

USSR

UDC 622.24.053.6

MEL'NIKOV, V. I., ZHIDOVTSYEV, N. A., LEVCHENKO, A. T., STARKOV, V. N.,
DEMCHUK, M. H., KOVAL'CHUK, P. P., and PODOBANYI, I. F.

"Test Results of a Wave Reflector"

Moscow, Bursniye -- Referativnyy Nauchno-Tekhnicheskiy Sbornik (Drilling --
Scientific and Technical Reference Collection of Works), No 1, 1973, pp 7-11

Abstract: Results are presented of tests conducted on a special arrangement of the bottom part of a drilling column, which possesses the capacity of reflecting the vibratory energy generated by the cutting bit. This arrangement, which constitutes an independent structure, is called a superbit wave reflector. The basic configurations of the design and operation of the reflector are described. The existence of the theoretically calculated resonance regime and antiresonance regime was confirmed experimentally. Results of operational tests demonstrated an improvement of drilling parameters in hard rock as a result of application of the reflector. 3 figures, 1 table, 2 references.

1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--LUBRICATING ADDITIVE FOR WASHING LIQUIDS -U-
AUTHOR--(05)-YAROV, A.N., KHARCHENKO, L.S., KENDIS, H.SH., GORDASH, YU.T.,
ZHIDOVTSSEV, N.A.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 266,988
REFERENCE--UTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LUBRICATING OIL, CHEMICAL PATENT, LUBRICANT ADDITIVE,
INDUSTRIAL WASTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/1804

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

CIRC ACCESSION NO--AA0130637
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE—30OCT70

CIRC ACCESSION NO—AA0130637

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A LUBRICATING ADDITIVE FOR WASHING LIQS. IS BASED ON OIL AND FAT INDUSTRY BY PRODUCTS, SUCH AS TAR OILS FROM BLACK COTTONSEED OIL SOAPSTOCK, TECH. FAT, OR THEIR MIXTS. TO IMPROVE THE LUBRICATING PROPERTIES OF THE ADDITIVE IN AN ALK. MEDIUM, THE OIL AND FAT WASTE PRODUCTS ARE TREATED WITH C SUB1-20 ALCS. IN THE PRESENCE OF H SUB2 SO SUB4 AT 65-120DEGREES.

UNCLASSIFIED

USSR

UDC: 678.01:677.52+539.4

ZHIGACH, A. F., TSIRLIN, A. M., SHCHETILINA, YE. A., SVETLOV, I. L., GRIGOR'YEV, V. I., SHAFRANOVICH, E. G., BULYGINA, T. I., and YARTSEV, V. A., State Scientific-Research Institute of Chemistry and the Technology of Elementoorganic Compounds, Moscow

"Mechanical Properties of Boron Fibers"

Riga, Mekhanika Polimerov, No 4, Jul-Aug 73, pp 641-647

Abstract: The authors study the strength distribution of boron fibers. The study is based on a large amount of experimental material. The results show that the strength of boron fibers can be sufficiently accurately described by the Weibull or by normal rules of distribution. The parameters of these distributions are determined. The typical defects in boron fiber macrostructure are isolated and described. Mean strength as a function of tested fiber length is studied experimentally.

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Organometallic Compounds

USSR

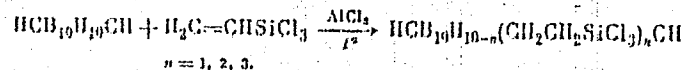
UDC 547.244.245

MIRONOV, V. F., CIRGOS, V. I., PECHURINA, S. YA., and ZHIGACH, A. F.

"Synthesis of a New Class of Silicon Containing Carboranes"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, p 2583

Abstract: Up to now, it has been possible to prepare only the C-substituted silicon carboranes. However, the vinylchlorosilanes and the cinylalkylchlorosilanes may be added to o-, m-, and p-carboranes and their derivatives in the presence of aluminum chloride. As shown below, this occurs at the B-H bond of the carborane nucleus with the formation of new B-substituted silicon-containing carboranes.



Structures were confirmed by IR and NMR spectra in mass spectroscopic data.

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1/2 019 UNCLASSIFIED Z PROCESSING DATE--0900170
TITLE--PHASE DIAGRAM OF AN AMMINETRIMETHYLBORON AMMONIA SYSTEM -U-
AUTHOR--(104)-SVITSYN, R.A., ZHIGACH, A.F., SOROKIN, P.Z., OSOKIN, V.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 849-51
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHASE DIAGRAM, AMMONIA, ORGANOBORON COMPOUND, EUTECTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1867 STEP NO--UR/0078/70/015/003/0849/0851
CIRC ACCESSION NO--A0112847
UNCLASSIFIED

Z/2 019

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112547

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. PHASE DIAGRAM OF ME SUB3 BNH SUB3
I1-NH SUB3 SYSTEM IS CONSTRUCTED. THE SYSTEM FORMS CONGRUENTLY MELTING
ME SUB3 BNH SUB3.3NH SUB3 (I1) (M. MINUS 80.4DEGREES) AND ME SUB3 BNH
SUB3.2NH SUB3 (M. MINUS 71.3DEGREES) AND INCONGRUENTLY MELTING ME SUB3
BNH SUB3.NH SUB3 (M. MINUS 47.8DEGREES). I1 FORMS AN EUTECTIC WITH I AT
40.7 WT. PERCENT I AND M. MINUS 99.8DEGREES.

