adder. The width of the passband is increased by making the 3-DB adder in the form of a directional coupler. V. P.

1/1

- 140 -

1/2 045

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--EFFECT OF AUSTENITIC GRAIN SIZE AND TEMPERING TEMPERATURES ON THE COLD BRITTLENESS OF STEEL -U-

AUTHOR--(03)-SHERMAZAN, I.V., ZELENVA, V.D., GULYAYEV, A.P.

COUNTRY OF INFO--USSR

5

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (3), 23-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GRAIN SIZE, METAL BRITTLENESS, ALLOY DESIGNATION, ELECTRON MICROSCOPY, ALLOY COMPOSITION, IMPACT STRENGTH, MATERIAL FRACTURE, AUSTENITE, STEEL TEMPERING, LOW TEMPERATURE METAL, LOW TEMPERATURE EFFECT/(U)40KH CHROMIUM STEEL, (U)25KHGT CHROMIUM STEEL, (U)12KH2N4 CHROMIUM NICKEL STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0129/70/000/003/0023/0027

PROXY REEL/FRA--1997/0014

CIRC ACCESSION NO--AP0119010

UNCLASSIFIED

2/2 045

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119010

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE STUDY WAS CARRIED OUT BY MEANS OF THE ELECTRON MICROSCOPE METHOD DESCRIBED BY G., ET AL. (1966). STEELS 12KH2N4, 25KHGT, AND 40KH (C 0.13, 0.25, 0.33; MN 0.60, 0.94, 0.58; SI 0.20, 0.22, 0.30; CR 1.46, 1.0, 0.98; NI 3.60, -, -, S 0.014, 0.014, 0.019; AND P 0.026, 0.026, 0.025 WT. PERCENT) WERE GIVEN VARIOUS KINDS OF TREATMENTS: (1) QUENCHED FROM 850DEGREES, (2) QUENCHED FROM 1200DEGREES, (3) TEMPERED AT 180DEGREES, (4) TEMPERED AT 500DEGREES. THEREAFTER IMPACT STRENGTH WAS DETD. AND FRACTURES WERE STUDIED UNDER ELECTRON MICROSCOPE AND THE ULTIMATE COLD BRITTLENESS WAS DETD. FOR LOW TEMP. TEMPERED STEELS BY OBSERVING THE APPEARANCE OF BRITTLE COMPONENT IN THE FRACTURE. WITH HIGH TEMP. TEMPERED STEELS THE ULTIMATE COLD BRITTLENESS WAS DETD. BY THE AMT. OF FIBERS IN THE FRACTURE. FRAGMENTATION OF GRAINS LOWERED THE COLD BRITTLENESS, WHILE THE TEMP. OF TEMPERING HAD NO EFFECT.

UNCLASSIFIED

1/2 032

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--COLD BRITTLENESS OF STEELS USED FOR AUTOMOBILE CHASIS -U-

AUTHOR--CHECHEKIN, YU.F., ZELENVA, V.D., NABATOVA, K.A., SHERMAZAN, I.V.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL 1970, (2), 5-8

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--IMPACT STRENGTH, CRACK PROPAGATION, METAL BRITTLENESS, HOT ROLLING, MANGANESE STEEL/(U)10G2B MANGANESE STEEL, (U)15GYUT LOW ALLOY STEEL, (U)12G2AF LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1988/1308

STEP NO--UR/0129/70/000/002/0005/0008

CIRC ACCESSION NO--AP0106085

UNCLASSIFIED

CIRC ACCESSION NO--AP0106085
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT. STEELS 12G2AF, 15GYUT, 10G2B, AND 30T WERE STUDIED UNDER 2 STRUCTURAL CONDITIONS: (1) FOLLOWING NORMALIZING AT 910DEGREES, GRAIN SIZE MARK 10-11; (2) IN THE HOT ROLLED STATE, TEMP. OF FINAL ROLLING 880-910DEGREES, GRAIN SIZE MARK 8, SIGMA EQUALS 53-6 KG-MM PRIME2. OVERALL IMPACT FUNCTIONS, TAKEN FROM THE COMPONENTS ONSET AND CRACK PROPAGATION FUNCTIONS, WERE INDEXED FOR ALL OF THE STEELS. A METHOD OF INDEXING BASED ON DETG. THE VALUE OF IMPACT STRENGTH AT TEMP. BELOW THE THRESHOLD OF COLD BRITTLENESS WAS APPLIED. THE HIGHEST ONSET AND CRACK PROPAGATION FUNCTIONS WERE OBSD. IN STEELS 12G2AF AND 15GYUT. ELECTRON MICROSCOPIC ANAL. DETD. NOT ONLY THE COLD BRITTLENESS THRESHOLD BUT ALSO THE PECULIAR FINE STRUCTURE OF THE FRACTURE. A MICROFRACTOGRAPH OF THE VISCIOUS FRACTURE OF STEEL 12G2AF IN THE HOT ROLLED AND IN THE NORMALIZED STATES IS SHOWN. IN THE AREA OF DUCTILE FRACTURE, A DIFFERENT DISPERSION OF THE CUP SHAPED STRUCTURE WITH DEPENDENCE ON HEAT TREATMENT WAS OBSD. STEELS IN THE NORMALIZED STATE DISPLAYED MORE DISPERSION OF THE CUP SHAPE STRUCTURE THAN IN THE HOT ROLLED AND ANNEALED STATE.

UNCLASSIFIED

USSR

UDC 620.187

ZELENOVA, V. D., SHERMAZAN, I. V.

"Electron Microscope Method of Quantitative Determination of the Viscous Component in a Fracture"

Moscow, Zavodskaya Laboratoriya, No 12, 1972, pp 1477-1479.

Abstract: It is suggested that the percentage of the viscous component in a fracture be determined by statistical processing of the data from electron microscope studies. The confidence interval of the deviation from the arithmetic mean value of the percentage of the viscous component for three specimens with a reliability of 0.95 was found to be $\pm 5.2\%$.

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- 64 -

AA0039854

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UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-70

237633 REMOVAL OF SCALE or dense oxide layers from a plurality of relatively small articles made of ferrous metals or copper alloys, is carried out by immersing the articles in an aqueous medium containing 2.5-5% of HCl, 1.5% of an emulsifier (OP-7 or OP-10), and 10-20% of polishing grains (e.g. white electrocorundum), at room temperature, and applying mechanical vibrations for 15-40 mins. The weight ratio of articles: liquid is 1:2. The scale is effectively and rapidly removed. 6.6.67. as 1161895/25-8. E.S. BLAGODETELEVA et alia. (16.6.69.) Bul.8/12.2.69. Class 67a. Int.Cl. B24d.

LD
18

AUTHORS: Blagodeteleva, Ye. S.; Shermazanov, G. I. K.; Kozlov, A. Ye.; Antonyuk, Yu. K.; Solodkin, L. A. and Tikhonov, V. Yu.

19741244

USSR

UDC 669.712

YEFIMOVSKAYA, T. V., LANIN, A. A., SHERMAZANYAN, YA. T., SHAKHPARPNYAN, V. V. SHEKOYAN, M. G., and SMOKOVDINA, G. S., All-Union Order of the Labor Red Banner Scientific Research, Planning, Design, and Technological Institute of Sources of Current (VNIIT)

"Utilization of a High-Temperature Solar Installation for the Study of High-Melting Materials in an Oxidizing Medium (on the Basis of the Example of beta-Alumina)"

Yerevan, Izvestiya Akademii Nauk Armyanskoy SSR, Seriya Tekhnicheskikh Nauk, Vol 26, No 4, 1973, pp 3-7

Abstract: Experimental research has been conducted by the Armenian Department of the VNIIT in Yerevan, on the thermal dissociation of sodium and potassium beta-alumina in a high-temperature solar heating installation for the purpose of obtaining a solid electrolyte. Results of this research have demonstrated considerable stability of the beta-alumina under conditions of radiant heating in air: beta-alumina does not dissociate completely with an exposure of up to 30 minutes at the melting point (2,000-2050°C. Sodium beta-alumina is considerably less subject to dissociation than is potassium beta-aluminum. 1 figure. 1 table. 2 references.

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USSR

IVANOVA, V. S., KOP'YEV, I. M., BOTVINA, L. R., and SHERMERGER, T. D.

Uprochneniye metallov voloknami (Strengthening Metals with Filaments), Moscow, "Nauka," 1973, 206 pp

Translation of Annotation: The book summarizes the results of experimental investigations and examines theoretical questions. Coefficients are calculated for elasticity in heterogeneous systems, features are shown of deformation and breakdown of composite materials and of the performance of these materials and of the performance of these materials in static, cyclic, and dynamic load conditions. The technology for producing composite materials is considered. The book is intended for researchers and practical workers -- metallurgists, technical engineers, technology innovators, and students at machine building and metallurgical institutions of higher learning. There are 27 tables, 137 illustrations, and 333 bibliographical citations.

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USSR

S
SHERMAZANYAN, YA. T., TARNIZHEVSKIY, B. V., GRIGORYAN, R. S., NERSISYAN, I. A.,
RODICHEV, B. YA.

"A Device for Supplying Powers to Equipment From a Solar Battery with Photo-voltaic Cells"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 18, 1970, Author's Certificate No 271619, Filed 25 Jan 68, p 46

Abstract: This author's certificate introduces a device for powering equip-ment from a solar battery with photovoltaic cells. The device contains a commutator for connecting the load to the battery. As a distinguishing fea- ture of the patent, the reliability of the device is improved by using relays and power pickups in the commutator with their contacts connected in the relay coil circuits. The contacts of the elements divide the solar battery into several sections, each of which is connected to each piece of equipment through the contacts of this relay.

USSR

IVANOVA, V. S., et al., Strengthening Metals with Filaments, Moscow, "Nauka," 1973, 206 pp

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IVANOV, V. S., et al., Strengthening Metals with Filaments, Mosccw, "Nauka," 1973, 206 pp

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IVANOVA, V. S., et al., Strengthening Metals with Filaments, Moscow, "Nauka," 1973, 206 pp

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IVANOVA, V. S., et al., Strengthening Metals with Filaments, Moscow, "Nauka," 1973, 206 pp

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1/2 036 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--INTERGRANULAR THERMAL RELAXATION IN HETEROGENEOUS MEDIA -U-
AUTHOR--(02)-FOKIN, A.G., SHERMERGER, T.D. S
COUNTRY OF INFO--USSR
SOURCE--KIEV, AN UKR SSR, PRIKLADNAYA MEKHANIKA, VOL 6, NO 1, 1970, PP
10-16
DATE PUBLISHED----- 70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--THERMOELASTICITY, STRESS RELAXATION, INTERNAL FRICTION,
POLYCRYSTAL, CRYSTAL DEFORMATION, CALCULATION, YIELD STRESS, THERMAL
EXPANSION, THERMAL CONDUCTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
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CIRC ACCESSION NO--AP0103903
UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0103903

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYSTEM OF THERMOELASTICITY EQUATIONS IN TERMS OF STRESSES AND STRAINS IS USED IN DETERMINING THE EFFECTIVE VALUES OF THE YIELD, THERMAL EXPANSION, AND THERMAL CONDUCTIVITY AND CAPACITY TENSORS. THESE EFFECTIVE VALUES CONTAIN QUASI STATIC CORRELATION CORRECTIONS, AS WELL AS FREQUENCY DEPENDENT DYNAMIC CORRELATION ADDITIONS. THE RESULTS OBTAINED ARE USED IN DETERMINING THE INTERCRYSTALLINE THERMOELASTIC FRICTION CAUSED BY THERMAL FLUXES BETWEEN DIFFERENTLY DEFORMED CRYSTALS OF COMPOSITE NONTEXTURED MATERIALS. IT IS SHOWN BY NUMERICAL CALCULATIONS THAT THIS METHOD GIVES INTERNAL FRICTION VALUES WHICH ARE HIGHER THAN THOSE OBTAINED BY USING A DIFFERENT APPROACH. A COMPARISON OF THEORETICAL RESULTS WITH EXPERIMENTAL DATA FOR POLYCRYSTALLINE MATERIALS SHOWS THAT IN MANY CASES BETTER RESULTS ARE OBTAINED IF THE KARMAN CORRELATION FUNCTION IS USED.

UNCLASSIFIED

SHERMERGOR, T. D.

RMW / R.960 / 5-960-115
Dec 72 107

XIII. PROPERTIES OF COMPOSITE MATERIALS

Shermergor, T. D., and V. N. Dolinn.
Rheological characteristics of orthotropically-
reinforced polymers. MP, no. 2, 1972, 276-283.

A model is developed for the rheological characteristics of orthotropically-reinforced polymers based on calculations of experimental values for elastic and rheological properties of individual components. This approach allows a drastic reduction in the number of parameters necessary for a complete specification of the anisotropy of elastic and rheological properties of composite materials. The orthotropic material is assumed to consist of anisotropic grains randomly oriented along the x-y-z axes. Each grain has a lamellar structure with alternating elastic and viscoelastic layers. The degree of anisotropy and the viscoelastic properties of the composite material can be varied to a large extent by a suitable choice of ten parameters (four elastic moduli, four concentration coefficients, and two rheological characteristics). Parameters of individual components are used to compute the rheological characteristics of the composite material either in the Foygt (sic) or Royce approximation. The authors point out that Foygt's method (based on the homogeneity of the microdeformation hypothesis) is useful for the determination of operators of elasticity and shear moduli, while the Royce approximation (the homogeneity of the microtension hypothesis) gives a simplified form of Young's modulus and Poisson's coefficients. Using the Royce approximation method, pliability matrices are derived for a viscoelastic composite in operator form and operator representations of 12 technical elastic moduli. Due to the orthotropic symmetry of the material, only 9 of these are independent. It is shown that each of the elastic moduli is represented by two real or complex resolvent Q_e operators. The contributions of Young's moduli components are calculated for various concentrations and anisotropies, and conditions determined for discarding one of the Q_e operators. For a complex exponential Q_e operator with a

USSR

UDC: 621.396.6-181.5

SHERMERGOR, T. D., BARYSHIKOV, V. G.

"Thermoelastic Constants of Heterogeneous Materials"

Sb. nauch. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collected Scientific Works on Problems of Microelectronics. Moscow Institute of Electronic Technology), 1970, vyp. 5, pp 19-26 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V183)

Translation: The authors calculate the effective coefficient of thermal stresses in heterogeneous materials. The method of repeated normalizations of the equations of thermoelasticity is used in the computation. A sum is found for a series in the theory of renormalizations in the approximation of localizability. A simple formula for the macroscopic coefficient of thermal stresses is found for a two-component medium. The formula may be used in engineering calculations for the design of microcircuits and large-scale integration, as well as for other microelectronic devices which contain elements differing in thermoelastic properties. Resumé.

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USSR

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UDC 539.389

FOKIN, A. G. and ~~SHERMERGOR~~, T. D. (Moscow)

"Intergranular Thermal Relaxation in Heterogeneous Media"

Kiev, AN UkrSSR, Prikladnaya mekhanika, Vol 6, No 1, 1970, pp 10-16

Abstract: The system of thermoelasticity equations in terms of stresses and strains is used in determining the effective values of the yield, thermal expansion, and thermal conductivity and capacity tensors. These effective values contain quasi-static correlation corrections, as well as frequency-dependent dynamic correlation additions. The results obtained are used in determining the intercrystalline thermoelastic friction caused by thermal fluxes between differently deformed crystals of composite non-textured materials. It is shown by numerical calculations that this method gives internal-friction values which are higher than those obtained by using a different approach. A comparison of theoretical results with experimental data for polycrystalline materials shows that in many cases better results are obtained if the Karman correlation function is used. Orig. art. has: 1 figure, 30 formulas and 10 references.

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USSR

UDC 541.6:547.1'118

RAYEVSKIY, O. A., KHALITOV, F. G., DONSKAYA, YU. A., and SHERMERCORN, I. M.,
Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov Acad. Sc. USSR

"On the Conformations of Certain Chloromethylthiophosphinic Acid Chlorides"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 73, pp 795-800

Abstract: Results are reported on the study of spacial structures of the compounds with the general formula $RCIP(S)CH_2Cl$ where $R = Cl, C_2H_5, C_6H_5, p-ClC_6H_4,$ and CH_2Cl using IR spectroscopical and dipole moment methods. In solutions these compounds exist in an equilibrium of two conformers, one of which has the trans orientation of the P:S and C-Cl bonds. Analysis of intramolecular interactions has been carried out and related to the stabilization of the resulting spacial structures. It has been noted that replacement of a phosphoryl oxygen atom by an atom of sulfur has practically no effect on intramolecular interactions.