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UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--PHASE DIAGRAM OF HYDRAZINETRIMETHYLBORON PYRIDINE AND
METHYLAMINETRIMETHYLBORON PYRIDINE SYSTEMS -U-
AUTHOR--(05)-SVITSYN, R.A., ZHIGACH, A.F., SOROKIN, P.Z., PETROVA, YE.I.,
OSOKIN, V.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1131-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHASE DIAGRAM, ORGANOBORON COMPOUND, PYRIDINE, HYDRAZINE
COMPOUND, AMINE, COMPLEX COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/1145 STEP NO--UR/0078/70/015/004/1131/1133
CIRC ACCESSION NO--AP0136565
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136565

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHASE DIAGRAMS OF N SUB2 H SUB4 .BME SUB3 PYRIDINE (PY) AND MENH SUB2 .BME SUB2 -PY SYSTEMS ARE PRESENTED. THE SYSTEMS FORM ADDUCTS (N SUB2 H SUB4 .BME SUB3).PY, (N SUB2 H SUB4 .BME SUB3).2PY, AND (MENH SUB2 .BME).-PY WHICH CONGRUENTLY M. MINUS 19.1, MINUS 30.3, AND MINUS 14.5DEGREES, RESP.

UNCLASSIFIED

Acc. Nr. **AP0045144**

Abstracting Service
CHEMICAL ABST.

4/70

Ref. Code
UR0409

90589n Reaction of digermazanes with o-carboranes. Svit-
syn, R. A.; Zhigach, A. E.; Sobolev, E. S.; Antipin, L. M.;
Mironov, V. V. (Gos. Nauch.-Issled. Inst. Khim. Tekhnol.
Elementorg. Soedin., Moscow, USSR). Khim. Geterotsikl. Soe-
din. 1970, (1), 127-8 (Russ). Heating 4.32 g o-carborane with
10.1 g (Et₂Ge)₂NH 14 hr at 200-300°, then with 1 g added (Et₂-
Ge)₂NH 12 hr at 300°, gave after treatment with MeOH 50%
1-triethylgermyl-o-carborane, d₄²⁰ 1.0940, n_D²⁰ 1.5483. Similarly,
1-isopropylcarborane gave in 17 hr at 245° with (Et₂Ge)₂NH
27% 1-isopropyl-2-triethylgermylcarborane, n_D²⁰ 1.5506. 1-
Phenylcarborane in 28 hr at 275° similarly gave 22.5% 1-phenyl-
2-triethylgermylcarborane, n_D²⁰ 1.5882. G. M. Kosolapoff

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19780044

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1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PHASE DIAGRAMS OF DIETHYLAMINE TRIMETHYLBORON PYRIDINE AND
TRIMETHYLAMINE BORANE PYRIDINE SYSTEMS -U-
AUTHOR--(04)--SVITSYN, R.A., ZHIGACH, A.F., SOROKIN, P.Z., PETROVA, YE.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 829-30
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHASE DAIGRAM, AMINE, ORGANOBORON COMPOUND, PYRIDINE,
EUTECTICS
CENTRCL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0968 STEP NO--UR/0078/70/015/003/0829/0830
CIRC ACCESSION NO--AP0124627
UNCLASSIFIED

2/2 014
CIRC ACCESSION NO--APO124627 UNCLASSIFIED PROCESSING DATE--30OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHASE DIAGRAMS OF THE TITLE
SYSTEMS ARE CONSTRUCTED. THE SYSTEM OF (ET SUB2 NH)BME SUB3 (I) FORMS
AN ADDUCT (II) CONTG. 61.98 WT. PERCENT I AND CONGRUENTLY M. 4.5DEGREES.
II FORMS EUTECTICS WITH PYRIDINE, M. MINUS 55DEGREES, AND WITH I, M.
MINUS 6.8DEGREES. THE SYSTEM OF ME SUB3 NBH SUB3 FORMS A SIMPLE
EUTECTIC (M. MINUS 44.2DEGREES AND CONTG. 5.0 WT. PERCENT ME SUB3 HBH
SUB3) SYSTEM WITH PYRIDINE.

UNCLASSIFIED

USSR

UDC 621.396.614.13:621.374.4

ZHIGACH, V. P. *Z*

"Calculating the Frequency Division Region for a Single-Loop Circuit Using a Diode with a Thin Base"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi Vyp. 1 (Materials of the Scientific and Technical Conference. Leningrad Electrotechnical Communications Institute. Vyp. 1), Leningrad, 1970, pp 167-170 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D23)

Translation: Formulas are obtained which determine the boundaries of the region of frequency division for a single loop divider made of a semiconductor diode with a thin base and a noninjecting ohmic contact.

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UDC 591.1.15

PIKULEV, A. T., GURKO, A. V., ZHIGALKOVICH, N. V., KHRIPCHENKO, I. P.,
and CHERNOGUZOV, V. M.

"On the Mechanism of the Action of Ionizing Radiation on the Activity of
Aminotransferase in the Brain of White Rats"

Nauch. dokl. vyssh. shkoly. Biol. n. (Scientific Papers of the University.
Biological Sciences), 1971, No 9, pp 43-48 (from RZh-Biologicheskaya
Khimiya, No 2, 25 Jan 72, Abstract No 2F272)

Translation: The rate of transamination processes catalyzed by the alanine-
and aspartate-aminotransferase enzyme system is disrupted in rat brain under
the effect of X-radiation in a dose of 700 roentgens. This is due to a change
in the activity of the given enzymes in individual subcellular fractions of
the brain, and also to discoordination in the transamination system which is
especially pronounced on the first and seventh days after exposure to radia-
tion. Résumé.