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USSR

UDC 547.434.661.718.1

GUSEVA, T. A., KOZLOV, L. M., and SHERMERCORN, I. M., Kazan' Veterinary
Institute Imeni N. E. Bauman

"Nitroalkyl Esters of Phosphorus Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 2, Feb 73, pp 292-295

Abstract: In searching for new, biologically active compounds, symmetrical and mixed dialkyl phosphites containing a nitrogroup in the aliphatic radical were obtained by condensing nitroalcohols with phosphorus trichloride or with alkyl dichlorophosphites. The dialkyl phosphites were then condensed with chloral yielding esters of the α -hydroxy- β , β , β -trichloroethylphosphonic acid -- analogs of chlorophos. Biological evaluation showed that introduction of a nitrogroup into an ester radical led to a loss of insecticidal potency.

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USSR

IVASYUK, N. V., et al, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971, pp 2199-2203

in the Eyring equation do not follow a detectable pattern. These data confirmed the presumed mechanism of hydrolysis via intramolecular substitution of SH anion for Cl atom of the chloromethyl radical. The elemental analysis data and some physical constants of I and II are tabulated and procedures of preparation and kinetic study are described.

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USSR

UDC 542.91 661.718.1

D'YAKONOVA, N. I., MUKHAMEDZANOVA, E. KH., SHEEMBERGORN, I. M.
Kazan' Institute of Veterinary Medicine imeni N. E. Bauman

"Organophosphorus Compounds with an α -Hydroxyalkyl and a Chloromethyl Radicals"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971,
pp 2203-2205

Abstract: In a search for biologically active compounds, a series of phosphine oxides and phosphinates were synthesized, which contained, simultaneously an α -hydroxyalkyl and chloromethyl radicals at the P atom. Bis-(chloromethyl) - α -hydroxyalkylphosphine oxides were obtained by the reaction of bis-(chloromethyl)- or (chloromethyl) ethyl-chlorophosphine with aldehydes or ketones and subsequent hydrolysis of intermediate products. Analogous reaction of (chloromethyl)phosphonous dichloride with benzaldehyde gave (chloromethyl)- α -hydroxybenzylphosphinic acid. Methyl (chloromethyl)- α -hydroxyalkylphosphinates were prepared by condensation of methyl (chloromethyl)hydrogenphosphate with aldehydes. The yields, elemental analysis data, and mp of the 1/1 products are tabulated and preparation procedures used are given.

USSR

UDC 547.241.07

IVASYUK, N. V., and SHERMERGORN, I. M., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov

"A Method of Making Derivatives of 1,3,5-Dithiaphosphorinane"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 284987, class 12, filed 5 Jul 69, published 29 Oct 70, pp 24-25

Translation: This Author's Certificate introduces: 1. A method of making derivatives of 1,3,5-dithiaphosphorinane. As a distinguishing feature of the patent, bis-(mercaptomethyl)phosphinic acid is allowed to react with an aldehyde or ketone in water with the application of heat followed by isolation of the product by conventional methods. 2. A modification of this procedure is distinguished by the fact that the process is carried out at the boiling temperature of the reaction mixture. 3. A modification of this method is distinguished by the fact that a mineral acid such as hydrochloric acid is used as a catalyst.

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USSR

UDC 541.127 + 542.938 + 661.718.1

BEL'SKIY, V. YE., IVASYUK, N. V., POVARENKINA, S. V., SHERMERGORN, I. M. Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Kinetics of the Hydrolysis of Bis-(chloromethyl)-thiophosphinic Acid"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 70, pp 1407-1409

Abstract: Aqueous and alkaline hydrolysis of bis-(chloromethyl)-thiophosphinic acid was studied in an attempt to elucidate the reaction mechanism. The hydrolysis was performed at 50-70°C. In the aqueous run the acid was titrated with KOH against the first appearance of phenolphthalein color. Analysis of kinetic data showed that the process occurs in two stages: First, one HCl molecule splits off rapidly, then another at a much slower rate; the first stage is a first order reaction. In alkaline hydrolysis HNO₃ was used for titration, the process occurring in one phase. In accordance with such kinetic rates the reaction mechanism con-
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USSR

BEL'SKIY, V. YE., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 70, pp 1407-1409

sists of a slow step in which the sulfur atom migrates from the phosphorus to a carbon atom of the chloromethyl group, followed by a rapid hydrolysis of the intermediate product. The first step occurs by an intramolecular S_N2 mechanism, and the rate of the second step is determined by the ionization of the mercapto group, which in alkaline medium occurs very rapidly.

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USSR

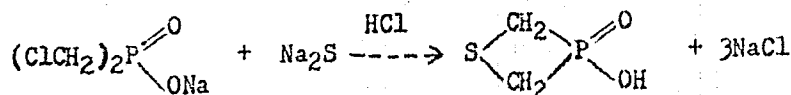
UDC 542.91+661.718.1

GILYAZOV, M. M., ZYABLIKOVA, T. A., MUKHAMEDZYANOVA, E. Kh., SHERMERCORN, I. M.,
 Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of
 Sciences, USSR

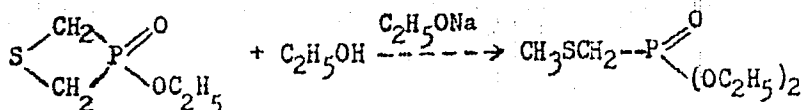
"Derivatives of 1,3-Thiaphosphetanes"

Moscow, Izvestiya Akademiyi Nauk SSSR, Seriya Khimicheskaya, No 5, May 70,
 pp 1177-1180

Abstract: The reaction of the sodium salt of bis(chlormethyl)phosphinic acid with sodium sulfide in aqueous solution in presence of HCl gave a good yield of 3-oxo-3-hydroxy-1,3-thiaphosphetane:



The produce was easily esterified. Ring cleavage was observed:



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USSR

UDC: 621.396.69:621.319.4(088.8)

SHERPUT, Yu. A.

"A Method of Measuring the Capacitance of a Condenser"

USSR Author's Certificate No 265199, filed 20 May 68, published 26 Jun 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V300 P)

Translation: This Author's Certificate introduces a method of measuring the capacitance of a condenser made by vacuum deposition. The procedure is based on determining the capacitance indirectly from directly measured parameters which depend on capacitance. As a distinguishing feature of the patent, measurement precision is improved and the measurement process is simplified by determining the capacitance from the time of the transient process of charge accumulation on the surface of the deposited dielectric. The charge is produced by the electrons emitted from a hot cathode when a fixed potential is fed to the lower plate of the finished capacitor.

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USSR

UDC 616.5-003.6.05-085.849.19-091

VISHNEVSKIY, A. A., Jr., KHARITON, A. S., MUZYKANT, L. I., and SHERFUTOVSKAYA, K. Ye., Moscow, Department of Pathological Anatomy and Department of Pulmonary Surgery, Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR

"Morphological Changes in the Skin After Irradiation With a Pulsed Laser to Remove Tattooing"

Moscow, Arkhiv Patologii, Vol 35, No 4, 1973, pp 59-63

Abstract: A pulsed neodymium laser (wave length 1.06 A and energy density 80-120 j/cm²) was used to remove tattoos in 113 persons aged 18 to 60. The irradiated skin was covered with a boric ointment dressing until the pigmented tissue was completely lysed and rejected (5-20 days) and then with Vishnevskiy's ointment dressing to promote granulation (3-5 days). The final healing took place under the naturally formed scab. Biopsy samples of pigmented with adjacent normal skin were taken prior to and at various periods up to 60 days after irradiation. Morphological and histochemical examinations of the samples revealed a mild inflammatory reaction, frequent absence of demarcation boundaries, infiltration by lymphocytes and hystiocytes, and a moderate development of granulation tissue. Epithelialization proceeded mainly from the edges of the wound, with new epithelial cells containing large glycogen granules and a 1/2

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USSR

VISHNEVSKIY, A. A. Jr., et al., Arkhiv Patologii, Vol 35, No 4, 1973, pp 59-63

considerable amount of mucopolysaccharides. In 3-4 weeks, the wound was healed completely (approximately the same period as with clean surgical wounds), and fine, smooth, pink, mobile scar tissue of the contour of the tattoo was formed. The underlying young connective tissue was rich in acid mucopolysaccharides but contained no elastic fibers. In 1 year, the scar became quite unnoticeable.

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acc. Nr. **ATO107999** - Abstracting Service: **CHEMICAL ABST.** 6-70

Ref. Code **WR0425**

S

125814m Segregation of silver during the growth of antimony telluride single crystals from a melt. Sherov, P.; Karimov, S.; Mavlonov, Sh. (Fiz.-Tekh. Inst. im. Umarova, Dushanbe, USSR). Dokl. Akad. Nauk Tadzh. SSR 1970, 13(2), 19-21 (Russ). The distribution coeff. (K) of Ag in the process of growing Sb_2Te_3 single crystals, contg. desired amts. of Ag, was detd. with the aid of ^{110}Ag . The melt contained $3 \times 10^{-4}\%$ Ag. The ratio C/C_0 at different sections of the crystal increased with the length of the crystal. The increase was most pronounced at high rates of growth, i.e. 12 mm/hr. At 6 mm/hr, $K = 2.5 \times 10^{-2}$. GBJR. J

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REEL/FRA
19891579

USSR

UDC 681.178

PEREVERZEV, B. A., SHERSHAKOV, A. P., BROVKIN, V. A. and UVAROVA, N. G.