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1/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INFLUENCE OF THE ALKALINITY OF THE FIRST SATURATION JUICE ON
SEDIMENTATION AND FILTRATION PROPERTIES OF THE RESIDUE --U--
AUTHOR--ZHIGALOV, M.S. Z
COUNTRY OF INFO--USSR
SOURCE--SAKH. PROM. 1970, 44(5), 22-4
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--FOOD PROCESSING EQUIPMENT, SOLUTION ALKALINITY, FILTRATION,
SEDIMENTATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/0303 STEP NO--UR/0339/70/044/005/0022/0024
CIRC ACCESSION NO--AP0135798
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135798

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNFILTERED FACTORY 1ST, SATN. JUICE OF HIGH ALKY. (0.10-0.12PERCENT CAO) WAS GRADUALLY SATD. WITH CO SUB2 IN A LAB. SATURATOR AT 80-50DEGREES TO ALKY. 0.05PERCENT CAO. A SERIES OF SAMPLES (700-800 ML) WAS TAKEN, ON WHICH THE ALKY., FILTRATION COEFF., RATE OF SETTLING, AND RATIO OF HEIGHT OF THE PPT. TO THE HEIGHT OF JUICE TAKEN WERE DETD. A CHANGE OF ALKY. FROM 0.10 TO 0.06-0.065PERCENT HAD LITTLE EFFECT ON THE RATE OF SETTLING OR ON FILTRATION OF THE PPT.; FURTHER REDN. OF ALKY. TO 0.05PERCENT WAS SATISFACTORY ONLY DURING PROCESSING BEETS OF POOR QUALITY, WHEN IT INCREASED THE RATE OF SEDIMENTATION, BUT HAD LITTLE EFFECT ON THE COEFF. OF FILTRATION. DURING PROCESSING OF BEETS OF GOOD AND MEDIUM QUALITY, PRESATN. DID NOT IMPROVE SEDIMENTATION OR FILTRATION.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF SOME PHARMACOLOGICAL SUBSTANCES AND PHYSICAL FACTORS ON
THE BILE EXCRETORY FUNCTION IN HEALTHY INDIVIDUALS AND IN PATIENTS WITH
AUTHOR--(04)-BELOUSOV, A.S., TASHEV, T., GRUNCHAROV, V., ZHIGALOVA, M.F.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 54-61
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BILE, SECRETION, ATROPINE, DUODENUM, DRUG EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0439 STEP NO--UR/0504/70/042/004/0054/0061
GIRC ACCESSION NO--AP0117675
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30JCT70

CIRC ACCESSION NO--AP0117675

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS SUGGEST A NEW METHOD OF STUDYING BILE SECRETION AND BILE EXCRETION IN HUMAN BEINGS. ITS ADVANTAGES AS COMPARED TO OTHER METHODS ARE SHOWN. MATERIAL CONCERNING THE EFFECT OF PHARMACOLOGICAL SUBSTANCES (ATROPINE, MYCERIN) ON BILE EXCRETION IN TO THE DUODENAL REGION IS GIVEN. THE AUTHORS DRAW THE READER'S ATTENTION TO AN UNTOWARD EFFECT OF ATROPINE ON THE BILE SECRETORY FUNCTION IN THE TREATMENT OF PATIENTS WITH PEPTIC ULCER. THEREFORE, IT IS RECOMMENDED THAT COLAGOGUE MEANS (MEDICINAL, DYGESTIVE AND PHYSIOTHERAPEUTIC) SHOULD BE INCLUDED INTO THE COURSE OF TREATMENT WITH ATROPINE AND ATROPINE LIKE AGENTS. FACILITY: KAFEDRA RASTROENTEROLOGII I DIYETOTERAPII TSENTRAL'NOGO INSTITUTA USOVERSHENSTVOVANIYA VRACHEY, MOSCOW. FACILITY: KAFEDRA RASTROENTEROLOGII ISUL, SOFIA.

UNCLASSIFIED

USSR

UDC: 681.3.001:51

YAMPOL'SKIY, V. Z., POGREBNOY, V. K., ZHIGALOVA, Ye. F.

"Algorithmic Planning and Optimization of the Use of a Unified Set of Units for a Fixed Class of Circuits"

Dokl. K VI Nauchno-Tekhn. Konf. Po Vopr. Avtomatiz. Proizva. T. 4 [Reports of the Sixth Scientific and Technical Conference on Problems of Automation of Production, Vol 4] Tomsk University Press, 1969, pp 247-255 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika I Vychislitel'naya Tekhnika, No 3, 1971, Abstract No 3 B50 by V. R.)

Translation: The task of planning a standardized set of units is studied for a fixed class of circuits, considering the requirements of "functional completeness," the minimum number of types of units, and the maximum filling of the units with logic elements. It is suggested that planning be performed on the basis of the data of statistical analysis of a representative sample of circuits of the class in question. The statistical analysis consists of separation of frequently repeated, logically coupled elements -- standard structures. The process of solution of the problem is divided into the following stages: composition of initial information, analysis of functional circuits, formation of blocks in the set, estimation of the effectiveness of the set and its adjustment. The apparatus of graph theory is used to produce a formalized description of each stage of planning, allowing the planning algorithm to

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USSR

UDC: 681.3.001:51

YAMPOL'SKIY, V.Z., POGREBNOY, V.K., ZHIGALOVA, Ye.F., Dokl. K VI Nauchno-Tekhn.
Konf. Po Vopr. Avtomatiz. Proizva. T. 4 Tomsk University Press, 1969, pp 247-255.

be realized on a digital computer. 2 biblio. refs.

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USSR

UDC 624.07:534.1

ZHIGALOVSKIY, I. V.