"A Device for Monitoring Breaks in a Sequence of Arriving Signals"

USSR Author's Certificate, Class H 04 1 13/12, No 339011, filed 24 July 70
published 8 June 72 (RZh-Avtomatika Telemekhanika i Vychislitel'naya Tekhnika,
No 3, Mar 73, Abstract No 3 A351P)

Translation: A device is proposed for monitoring breaks in a sequence of arriving signals. The device contains two polarized, dual-winding relays and an emergency relay. One of the outputs of the relay windings is connected to a buss of the power supply. The reliability of operation of the device is improved by the installation of a flip-flop, the counting input of which is connected to the other outputs of the windings of the polarized relays through divider diodes. The other output of the emergency relay winding is connected through the parallel connecting contacts of the polarized relays in series to the other buss of the power supply. One illustration,

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USSR

UDC: 621.375.4

BROVKIN, V. A., ANDREYEV, G. N., SHERSHAKOV, A. P.

"An Amplifier"

USSR Author's Certificate No 321914, filed 14 Apr 70, published 24 Jan 72
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 7,
Jul 72, Abstract No 7A80 P)

Translation: A low-frequency amplifier is proposed which contains input, pre-output, and output stages based on transistors connected in a common emitter circuit, and also a feedback circuit between the input and output stages. To improve the operating stability of the amplifier and increase its efficiency, the collector of the transistor in the output stage is connected to the common line through a parallel network, one branch of which is comprised of two series-connected resistors between which a feedback circuit is connected, and to a grounded capacitor; the other branch of the parallel network is comprised of a load resistor and a grounded capacitor connected in series. The other capacitor plates are interconnected by an additional resistor. One illustration.

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USSR

FILATOV, B., Engineer; and SHERSHAKOVA, A., Engineer

"TUPV-0.25x2 Transistorized Radio Equipment"

Moscow, Radio, No 5, May 71, pp 22-23 and 25

Abstract: The article is a description of the 500 watt TUPV-0.25x2 transistorized relay equipment for broadcast programs. The radio is made by the "Promsvyaz" Plant in Kiev. The unit is designed for operation where the ultrashort-wave frequency-modulated field strength is at least 50 μ V/m. The installation incorporates two fixed-frequency superheterodyne receivers with a main-channel sensitivity of 25 μ V at a signal-to-noise ratio of 50 dB at the output, an output voltage of 0.8 V and a reception band of 10-50,000 Hz. The main power supply to the installation is from a 220 VAC line, and there is also an emergency battery power supply. The installation also includes a remote panel with microphone for local reports. The unit is housed in a cabinet measuring 1500 x 731 x 596 mm. The entire installation including the cabinet, weighs 240 kg. The new equipment will replace the outdated TU-100 and Tu-600 amplifiers.

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UNCLASSIFIED

PROCESSING DATE--16OCT70

1/3 031

TITLE--EFFECT OF IMPURITIES OF GROUP IV ELEMENTS ON THE PLASTIC PROPERTIES OF GALLIUM ARSENIDE -U-

AUTHOR--(03)-SHERSHAKOVA, I.N., OSVENSKIY, V.B., STOLYAROV, O.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 457-60

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--GALLIUM ARSENIDE, PLASTICITY, SEMICONDUCTOR MATERIAL, CRYSTAL DISLOCATION, TIN, GERMANIUM, SINGLE CRYSTAL, CRYSTAL IMPURITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0927

STEP NO--UR/0363/70/006/003/0457/0460

CIRC ACCESSION NO--AP0118094

UNCLASSIFIED

PROCESSING DATE--16OCT70

UNCLASSIFIED

2/3 031

CIRC ACCESSION NO--AP0118094

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STUDY OF THE INFLUENCE OF IMPURITIES ON PLASTIC PROPERTIES OF SEMICONDUCTOR MATERIALS PROVIDES SUCH QUANT. CHARACTERISTICS AS THE ACTIVATION ENERGY OF THE DISLOCATION MOTION AND KINETIC CONSTS., AND IT MAKES IT POSSIBLE TO UNDERSTAND THE MECHANISM OF THE FORMATION OF DISLOCATION STRUCTURE AND THE INTERACTION OF POINT DEFECTS WITH DISLOCATIONS IN SEMICONDUCTORS. AMONG SUCH IMPURITIES IN THE EFFECT OF SN, GE, AND SI ON GAAS WAS STUDIED. THE DYNAMIC UNIAXIAL COMPRESSION METHOD WAS USED TO STUDY THE PLASTICITY OF THESE CRYSTALS. ACCORDING TO THE THEORY, IMPURITIES OF GROUP IV CAN REPLACE EITHER THE GA OR THE AS ATOM IN THE CRYSTAL LATTICE, OR BOTH SIMULTANEOUSLY. IN THE LATTER CASE, MOST OF THE DOPING IMPURITY DOES NOT CONTRIBUTE TO CARRIER CONC. UP TO A CONC. OF 1 TIMES 10 PRIME17 CM PRIME NEGATIVE3 ALMOST ALL THE SI ATOMS ARE DONORS; THEREAFTER, THIS DEPENDENCE CHANGES SIGNIFICANTLY, SINCE THE FERMI LEVEL RISES AND THE SUBSTITUTION OF ATOMS OF BOTH SUBLATTICES BEGINS. THE NATURE OF THE SUBSTITUTION DEPENDS ON WHETHER THERE IS EXCESS GA OR AS. THE PRESENCE IN GAAS OF EXCESS CATION (GA) VACANCIES ENHANCES THE DONOR CHARACTER OF THE SUBSTITUTION. THE ACCEPTOR BEHAVIOR OF THESE IMPURITIES CAN BE CAUSED BY AN EXCESS OF ANION VACANCIES. ALL THE IMPURITIES INVESTIGATED RAISE THE UPPER YIELD POINT FOR GAAS. THE UPPER YIELD POINT FOR UNDOPED GAAS AT THE EXPTL. CONDITIONS SELECTED WAS 6.2 KG-MM2, WHEREAS THAT FOR GAAS DOPED WITH GE WAS 17 KG-MM PRIME2. THE TEMP. AND RATE DEPENDENCES OF THE UPPER YIELD POINT FOR GAAS SINGLE CRYSTALS DOPED WITH GE AND SN WERE ALSO STUDIED.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

3/3 031

CIRC ACCESSION NO--AP0118094

ABSTRACT/EXTRACT--THE INCREASE IN THE ACTIVATION ENERGY FOR THE
DISLOCATION MOTION UPON DOPING OF GAAS BY AMPHOTERIC IMPURITIES CAN BE
EXPLAINED ON THE BASIS OF THE SIMULTANEOUS ACTION OF SEVERAL FACTORS.
THE CHARGE STATE OF THE DOPANTS HAS A SIGNIFICANT EFFECT ON THE
PLASTICITY OF GAAS SINGLE CRYSTALS.

UNCLASSIFIED

USSR

YERMAKOV, V. I., MOISEYEV, G. I., SHERSHENEV, V. G., Moscow

"The Perturbed Motion of a Body Containing a Cylindrical Cavity with
Elastically Mounted Ribs"

Moscow, Mekhanika Tverdogo Tela No. 5, 1970, pp 65-73.

Abstract: Equations are concluded for the perturbed motion of a body with a cylindrical cavity containing a fluid and elastically mounted ribs. The method of conjugation is used to determine the hydrodynamic parameters characterizing the force and momentum effects of the liquid filler and the oscillating ribs on the motion of the body.

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1/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PILOTS, TAKE HEED OF BIRDS -U-

AUTHOR--(03)-LAVRIK, V.S., RUBTSOV, I.F., SHERSHER, F.A.

COUNTRY OF INFO--USSR

SOURCE--PILOTS, TAKE HEED OF BIRD (LETSNIK, VNIMANIYE -- PTITSY.) MOSCOW,
VOYENIZDAT, 1970, 102 PP
DATE PUBLISHED-----70

SUBJECT AREAS--AERONAUTICS

TOPIC TAGS--BIRD, AIRCRAFT SAFETY, AIRCRAFT VULNERABILITY, COLLISION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1984/0600

STEP NO--UR/0000/70/000/000/0001/0102

CIRC ACCESSION NO--AM0055335

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AM0055335

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE BIRDS,
AIRCRAFT FLIGHT HAZARDS. CERTAIN BIOLOGICAL CHARACTERISTICS OF BIRDS.
ANALYSIS OF STATISTICAL DATA ON COLLISIONS OF AIRCRAFTS WITH BIRDS.
ANALYSIS OF PHYSICAL PHEOMENA OBSERVED IN COLLISION OF AIRCRAFTS WITH
BIRDS. AND MAIN TYPES OF DAMAGE TO AIRCRAFTS. MEASURES ON PREVENTION
OF COLLISIONS OF AIRCRAFTS WITH BIRDS. APPENDIX BIBLIOGRAPHY.

UNCLASSIFIED

USSR

UDO 621.385.032.26.001.5

GAAL', L.N., KEL'MAN, V.M., KNYAZ'KOV, L.G., SHERSHEVSKIY, A.M. [Spets. konstrukt. byuro analit. priborstr. AN SSSR--Special Design Bureau For Analytical Instrument Manufacture, AS, USSR]

"Electron-Optical Prism"

USSR Author's Certificate No 263057, filed 14 Nov 66, published 28 May 70 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A15P)

Translation: An electron-optical prism is proposed which contains a magnet with a uniform field and parallel boundaries. With the object of increasing the angular dispersion without disturbance of the telescopicity of the prism, cylindrical electron lenses are mounted on the two sides of the magnet, the focuses of which match the focuses of the lenses which are formed by the boundary fringing fields of the magnet. For a decrease of the size and weight of the magnet, the focal length of the electron lenses is larger than the focal lengths of the lenses which are formed by the boundary fringing fields of the magnet. The electron-optical prism can be used as a dispersing element during determination of the energies of electrons, protons, positrons, measurement of ion masses, and also during separation of isotopes.

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1/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--NICKEL NITRATE PRODUCTION -U-

AUTHOR--(05)-PETRACHKOV, F.A., KARLOV, V.P., SHERSHNEV, N.G., SERGUNKIN,
V.N., CHERNYAVSKAYA, L.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,380
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI NR 1970
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, NICKEL COMPOUND, NITRATE, CRYSTALLIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/1450

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

CIRC ACCESSION NO--AA0126981

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0126981

ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. NI NITRATE IS PREPD. WITHOUT THE
FORMATION OF AN NH SUB4 NO SUB3 BYPRODUCT BY DISSOLVING METALLIC NI IN
HNO SUB3 CONTG. 700-1000 G-L. NI(NO SUB3) SUB2. 6H SUB2 O IN THE
PRESENCE OF 20-70 G-L. NH SUB4 NO SUB3 IN THE FORM OF A MOTHER LIQUOR
OBTAINED AFTER EVAPN. AND CRYSTN. OF NI NITRATE.

UNCLASSIFIED

USSR

UDC 616.931.092.9-085.37

URBANOVICH, L. Ya., KHUNDANOV, L. Ye., and SHERSHNEV, P. A., Irkutsk, Antiplague Institute of Siberia and the Far East

"Combined use of Cholera Vaccine and Anticholera Serum Globulin in Experimental Cholera"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunologii, No 9, Sep 70, pp 14-17

Abstract: The results of a study of the combined use of cholera vaccine and anticholera serum globulin to confer immediate and lasting protection against cholera are presented. The experiments were carried out on white mice. Anticholera serum globulin was obtained by fractionation with ethanol in cold. Analysis of the composition of anticholera serum protein and its globulin fractions by electrophoresis showed that they contain a high percentage (65-76%) of gamma-globulin fraction, a fact which explains the high rate of survival of experimental animals. Single subcutaneous injection of the mixture of cholera vaccine and anticholera serum globulin protected the animals from cholera infection for one to 21 days. When the anticholera serum globulin was injected alone, its effect lasted only for two weeks after administration, while cholera vaccine

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USSR

URBANOVICH, L. Ya., et al. Zhurnal Mikrobiologii, Epidemiologii, i Immunologii,
No 9, Sep 70, pp 14-17

became effective at a later period. Toxicity was manifested in tissue dehydra-
tion, engorgement of intestine with fluids, and dystrophic changes in the liver.

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- 43 -

USSR

UDC 599.32:591.111.05+619.981.452

SHERSHNEV, P. A. (Deceased) and OL'KOVA, N. V., Irkutsk Scientific Research
Antiplague Institute of Siberia and the Far East

"Some Biochemical Characteristics of Blood Serum in Animals Differing in
Sensitivity to Plague"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972,
pp 132-135

Abstract: Ten rodent species (guinea pig, white mouse, field mouse, white
rat, gray rat, Altay marmot, long-tailed suslik, rabbit, Mongolian pika, and
Daurian pika) were examined to determine whether their degree of susceptibility
to plague is a function of the total protein, beta and gamma globulins, and cal-
cium content of serum. The content of total proteins and especially the globulin
fractions were higher in the more resistant species (rabbit, white rat, gray rat)
than in the highly sensitive ones (guinea pig, white mouse, long-tailed suslik),
but the pattern was not absolute because the differences in sensitivity were
not always significant and some species were exceptions. For example, the
indices for the Mongolian and Daurian pikas, which belong to the same order and
family, were lower than those of the Rodentia and even those of the rabbits which
are of the same order but different family. However, the content of globulins

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SHERSHNEV, P. A. (Deceased) and OL'KOVA, N. V., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972, pp 132-135

was higher in the relatively resistant Daurian pika than in the highly susceptible Mongolian pika. No correlation was noted between the amount of calcium in the serum of the different species and their sensitivity to plague.

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USSR

UDC: 615.373:576.851.45.077.37.074

SHKURKO, YE.D., ~~SHERSHNEV~~, P.A., and KHUNDANOV, L.YE., Irkutsk Scientific Research antiplague Institute of Siberia and the Far East

"Electrophoretic Study of the Protein Composition of Tularemia Diagnostic Sera"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 2, 1970, PP 43-47

Abstract: Immunization of horses with tularemia antigen increased serum gamma globulin (by 1.24%) and total protein (by 0.3-1.1%). However, the amount of alpha- and beta-globulins and albumin changed little in the course of immunization, and was virtually the same as in normal serum. No significant changes in the composition of the serum proteins occurred after the immunization cycles were increased. The gamma-globulin fraction increased only during a cycle, and not with increase in the number of cycles. The gradual increase in gamma-globulin in the course of immunization suggests that this fraction is associated with specific tularemia serum antibodies. No quantitative relationship was detected between the agglutination titer of the tularemia sera and their protein composition.

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Acc. Nr: AP0043866

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Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 2, pp 43-47

ELECTROPHORETIC STUDY OF THE PROTEIN COMPOSITION OF TULAREMIA DIAGNOSTIC SERA

Ye. D. Shkurko, P. A. Shershnev, L. Ye. Khundanov

It was demonstrated by the method of electrophoresis on paper that specific antibodies of tularemia sera associated with the gamma-globulin fraction. In immunization of horses with tularemia antigens the content of total protein and of gamma-globulin fraction increased in their serum; the amount of albumin fraction, alpha- and beta-globulins varied but insignificantly.

There was no quantitative relationship between the specific agglutination titre and fractional composition of the protein in the blood of immune animals.

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1/2 023

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--NATURE OF CROSSLINKS FORMED DURING THE VULCANIZATION OF RUBBERS BY
A THIUREA HEXACHLOROETHANE COMPLEX IN THE PRESENCE OF SULFUR -U-
AUTHOR-(03)-GLUSHKOV, V.V., SHERSHNEV, V.A., DOGADKIN, B.A.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(3), 14-15

DATE PUBLISHED-----70

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SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYMER CROSSLINKING, VULCANIZATION, THIUREA, CHLOROETHANE,
COMPLEX COMPOUND, SULFUR, SYNTHETIC RUBBER, STYRENE, STRESS
RELAXATION/(U)SKMS30ARK STYRENE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1997/0455

STEP NO--UR/0138/70/029/003/0014/0015

CIRC ACCESSION NO--AP0119391

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 023

CIRC ACCESSION NO--AP0119391

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

ABSTRACT. THE ADDN. OF 2 WT. PARTS OF THE
TITLE COMPLEX (I) AND 2 WT. PARTS S TO SYNTHETIC RUBBER SKMS-30ARK
DECREASED ITS ELONGATION AT BREAK TO 55PERCENT AND ITS FLEX RESISTANCE
TO 9 TIMES 10 PRIME4 CYCLES AS COMPARED WITH 100PERCENT AND 11 TIMES 10
PRIME4 CYCLES FOR THIS RUBBER VULCANIZED WITH S 2 AND DIPHENYLGUANIDINE
2 PARTS. HOWEVER, I CONSIDERABLY REDUCED THE DYNAMIC STRESS RELAXATION
OF THIS RUBBER.