"Rotational Oscillations of Rigid Beams on an Elastic Mass Layer"

Soprotivl. materialov i teoriya sooruzh. Resp. mezhved. nauch.-tekhn. sb.
(Resistance of Materials and the Theory of Structures. Republic Interde-
partmental Scientific-Technical Collection), 1972, No. 18, pp 82-87
(from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V251)

Translation: The steady-state vibrations of a rigid beam (beam plate) with
a uniformly distributed mass caused by a harmonic moment are discussed.
Formulas are obtained for the angle of rotation and the dynamicity coeffi-
cient. The parameters entering into these formulas were calculated for nine
layers of different thickness and a half-plane for the Poisson coefficient
0.25. 5 ref. Author's abstract.

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1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ACTION OF CHLORINE ON O AND M, CARBORANYLMAGNESIUM HALIDES -U-
AUTHOR-(03)-ZAKHARKIN, L.I., ZHIGAREVA, G.G., PODVISOTSKAYA, L.S.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 461-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CARBORANE, CHLORINE, ORGANOMAGNESIUM COMPOUND, BROMIDE,
IODIDE, ETHANE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0842 STEP NO--UR/0062/70/000/002/0461/0463
CIRC ACCESSION NO--AP0119746
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119746

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING O OR M,CARBORANES WITH ETMGCL, ETMGVR, OR ETMGI IN THF GAVE C SUB2 H SUB6 AND AFTER REMOVAL OF MUCH OF THE SOLVENT AND REPLACEMENT OF IT BY C SUB6 H SUB6, THE MIXT., COOLED TO 5-10DEGREES, WAS TREATED WITH DRY CL TO YIELD MAINLY C,BRMO OR C,IODOCARBORANES. THUS, CHLORINATION OF O,CARBORANYLMAGNESIUM BROMIDE GAVE 6PERCENT 1,CHLORO,O,CARBORANE AND 94PERCENT 1,BROMO,O,CARBORANE, WHILE 1,METHYL,2,BROMOMAGNESIUM,O,CARBORANE GAVE 5PERCENT 1, METHYL,2,CHLORO,O,CARBORANE AND 95PERCENT 1,METHYL,2,BROMO,O,CARBORANE; O,CARBORANYL MAGNESIUM IODIDE GAVE 5PERCENT 1,CHLORO,O,CARBORANE; O,CARBORANYL,MAGNESIUM IODIDE GAVE 5PERCENT 1,CHLORO,O,CARBORANE AND 95PERCENT 1,IODO,O,CARBORANE, WHILE 1,METHYL,2,IODOMAGNESIUM,O,CARBORANE GAVE 6PERCENT 1,METHYL,2,CHLORO,O,CARBORANE AND 94PERCENT 1,METHYL,2,IODO,O,CARBORANE. FOR PREPN. OF THE C,CHLORO DERIVS. IT IS NECESSARY TO USE RMGCL FOR THE REACTIONS. THE RESULTS WERE THE SAME FOR M,CARBORANE ANALOGS. FACILITY: INST. LEMENTORG. SDEIN., MOSCOW, USSR.

UNCLASSIFIED

172 016 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SYNTHESES BASED ON LITHIUM DERIVATIVES OF P. CARBORANE -U-
AUTHOR--(03)-ZAKHARKIN, L.I., KALININ, V.N., ZHIGAREVA, G.G.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 912-14
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, ORGANOLITHIUM COMPOUND, MERCAPTAN,
IODINATED ORGANIC COMPOUND, CARBOXYLIC ACID CHLORIDE, AMINE DERIVATIVE,
CARBORANE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1368 STEP NO--UR/0062/70/000/004/0912/0914
CIRC ACCESSION NO--AP0134042
UNCLASSIFIED

2/2 016

C1K6 ACCESSION NO--AP0135042
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

PREP. FROM 1 G P-CARBORANE IN C SUB6 H SUB6, WAS ADDED 3.5 G IODINE, AND THE MIXT. KEPT 30 MIN TO GIVE 96PERCENT 1,12,DIIDOO,P,CARBORANE, M. 218-19DEGREES; SIMILAR REACTION WITH S GAVE 1,12,DIMERCAPTO,P,CARBORANE M. 156-80DEGREES. PASSING SO SUB2 INTO A SOLN. OF 1,LITHIUM,P,CARBORANE (II) IN C SUB6 H SUB6 GAVE P,CARBORANYLSULFINIC ACID, M. 135-6DEGREES. TREATING P,CARBORANECARBOXYLIC ACID WITH PCL SUB5 IN C SUB6 H SUB6 ON 20 MIN HEATING GAVE A GOOD YIELD OF 1,12,DIBENZOYL,P,CARBORANE (III), M. 149-50DEGREES, ALSO FORMED FROM I BY TREATING WITH BZCL AT 0DEGREES. III WAS REDUCED WITH LiAlH SUB4 IN ET SUB2 O TO 1,12,BIS(BENZYLOXY),P,CARBORANE, M. 153DEGREES. TREATING III WITH NaEt, ETC OVERNIGHT GAVE EtOBZ AND P,CARBORANE; ALC. KOH SIMILARLY GAVE THE LATTER AND BZOL. II AND MEHGCL IN ET SUB2 O, C SUB6 H SUB6 HEATED 1 HR GAVE 74PERCENT METHYL(P,CARBORANYL)MERCURY, M. 192-3DEGREES. II IN HEXANE MIXED WITH NOCL IN ET SUB2 O AT MINUS 75DEGREES GAVE, AFTER 3 HR, A LOW YIELD OF 1,NITROSS,P,CARBORANE, M. 174-5DEGREES. P,CARBORANECARBOXYLIC ACID CHLORIDE, PREP. IN DRY C SUB6 H SUB6 WITH PCL SUB5, WAS TREATED WITH NaN SUB3 IN AC. ME SUB2 CO TO YIELD P,CARBORANECARBOXYLIC ACID AZIDE, M. 57-8DEGREES, WHICH HEATED WITH CONCD. H SUB2 SO SUB4 GAVE 1,AMINO,P,CARBORANE, M. 237DEGREES.