FACILITY: MOSK. INST. TONKOL. IM. LOMONOSOVA,

MOSCOW, USSR.

UNCLASSIFIED

1/2 045

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--PERTURBED MOTION OF A BODY CONTAINING A CYLINDRICAL CAVITY WITH RIBS -U-

AUTHOR--(03)--YERMAKOV, V.I., MOISEYEV, G.A., SHERSHNEV, V.G.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIYA NAUK SSSR, IZVESTIYA, MEKHANIKA TVERDOGO TELA, MAR.-APR. 1970, P. 52-61

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CYLINDRIC SHELL STRUCTURE, REINFORCED SHELL STRUCTURE, MOTION EQUATION, VIBRATION ANALYSIS, FLUID DYNAMICS, BOUNDARY VALUE PROBLEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1282

STEP NO--UR/0484/70/000/000/0052/0051

CIRC ACCESSION NO--AP0124933

UNCLASSIFIED

2/2 045

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124933

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE MOTION OF A BODY WITH A PARTIALLY FILLED CYLINDRICAL CAVITY EQUIPPED WITH DAMPING RIBS. THE PROBLEMS ARISING IN DETERMINING THE HYDRODYNAMIC CHARACTERISTICS OF THE LIQUID FILLING ARE SURMOUNTED IN THIS CASE BY EMPLOYING THE METHOD OF COUPLING PARTICULAR SOLUTIONS. A SOLUTION IS OBTAINED FOR THE BOUNDARY VALUE PROBLEM OF SMALL VIBRATIONS OF THE LIQUID FILLING, AND THE INERTIA TENSOR OF AN EQUIVALENT SOLID BODY IS CALCULATED.

UNCLASSIFIED

USSR

UDC 577.154.5

SHERSHNEVA, L. P., and VENKSTERN, T. V., Institute of Molecular Biology, USSR
Academy of Sciences, Moscow

"Enzymatic Synthesis of Some Dinucleoside Monophosphates and Their Hydrolysis
by Snake Venom Phosphodiesterase"

Moscow, Molekulyarnaya Biologiya, Vol 5, No 3, May/June 71, pp 480-486

Abstract: The dinucleoside monophosphates guanylyl-3', 5'-uridine, guanylyl-3', 5'-pseudouridine, and guanylyl-3', 5'-dihydrouridine were synthesized by guanyl-RNAse obtained from the culture fluid of *Actinomyces aureoviticillatus*. Guanylyl-3', 5'-uridine and guanylyl-3', 5'-pseudouridine were subjected to hydrolysis by snake venom phosphodiesterase obtained from *Vipera lebetina*. It was found that guanylyl-3', 5'-pseudouridine is hydrolyzed at a much slower rate than guanylyl-3', 5'-uridine.

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Pharmacology and Toxicology

USSR

UDC 615.214.3 C

KHOLODOV, L. Ye., TASHUNSKIY, AL'TSHULER, R. A., MASHKOVSKIY, M. D.,
ROSHCHINA, L. F., SHERSHNEVA, S. I., LEYBEL'MAN, F. Ye., VOLZHINA, O. N.,
GOROETSKIY, L. Sh., and PETROVA, N. A., All-Union Chemical and Pharmaceutical
Institute imeni S. Ordzhonikidze, Moscow

"Sydnocarb, a New Central Nervous System Stimulant"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 1, 1973, pp 50-52

Abstract: The recently developed heterocyclic compound sydnocarb -- N-phenyl-carbamoyl-3-(β -phenylisopropyl) sydnomine, $C_{18}H_{18}N_4O_2$ -- produced marked motor excitation in mice, rats, dogs, and cats, increased the frequency and decreased the amplitude of electrical potentials, shortened the latent period of conditioned avoidance reflexes, and reduced the duration of the somnifacient action of hexobarbital. It did not depress monoamine oxidase activity, affect arterial pressure, or cause morphological changes in the viscera or peripheral blood. Administered to persons with various neurological and mental diseases (average dose 10 to 25 mg) characterized by asthenic, adynamic, and apathic disorders, sydnocarb had a pronounced stimulatory effect (exceeding that of amphetamine) without inducing euphoria or motor excitement, tachycardia, elevated blood pressure, or other peripheral changes. No signs of physical or
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USSR

KHOLODOV, L. Ye., *Khimiko-Farmatsevticheskiy Zhurnal*, No 1, 1973, pp 50-52
mental dependence were observed even in patients that received the drug more
than 2 years. Sydnocarb has been authorized by the USSR Ministry of Health
for use as a psychotropic agent.

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USSR

UDC: 581.14-502.262.22

SHERSHUKOVA, O. P., and MOCHALKIN, A. I., All Union Scientific Research Institute of Phytopathology, Bol'shiye Vyazemy

"Ultrastructure of Uredospores of *Puccinia graminis* f. sp. *tritici* in Relation to Their Biological State"

Leningrad, Mikologiya i Fitopatologiya, Vol 4, No 6, 1970, pp 505-508

Abstract: The ultrastructure of uredospores of *Puccinia graminis* f. sp. *tritici* was investigated. It was established that the ultrastructure of uredospores in anabiosis differed from that of uredospores which had been activated by keeping them in a chamber containing humid air. In uredospores in the state of anabiosis, the nucleus had an oval shape, the contents of the nucleus were homogeneous and lacked structure, only a few mitochondria were present, and there was no endoplasmic reticulum. In uredospores that had been activated, the nuclei became elongated, a large number of mitochondria appeared, and an endoplasmic reticulum as well as other cytoplasmic structures developed. The mitochondria and cytoplasmic structures including the endoplasmic reticulum apparently formed from fragments that separated from the nuclear membrane, which was brought into an active state.

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USSR

UDC 53.07/.08+53.001.5

SHERSTKOV, Yu. A., RYBAKOV, V. A., GORLOV, A. D., YESYUNIN, V. N.

"An Electromagnet Current Stabilizer"

Uch. zap. Ural'sk. in-ta (Scientific Notes of the Ural Institute), 1971, No 118, pp 113-117 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A321)

Translation: The electron paramagnetic spectrometers currently used for studying the structure of the spectra of free radicals and the complex spectra of elements of the transition groups utilize electromagnets with electronic current stabilization of at least 10^{-5} - 10^{-6} . The proposed supply circuit is designed for field stabilization in a radiospectrometer of the single-klystron type. The current stabilizer is designed for feeding magnets with a power of up to 3.5 kVA and stabilizes the magnetic field to 10^{-6} . The magnet provides a field with a strength of up to 10 000 oersteds in a gap of 60 mm with a pole piece diameter of 250 mm and a winding resistance of 800 ohms. A diagram of the device is presented and its operation is described. A nuclear magnetic resonance pickup (IMI-2) is used for evaluating the stability of the magnetic field. Operation of the device over a three-year period has shown that it satisfies all requirements for the supply source of magnets in NMR spectrometers; it is convenient and reliable in use. B. N. Kraynov.

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USSR

UDC: 621.372.632

AL'BATS, M. Ye., BURMISTROV, I. N., ORLIK, I. Ya., SHEPSTNEV, I. N.

"A Non-Hunting Device for Automatic Frequency Control"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 28, 1970, Soviet Patent No 280564, Class 21, filed 23 Jan 68, p 45

Abstract: This Author's Certificate introduces a non-hunting device for automatic frequency control which contains a mixer whose output is connected to the input of a narrow-band channel consisting of a narrow-band amplifier, discriminator and frequency control unit. The device also includes a wide-band channel which contains a wide-band amplifier, discriminator, frequency control unit and oscillator. As a distinguishing feature of the patent, tracking precision is improved by connecting the output of the narrow-band channel to the frequency control unit in the wide-band channel.

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USSR

UDC 661.143.017:620.193.6

KOKKOTA, V. A., SHERSTNEV, L. G.