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

UNCLASSIFIED

Aluminum and Its Alloys

UDC: 541.133+546.621

DELEMAKSKIY, Yu. K., MAKOGON, V. F., CHETVERIKOV, A. V., and ZHIGAYLO, A. Ya.,
Institute of General and Inorganic Chemistry, Academy of Sciences Ukrainian
SSR

"Formation of Slime on an Aluminum Anode in Chloride Melts"

Moscow, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 459-461

Abstract: In the electrodeposition of aluminum from a $2AlCl_3-NaCl$ salt mixture it was observed that the surface of the soluble aluminum anode, under continuous service, became coated with a heavy layer of black slime, and the anode current yield exceeded 100% liberating gas bubbles. The objective of this study was to determine the causes of slime formation as well as its effect on the cathode current yield. Microscopic examination of the slime collected from the anode and rinsed with alcohol revealed a mass of glittering particles basically comprising aluminum. In a chloride melt the anode current density is the governing factor. At 1 amp/dm^2 , the anode current yield recalculated to Al^{3+} considerably exceeds 100% and the mean ion valence of aluminum computed from loss in weight of the anode is below three. The anode dissolves evenly,

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DELMARSKIY, YU. K., et al, Zashchita Metallov, Vol 6, No. 4, Jul-Aug 70,
pp 459-461

the slime is finely dispersed. In this case, the deviation from Faraday's law is due to Al^+ formation. An entirely different picture was observed at an anode current density of 15 amp/dm^2 . The powder on the anode is abundant, the anode current yield hardly exceeds the theoretical, and the mean calculated valence of aluminum is close to three. The slime structure is clearly defined. The anode dissolves unevenly, and its surface erosion is similar to intergranular failure. As for the effect of anodic current density on the cathodic current yield, it is suggested that in electrodeposition of aluminum from chloride melts care must be exercised in selecting along with the temperature, cathode current density, and inter-electrode space, also the proper anode current density: it must differ little from the optimum cathode current density.

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1/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--RADIOISOTOPE INVESTIGATION OF THE LIVER CONDITION IN PERSONS HAVING SUSTAINED VIRAL HEPATITIS -U-

AUTHOR--(03)-SOSKIN, A.M., LATSINIK, G.YE., ZHIGILEVA, V.I.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 5, PP 22-26

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEPATITIS, RADIOBIOLOGY, RADIOACTIVE ISOTOPE, IODINE ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1999/1182

STEP NO--UR/0504/70/042/005/0022/0026

CIRC ACCESSION NO--AP0123159

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123159

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WHEN EXAMINING 54 PATIENTS HAVING SUSTAINED VIRAL HEPATITIS DURING THE PERIODS FROM 8 MONTHS TO 3 YEARS AFTER RECONVALESCENCE, AS WELL AS 48 PATIENTS WITH LIVER CIRRHOSIS AT THE TERMINATION OF BOTKIN'S DISEASE THE AUTHORS USED THE METHODS OF RADIOISOTOPE DIAGNOSIS, HEPATOGRAPHY AND SCANNING. THE RESULTS OF HEPATOGRAPHY WITH BENGAL ROSE LABELLED I PRIME131 SHOWED THAT A DROP IN THE ABSORPTIVE FUNCTION OF THE LIVER WAS PERSISTENT IN 70PERCENT OF THE PATIENTS, AND CIRRHOTIC CHANGES WERE REVEALED IN 48PERCENT. SCANNING WITH RADIOACTIVE AU PRIME198 IS OF GREAT INTEREST IN CATAMNESTIC EXAMINATION OF PATIENTS WITH VIRAL HEPATITIS. FACILITY: KAFEDRA INFEDTSIONNYKH BOLEZNEY TSENTRAL'NOGO INSTITUTA USOVERSHENSTVOVANIYA VRACHEY AND LABORATORIYA RADIOIZOTOPNOY DIAGNOSTIKI, MOSKOVSKOGO N-I RENTGENO-RADIOLOGICHESKOGO INST.

UNCLASSIFIED

USSR

UDC 576.858.8:582.264.45.7.094

KOSKOVETS, S. N., MENDZHUL, M. I., ZHIGIR, V. V., NESTEROVA, N. V., and KHIL',
O. S., Institute of Microbiology and Virology, Academy of Sciences Ukrainian
SSR, Kiev

"Morphology of the Lytic Agent of *Chlorella pyrenoidosa* Pringh"

Moscow, *Voprosy Virusologii*, No 1, Jan/Feb 71, pp 98-100

Abstract: The morphology of the virus producing breakdown of a laboratory culture of *Chlorella pyrenoidosa* strain 82 was studied. Purified lysate products of *C. pyrenoidosa* were found to contain phage-like particles which were uniform in shape and size. They consisted of an isometric capsid 480 Å and a short, tail-like appendage of 110 Å length and 94 Å width. The appendage had a transverse striation, and the shape appeared to be a clearly defined octahedral structure. On a solid medium, the algophage produced negative colonies typical for phage-type viruses. Within 5-7 days, these colonies had a diameter of 2-3 mm.

1/1

Precision Mechanical and Optical

USSR

UDC 535.417

ZHIGLENSKIY, A. G., and PUTILIN, E. S.

"Formation of a Wave Front by Means of Interference Coatings"

Leningrad, Optika i Spektroskopiya, Vol 32, No 6, Jun 72, pp 1176-1179

Abstract: The article considers the question of giving interference dielectric coatings additional functions involving the formation of a light wave front without impairing the reflecting properties of the coatings. A solution is found for the problem of forming a flat wave surface by means of an interference coating applied to a substrate whose surface possesses axial symmetry. It is suggested that the flat wave surface be formed by applying a quarter-wave mirror with a thickness of variable radius. The relation between the thicknesses of the mirror layers does not depend on the radius, but the thickness of the layers themselves does. Calculations are outlined for variations in the shape of the wave front during reflection by the quarter-wave mirror. Such mirrors are obtained in a device analogous to the one described by K. KREBS with birotation of the substrate. The geometry of the evaporator device is calculated. As an example of the formation of

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USSR

ZHIGLINSKIY, A. G., and PUTILIN, E. S., Optika i Spektroskopiya, Vol 32, No 6, Jun 72, pp 1176-1179

a wave front, it is shown that mirrors can be obtained experimentally in which the deflection from the plane is 5-6 times less than the deflection of the substrate surface from the plane.

2/2

USSR

UDC 543.42.001.4

BOSHNYAK, B. M., ZHIGLINSKIY, A. G., and PRESNUKHINA, I. P.

"Investigation of a Pulse Light Source With a Hollow Cathode"

V Sb "VII Ural'sk. Konf. po Spektroskopii, 1971. Vyp. 1" [In the Collection "Seventh Ural Conference on Spectroscopy, 1971. No 1".], Sverdlovsk, 1971, pp 19-21 (from Referativnyy Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.991 by V. S. K.)

Translation: The installation diagram with a pulsed hollow cathode is presented and the conditions of the separation by time of the admission processes into the discharge of atoms of the cathode material and their excitations are determined. The optical part of the installation consists of the ISP-51 monochromator crossed with the Fabry-Perotetalon. The registration of the emission is carried out photoelectrically by means of synchronous detection. The investigation of the separation of the processes of excitation and admission of atoms into the discharge was carried out on the Cu 1 578.2 mm line, emitted by plasma in the cooled copper hollow cathode. Spectrally pure neon at 0.5-0.7 mm Hg pressure was used as discharge carrier. Two illustr., four biblio. refs.

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USSR

UDC 539.234:669.231

ZHIGLINSKIY, A. G., Candidate of Sciences, PUTILIN, E. S.

"Optimal Conditions for the Formation of Homogeneous Thin Films"

Leningrad, Optiko-mekhanicheskaya promyshlennost', No. 9, Sep 71, pp 46-49

Abstract: The method for obtaining thin films by evaporation of material in a vacuum on a substrate subjected to a double rotation is discussed. Such homogeneous thin films are widely used in laser resonators, interference filters, and interferometers. Optimal conditions are found for obtaining films that are homogeneous in thickness under double rotation. It is shown that the optimal geometry of evaporating devices for single and double rotation is different. It was calculated that the area of the homogeneous coating should be approximately an order of magnitude greater under double rotation than under single rotation. Experimental results are presented to support this.

1/1

- 75 -

Measuring, Testing, Calibrating

USSR

UDC 621.391.832.4

ROSTOVTSSEV, Yu. G., MASLOV, A. Ya., DOLGALEV, S. D., ZHIGORA, P. P.

"A Device for Measuring Edge Distortions of Pulses"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 2, Jan 73, Author's Certificate No 362501, Division H, filed 5 Apr 71, published 13 Dec 72, p 142

Translation: This Author's Certificate introduces: 1. A device for measuring edge distortions of pulses in telegraph communications channels. At the input of the installation is an advancing pulse generator with decoder. One output of the decoder is connected through a switch to a display, and the output of the display is connected to the generator and to the decoder. As a distinguishing feature of the patent, measurements can be made without interrupting communications. For this purpose the input of the device is connected to a second input of the switch through an additional switch with delay in series with a pulse duration measurement device. The second output of the decoder is connected to a second input of the additional switch with delay. 2. A modification of this device distinguished by the fact that the outputs of all six digital places

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USSR

ROSTOVSKIY, Yu. G. et al., USSR Author's Certificate No 362501

of the shift register in the decoder are connected to a single AND circuit. Connection of the second digital place is through a NOT circuit, and the first four outputs are additionally connected to a second AND circuit, the outputs of the AND circuits being the outputs of the decoder.

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- 73 -

USSR

UDC 547.75.07:543.51

ZHIGULEV, K. K., KHMEL'NITSKIY, R. A., GRANDBERG, I. I., and VYSOTSKIY, V. I., Moscow Agricultural Academy imeni K. A. Timiryazev

"Indoles. XXVII. Mass-spectrometry of Compounds with Eserine and Homoeserine Skeletons"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 8, Aug 72, pp 1065-1069

Abstract: Mass-spectroscopical data on 12 derivatives of dinordesoxy-9-methyleseroline (I) and dinordesoxy-10-methylhomoeseroline (II) have been reported. The derivatives of (I) are somewhat more stable toward electronic bombardment than (II). Introduction of a methyl or methoxy group onto the benzyl ring or $N_{(a)}$ -position increased the stability of the molecular ion.

The pyrrolidine or piperidine rings are the first to undergo fragmentation, so that the stability of molecular ions must be connected with the localization of the charge on the $N_{(b)}$ nitrogen atom. Most probably the principal dissociation involves the breakdown of the ring, splitting off the methyl group, forming ions with a mass of 30. The most intensive peaks obtained from dissociative ionization correspond to the formation of pseudomolecular ions of 2,3-dimethylindole derivatives. A mechanism of the formation of regrouped pseudomolecular ions $RC_6H_4N^+H_2$ has been proposed.

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USSR

UDC 513.88:513.83

ZIL'BERBERG, N. I., and ZHIGULEV, L. A.