"Experimental Investigation of the Stability of Sulfide Cathodophosphors When Exposed to Photons"

Tr. Tallin. politekhn. in-ta (Works of Tallin Polytechnical Institute), 1972, No 323, pp 133-140 (from RZh-Khimiya, No 9, May 73, abstract No 9L163 by V. D. Matveyev)

Translation: The authors study the radiation stability of luminescent compositions and their aging process in cathode ray tubes. In addition, a correlation is established between the aging of cathodoluminescent compositions with excitation by photons and by electrons. White television mixture BM-4 and BM-5 and its components ZnS:Ag (blue) and (ZnCd)S:Ag (yellow) were used in the experiment with protracted exposure to photons with wavelength of 254 and 365 nm. These luminescent compositions were also exposed to cathodic excitation. The phosphorescent screen specimens were made by the method of deposition from an aqueous suspension onto a substrate of optical glass. The specific load was 3.5 mg/cm², which corresponds to a layer thickness of 10-12 μm. The specimens were placed in quartz envelopes and exposed to emission from BUV lamps (wavelength 245 nm 1/2

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USSR

KOKKOTA, V. A., SHERSTNEV, L. G., Tr. Tallin. politekhn. in-ta, 1972, No 323, pp 133-140

[sic]) and PRK lamps (wavelength 365 nm). Exposure was done both in air and in a vacuum of 10^{-3} and 10^{-6} mm [Hg] ($1.33 \cdot 10^{-1}$ and $1.33 \cdot 10^{-4}$ N·m⁻²). During exposure in vacuum, the dark conduction of the phosphor was measured. For this purpose an aluminum contact was applied to the substrate or directly to the phosphor by vacuum sputtering. The conductivity of the phosphor layer increased after exposure to photons and decreased after exposure to electrons. The photon equivalent of exposure is deduced and a curve is plotted for the correlation between photon and electron aging. This simplifies the process of studying aging by replacing aging in a vacuum under electron exposure with the simpler aging at atmospheric pressure under UV exposure; thus the stability of a phosphor can be predicted for operation in cathode ray tubes. Bibliography of eight titles.

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1/2 052 UNCLASSIFIED PROCESSING DATE--11SE 70
TITLE--THIN FILM SUPPRESSOR COATINGS, METHODS FOR THEIR PREPARATION AND
STUDY, AND THEIR BASIC PROPERTIES -U-
AUTHOR--KULOV, S.K., SHERSTNEV, I.G. S
COUNTRY OF INFO--USSR
SOURCE--RADIOTEKH. ELEKTRON. 1970, 15(2) 420
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ELECTRON BOMBARDMENT, METAL COATING, TITANIUM, CHROMIUM,
BORON, CARBON, COPPER, THERMAL EFFECT, HIGH VACUUM, ELECTRON EMISSION,
BORON CARBIDE, TITANIUM CARBIDE, CHROMIUM CARBIDE, BORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1272 STEP NO--UR/0109/70/015/002/0420/0420
CIRC ACCESSION NO--AP0107748
???????????? UNCLASSIFIED

2/2 052

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107748

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SECONDARY ELECTRON EMISSION WAS STUDIED FOR THIN FILMS OF TI, CR, B, C, AS WELL AS FOR THE CARBIDES AND BORIDES OF TI AND CR ON A CU SUBSTRATE. THE SECONDARY EMISSION COEFF. WAS DETD. AS A FUNCTION OF THE ENERGY OF THE PRIMARY ELECTRONS AND THE EFFECTIVE THICKNESS OF THE FILM WAS DETD. FOR WHICH THE PRIMARY ELECTRONS DET. COMPLETELY THE SECONDARY EMISSION PROPERTIES OF THE SURFACE. THIS IS OF THE ORDER OF 50-100 ANGSTROMS. THE STABILITY OF THE EMISSION PROPERTIES WAS STUDIED OVER A WIDE RANGE OF PRESSURE (10 PRIME NEGATIVE-760 TORR) AND TEMP. THE REDN. OF THE OXIDIZED CR FILMS IS ONLY POSSIBLE BY MEANS OF ELECTRON BOMBARDMENT. THE Ti FILMS CAN ALSO BE REDUCED BY HEATING IN A HIGH VACUUM IF THEIR THICKNESS IS GREATER THAN 150-200 ANGSTROMS.

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UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--TIGHTNESS OF PLUGGING MATERIALS AND OF THEIR CONTACT WITH WELL
CASING SURFACES -U-
AUTHOR--(05)-SEIDRZA, M.K., SHERSTNEV, N.M., AGAYEV, M.KH., MUGALINSKAYA,
V.V., KHAIROV, KH.KH. S
COUNTRY OF INFO--USSR
SOURCE--AZERB. NEFT. KHOZ. 1970, (2), 20-3
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT

TOPIC TAGS--PIPELINE TRANSPORTATION SYSTEM, TEST INSTRUMENTATION, NATURAL
GAS, SEAL, THERMOPLASTIC MATERIAL, HARDNESS/(U)TSXGS THERMOPLASTIC
MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/2028 STEP NO--UR/0487/70/000/002/0020/0023

CIRC ACCESSION NO--AP0122257
UNCLASSIFIED

2/2 028

CIRC ACCESSION NO--AP0122257

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APP. WAS DEVELOPED FOR TESTING THE TAMPING COMPNS. USED IN SEALING THE GAP BETWEEN THE STANDPIPE OF A GAS WELL AND THE SIDES OF THE BORE HDLE. IT IS A BOMB IN WHICH THE TAMPING MATERIAL IS PACKED UNDER PRESSURE AROUND A CENTRAL CORE MADE OF COMPACTED SOIL TOPPED BY A METAL PIPE. A SYSTEM OF VENTS PERMITS TESTING OF THE PERMEABILITY OF SOIL TAMPERING MATERIAL SYSTEM AT THE TAMPING MATERIAL PIPE BOUNDARY UNDER 2-15 KG,CM PRIME2 AIR PRESSURE. THE BEST RESULTS WERE OBTAINED WHEN THE EXPANDING CEMENT TOPPED BY A RING SEAL OF THERMPOLASTIC RESIN TSKGS SUB75-90DEGREES AROUND THE PIPE WAS USED. THIS COMPN. AFTER HARDENING FOR 15 DAYS BECAME IMPERMEABLE TO THE AIR AT 15 KG,CM PRIME2 PRESSURE.

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UDC 621.791.011:620.192.4

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FARENBRUKH, V. E., Engineer, Irkutsk Polytechnic Institute, SHERSTNEV, V. V.,
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"Cold Resistance of Joints Welded at Negative Temperatures"

Moscow, Svarochnoye proizvodstvo, No 9, 1972, pp 26-28

Abstract: A study was made of the effect of negative temperatures during welding on the cold resistance of welded joints of St.3sp and 10G2S1 steel. The results of a chemical analysis and mechanical testing of the steel are tabulated. The threshold of cold brittleness defined by the minimum impact toughness is somewhat lower than that defined by the presence of a 20% viscous component in the fracture. When welding the investigated steel, the maximum reduction in impact toughness takes place in the zone heated to 200-300° C. With a decrease in the initial welding temperature to -30° C, an increase in the threshold of cold brittleness of the metal in the weld-affected zone by 25-35° C takes place by comparison with the cold brittleness threshold of the base metal. Negative temperatures during welding especially affect the cold brittleness of the weld-affected zone of low-carbon St.3sp steel.

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SHERSTNIKOV, R. N.

"Mathematical Model of the Search for Fish"

Tr. Atlantich. NII Ryb. Kh-va i Okeanogr. [Works of the Atlantic Scientific Research Institute for the Fishing Industry and Oceanography], 1972, No 49, pp 76-115 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V557)

Translation: This work consists of two chapters: the first is dedicated to the construction of a search methodology in the theoretical aspect, while the second studies certain applications of the theory presented. The motion and position of the object of search are considered random. A situation is studied in which the object of search is nonmoving; then, the distribution function depends only on three (or two) spatial coordinates. It is considered that the instruments, in the area where they operate, will detect the search object if it is present with probability 1. At first, a school of fish is looked upon as a point. Later, it is pointed out how to consider the specific dimensions of the school. It is considered that the search is conducted using continuous curves (meeting curves or search curves), related to the distribution function (or the differential rule). A probability measure is sought for the set of points on a plane which is the search region. The probability

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measure $\int p(x, y)dx dy$ is called the P-characteristic of set A with a fixed random vector $\xi = (X, Y)$ ($p(x, y)$ is its differential distribution rule). Since the search for fish is conducted on the basis of curves, while the P-characteristic of any curve is equal to zero, the concept of the P_L -characteristic of curve L is introduced, characterizing to some extent the "quality" of the meeting curve from the standpoint of its "value" for search.

$$P(\xi, L) = \int_L p(x, y(x))dl.$$

One and the same P_L -characteristic corresponds to an entire class of curves. The greatest interest is in those of them which have the minimum length. Otherwise, suppose A is the class of curves with fixed length. The author suggests that curves be selected from class A in which the P_L -characteristic reaches its maximum value. The most frequently encountered case in practice is studied, in which a curve of fixed length maximizing the functional

$$P(\xi, L) = \int_L p(x, y)dl$$

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SHERSTNIKOV, R. N., Tr. Atlantich. NII Ryb. Kh-va i Okeanogr., 1972, No 49, pp 76-115

is sought. This variational problem is easily solved. Systems of differential equations are written for its generalizations to the cases of three and more variables. Further, the concept of curved entropy is defined which, in the words of the author, plays a basic role in the construction of the search method. Known formulas for entropy are altered, based on the fact that in practical applications it is usually necessary to study random quantities not over the entire space of their possible values, but rather in a certain limited set. In the particular case when this set is a curve (surface), a definition of curved (surface) entropy is produced. It is noted that in practice, it is frequently necessary to separate curves (surfaces) of minimum entropy. The corresponding variational problem is formulated and a method of its solution is described. In § 3, curved information is similarly defined and the variational problem is studied. The last paragraph of the first chapter begins with establishment of the following fact: the P_L -characteristics of curves should not intersect. In practice, the distance between P_L -characteristics of curves is determined by the so-called reliable detection width, resulting from the range of action of the detection equipment.

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In order to find the differential rule $p(r)$ of distribution of range of detection with a nonmoving search object, we can utilize an empirical method: repeated approximation of the search objects with fixation of the range of first detection. For r for which a fixed probability of detection is provided, the probability

$$P_0 = \int_r^{\infty} p(r)dx$$

that the search object can be detected at a distance not less than r is called the search reliability, and r itself is called the reliable detection radius. The problem of provision of a fixed reliability of search over a fixed time is also discussed.

The search method presented in the first chapter is not given algorithmic form. Some details of this method are refined in the second chapter in the case of a number of special (frequently encountered in practice) differential distribution rules.

YE. Gabovich

USSR

UDC: 621.315.3

KOPYLOV, K. I., MENCHIKOV, L. P., OKUN', Ye. L., SMIRNOV, V. M., SHERSTO-
BITOV, A. Ye.

"An Installation for Making Microwires in Glass Insulation"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 134-143 (from RZh-Radictekhnika, No 5, May 71, Abstract No 5V419)

Translation: The authors present the results of development of specialized installations for casting type ULP-5, ULP-6 and ULP-6M microwires in glass insulation. The schematic diagrams of the installations are described and their technical characteristics are given. Resumé.

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UDC 621.375.32

USSR

SHERSTOBITOV, V. YE., VINOKUROV, G. N.

"Properties of Unstable Resonators with a Large Equivalent Fresnel Number"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 3, Moscow, Soviet Radio, 1972, pp 36-44 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D909)

Translation: Results are presented from numerical calculations of modes in unstable resonators. It is demonstrated that insignificant smoothing of the edge of the mirrors leads to significant improvement of the selected properties of the resonator. The conclusion is drawn that in spite of the predictions of the theory of unstable resonators with a sharp mirror edge, real resonators with a large equivalent Fresnel number must insure oscillation in the lower transverse mode described by the geometric approximation. The bibliography has 14 entries.

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SHERSTOBITOV, V. V.

"Mathematical Programming. Part 3. Elements of Nonlinear and Dynamic Programming."

Matematicheskoye Programirovaniye. Ch. 3. Elementy Nelineynogo i Dinamicheskogo Programirovaniya [English Version Above], Textbook for Engineering and Economics Students, Leningrad, 1971, 72 pages (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V540 K).

NO ABSTRACT.

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USSR

UDC 621.375.82

ANAN'YEV, Yu. A., GRISHMANOVA, N. I., KOVAL'CHUK, L. V., SVENITSITSKAYA,
N. A., SHERSTOBITOV, V. Ye.

"On the Possibility of Laser Radiation Control With Telescopic Resonators"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works),
No. 2, Moscow, "Sov. radio", 1972, pp 85-88 (from RZh-Fizika, No 10,
Oct 72, Abstract No 10D1019)

Translation: The possibility of controlling laser radiation with a tele-
scopic resonator by introducing a signal from an external source into the
central zone of the resonator was investigated experimentally. The necessary
average power of the external signal when it consists of randomly distributed
subpulses of radiation over time was determined. 9 ref. Authors abstract.

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UDC: 621.373:530.145.6

ANAN'YEV, Yu. A., SVENTSITSKAYA, N. A., and SHERSTOBITOV, V. Ye.
"Laser"

Avt. sv. SSSR (Author's Certificate USSR) Class 2lg, 53/00,
(H 01 s 3/08), No. 274254, Application 18.03.58, Publication
18.09.70 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No.
3D348P)

Translation: A laser, containing an active element, a pumping system, and a resonator made of concave and convex reflectors, is distinguished in that, for the purpose of reducing the angular radiation deviation, the foci of the concave and convex mirrors coincide and the transverse dimension of the convex mirror is less than the transverse dimension of the active element. To increase the radiated power, the ratio of the convex mirror and active element transverse dimensions is chosen equal to the ratio of the focal lengths of the convex and concave mirrors. Resume

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UDC 621.375.82

ANAN'YEV, Yu. A., SHERSTOBITOV, V. Ye., SHOROKHOV, O. A.

"Calculation of the Effectiveness of a Laser With Large Losses to Radiation"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 1, Moscow, 1971, pp 91-95 (from RZh-Fizika, No 7, Jul 71, Abstract No 7D1038)

Translation: The energy characteristics of lasers with an unstable resonator of the telescope type are calculated. It is shown that in selecting the resonator parameters which are optimal from the aspect of efficiency, one can usually use standard formulas of probability theory derived for the application of a plane resonator. With considerable inactive losses and a large rise in the generation threshold, these formulas become inapplicable. A simple method is proposed for calculating the effectiveness of lasers in such situations. Authors abstract.

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SHERTSOBITOV V.Ye.

Acc. Nr: AP0043766

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksp... noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 3, pp 786-793

TELESCOPIC RESONATOR LASER

Anan'yev, Yu. A.; Vinokurov, G. N.; Koval'chuk, L. V.;
Sventsitskaya, N. A.; Shertsobitov, V. Ye.

The properties of an unstable resonator laser with large Fresnel numbers and radiative losses are considered. The feasibility of describing some properties of such lasers in the geometric optics approximation without applying the diffraction theory of open resonators is discussed. Results are presented of an experimental study of a generator with an unstable resonator formed by a telescopic system of mirrors.

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UDC 621.357.13:669.298

SMIRNOV, M. V., KUDYAKOV, V. YA., KHUDOLOZHNIK, V. N., and SEENSTOBITOVA, I.A.

"Volatile Components of Alloy Mixtures KCl-ThCl₄"

Tr. In-ta elektrokhemii. Ural'sk nauch. tsentr. AN SSR (Studies of the Institute of Electrochemistry. Ural Science Center, Academy of Sciences USSR) Vyp 18, 1972, pp 33-40 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L426 by A. D. Davydov)

Translation: The volatiles were measured in saturated vapors of KCl and ThCl₄ containing 0-50 mole % ThCl₄, in the temperature range 690-990°C. The composition of the gas phase was determined relative to the liquid phase. Based on the experimental data, the conclusion was drawn that there is an equilibrium concentration of the two compounds of the type K₂ThCl₆ in the vapor phase.

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Optics and Spectroscopy

USSR

UDC: 53.07/.08+53.001.5

SHERSTYANKIN, P. P., Editorial Staff of "Zhurnal Prikladnoy Spektroskopii"

"Effect Which the Angular Characteristics of Photometers Have on the Accuracy of Determining the Parameters of a Luminous Field Under Quasidiffuse Conditions"

Vliyaniye uglovykh kharakteristik fotometrov na tochnost' opredeleniya parametrov svetovogo polya pri kvazidiffuznom rezhime (cf. English above), Academy of Sciences of the BSSR, Minsk, 1971, 25 pp, ill., bibliography of 9 titles (No 3566-71 Dep.) (from RZh-Fizika, No 4, Apr 72, Abstract No 4A231)

Translation: Formulas are given for the irradiance and scalar irradiances from above and below, the coefficient of diffuse reflection, and the relative errors of measurement by photometers with nonideal characteristics for the case of spherical distribution of radiation with a known displacement p of the pole of radiation away from the center of the sphere, and for ellipsoidal angular distribution with the pole of radiation lying at the focus of an ellipsoid with known eccentricity e under quasidiffuse conditions. The results of the given computations may be used both for

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