"On the Theory of Cones in F-Spaces"

Uch. zap. Leningr. gos. ped. in-t im. A. I. Gertsena (Scientific Notes of the Leningrad State Pedagogical Institute imeni A. I. Hertzen), No 464, 1970, pp 161-166 (from Referativnyy Zhurnal -- Matematika, No 7, July 71, Abstract No 7B663, by L. Labsker)

Translation: Following the terminology of M. G. Kreyn and M. A. Rutman (Uspekhi matem. nauk [Advances in Mathematical Sciences], Vol 3, No 1, 1948, pp 3-95) and M. A. Krasnosel'skiy (Referativnyy Zhurnal -- Matematika, 1963, Abstract No 8B422K), the authors give definitions of a cone, solid cone, circular cone, and right circular cone in an F-space and prove several statements about these that are similar to statements in Banach space.

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1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--EFFECT OF THE CONFIGURATION OF THE CONTACT SURFACE OF THE LARGE
BELL ON THE OPERATION OF A BLAST FURNACE -U-
AUTHOR--KUDDYAROV, M.S., ZHIGULEV, P.G., POLYANSKIY, D.S., KORNEV, V.B.,
GORBACHEV, V.P.
COUNTRY OF INFO--USSR
SOURCE--STAL' 1970, 30(1), 12-15
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--BLAST FURNACE, METALLURGIC FURNACE, COMPONENT LIFE EXPECTANCY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0142 STEP NO--UR/0133/70/030/001/0012/0015
CIRC ACCESSION NO--AP0103821
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103821

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SHORTENED LIFE OF LARGE BELLS CAUSED BY EXCESSIVE LEAKAGE WHEN THE TOP PRESSURE IS SIMILAR TO 1 ATM SUGGESTED REPLACING THE CONICAL CONTACT SURFACE OF A 53DEGREES LARGE BELL WITH A SPHERICAL ONE. THE POSSIBILITY WAS INVESTIGATED ON A 1:25 SCALE TRANSPARENT FURNACE TOP MODEL, AND NEW BELLS WERE INSTALLED ON 2 FURNACES. THEIR PERFORMANCE IS DESCRIBED. A SPHERICAL CONTACT SURFACE LEADS TO A TIGHTER JOINT AND THEREFORE TO A LONGER LIFE, RENDERS THE CHARGE TRAJECTORY STEEPER, LOWERING ITS IMPACT POINT ON THE THROAT ARMOR BY 300-320 MM, AND TENDS TO INCREASE THE PERIPHERAL GAS STREAM.

UNCLASSIFIED

USSR

UDC: 51.621.391

ZHIGULIN, L. F., ZYABLOV, V. V.

"Exponential Function of Error Probability in a System With Feedback
When Cascade Code is Used"

Probl. peredachi inform., 1973, 9, No 1, pp 3-10 (from RZh-Kibernetika,
No 7, Jul 73, abstract No 7V458 from the authors' résumé)

Translation: The basic purpose of this article is to obtain an upper
estimate of the probability of error in a system with feedback when cascade
code is used with a definite decoding algorithm.

The result of the work shows that when cascade code is used in a
system with feedback where the forward channel is a binary symmetric
channel without memory with probability of error per symbol $0 < \epsilon \leq 0.5$,
and the feedback channel is a channel without interference and without
delay, the error probability with an increase in the mean length of a
cascade code combination n decreases according to an exponential function,
and is estimated from above by the expression

$$P_{er} \leq \exp\{-nE_{10}(R)\}, \quad (1)$$

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USSR

ZHIGULIN, L. F., ZYABLOV, V. V., Probl. peredachi inform., 1973, 9, No 1, pp 3-10

where $E_{10}(R)$ is the lower estimate of the exponential function of error probability which is a function of the average transmitting rate R , $E_{10}(R)$ being positive for all positive R less than C .

Estimate (1) is obtained for a system which has ideal synchronization with respect to binary symbols.

The basic advantage of the given method of transmission with the use of cascade code combined with ideal feedback is the relatively low complexity of decoding, limited maximum delay of a message during transmission, and an exponential decrease in error probability with unbounded increase in the length of the cascade code for all average transmitting rates less than the throughput. No other known system with feedback has all three of the properties mentioned above simultaneously.

The given system has the mentioned advantages when extremely long codes are used. The question remains open as to the advantages of the system for channels with memory when very long codes are used in it.

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USSR

UDC 577.4

ZHURAVSKIY, YU. I., ZHIGULIN, L. F.

"Possibility of Block Synchronization with Respect to Request Combinations in Systems with Blocking"

V sb. Peredacha diskret. soobshch. po kanalam s gruppiruyushchimisya oshibkami (Transmission of Digital Messages over Channels with Group Errors -- collection of works), Moscow, Nauka Press, 1972, pp 68-74 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V458)

Translation: An algorithm is presented for the operation of a system with blocking in the synchronization mode. It is proposed that synchronization be realized with respect to request combination in the blocking zone of the master station receiver. A study was also made of the choice of the request combination, in particular, the requirements imposed on the autocorrelation function of the request combination.

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Composite Materials

USSR

UDC 678.539.3+539.4

TARNOPOL'SKIY, YU. M., POLYAKOV, V. A., and ZHIGUN, I. G., Institute of Mechanics of Polymers of the Academy of Sciences Latvian SSR, Riga

"Composite Materials Reinforced by a System of Three Straight Orthogonal Reciprocal Fibers." Part One. Calculation of Elastic Characteristics.

Riga, Mekhanika Polimerov, No 5, Sep/Oct 73, pp 853-860

Abstract: Previously developed methods of the theory of reinforced media for laminated or fibrous materials are used for the study of the effectiveness of a trivariate reinforcement. The suggested methods for the calculation of elastic characteristics are based on the reduction of a three-dimensional structure to a two- or one-dimensional structure by means of introduction of a modified matrix. The properties of the matrix are determined by the modulus of elasticity of the bonding agent and the reinforcement coefficient in one of the three directions. Expressions are derived for the approximate estimate of elasticity characteristics of materials with high-modulus reinforcement. An essential increase of the transversal modulus of elasticity, if compared with the shear modulus, was disclosed even at an insignificant coefficient of reinforcement in the third direction. The

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USSR

TARNOPOL'SKIY, YU. M., et al., Mekhanika Polimerov, No 5, Sep/Oct 73, pp 853-860

principal gain of the latter consists in the sharp increase of the resistance to interlayer displacement and of the resistance to transversal tear away. Two figures, one table, 17 formulas, eight bibliographic references.

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USSR

UDC 678.5.06:539.3+539.4

GUNYAYEV, G. M., ZHIGUNM I. G., SORINA, T. G., and YKAUSHIN, V. A., All-Union Scientific Research Institute of Aviation Materials, Moscow; Institute of Mechanics of Polymers of the Academy of Sciences Latvian Soviet Socialist Republic, Riga

"Shearing Strength of Composites Based on Whiskered Fibers"

Riga, Mekhanika Polimerov, No 3, May-Jun 73, pp 492-501

Abstract: A study was made of the elastic and strength characteristics of unidirectional carbon plastics based on carbon fibers whiskered by silicon nitride filament crystals from the gaseous phase and titanium dioxide from aerosol. The advantages in bending properties of these composites are shown. For an approximate evaluation of the elastic properties of unidirectional composite based on whiskered fibers, summation formulas can be used which take into account the characteristics of the ruggedization of the filamentary crystals of the anisotropic matrix. Eight figures, five tables, thirteen bibliographic references.

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1/2 019

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--REACTION OF FORMALDEHYDE AND HYDROGEN PEROXIDE IN ACID SOLUTIONS

-U-

AUTHOR--BARANCHIK, G.N., ZHIGUNOV, I.S., KOROLEVA, G.N., PETRAYEV, E.P.,
KOROLEVA, G.N.

COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. KHIM. NAVUK 1970, (1),
119-21

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION MECHANISM, CHEMICAL DECOMPOSITION, CHEMICAL
REACTION KINETICS, FORMALDEHYDE, HYDROGEN PEROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1075

STEP NO--UR/0419/70/000/001/0119/0121

CIRC ACCESSION NO--AP0104473

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104473

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DECOMP. OF CH SUB2 O IN AQ. H SUB2 O SUB2 WAS 1ST ORDER IN RESPECT TO BOTH REACTANTS IN THE TEMP. INTERVAL 20-60DEGREES, WHILE THE DECOMP. OF H SUB2 O SUB2 IS ZERO ORDER IN RESPECT TO CH SUB2 O, AND 2ND ORDER IN RESPECT TO H SUB2 O SUB2 IN THE 20-40DEGREES INTERVAL, BUT 1ST ORDER AT 60DEGREES. THUS, THE REACTION INVOLVES THE OXID. OF CH SUB2 O BY 1 MOLE H SUB2 O SUB2 FORM H SUB2 O AND HCO SUB2 H, AND DECOMP. OF 2H SUB2 O SUB2 TO YIELD 2H SUB2 O AND O AS SIMULTANFOUS REACTIONS. THE ZERO ORDER IN RESPECT TO CH SUB2 O INDICATES AN INTERMEDIATE COMPLEX FORMATION IN WHICH CH SUB2 O-O PROBABLY UNDERGO A REARRANGEMENT THAT RESULTS PROBABLY IN PERFORMIC ACID, WHICH THEN DECOMPS. TO EITHER HCO SUB2 H OR CO SUB2 PLUS H SUB2 O. KINETIC DATA ON THE REACTION WERE TABULATED.

UNCLASSIFIED

USSR

UDC 539.3

ARTEM'YEV, V. P., YEFREMOV, G. M., ZHIKHAREV, F. K.

"Results of Experimental Studies of Doubly Convex Rectangular Shells of Standard Plane Elements"

V sb. Prostranstv. konstruktsii v Krasnoyarsk. kraye (Three-Dimensional Structures in the Krasnoyarsk Region -- Collection of Works), Krasnoyarsk, 1972, pp 141-154 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V162)

Translation: The structural characteristics and test data for a reinforced concrete model of a shell of positive curvature constructed from standard plane elements are presented. The stress-deformation state of the shell is analyzed as a function of the deformability of the contour structures under the action of uniformly distributed and concentrated loads. Authors' abstract.

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USSR

UDC 541.123:546.791.6

YEFIMOV, A. N., ZHIKHAREV, M. I., and ZHIRNOV, YU. P.

"Liquid-Vapor Equilibrium in the System $H_2O-HNO_3-UO_2(NO_3)_2$ at Pressures of 180, 360, and 720 mm Hg"

Leningrad, Radiokhimiya, Vol 12, No 5, 1970, pp 766-768

Abstract: The equilibrium was studied by the recycling method on a specially designed apparatus in which the pressure was maintained by means of a 100 l receiver. Equilibrium was reached usually in 40 min. In order not to change the liquid composition during the experiment, acid was added in concentrations close to that of the equilibrium composition, and the volume of the solution corresponded to the capacity of the trap. It was shown that lowering of the pressure -- P -- lowers the acid content -- y -- in equilibrium vapor at small y values; when $y \gg 15\%$ the effect of pressure is the opposite. This relationship is quite linear in Othmer coordinates, permitting interpolation for technological purposes. The addition of uranyl nitrate to the binary system H_2O-HNO_3 increases the content of nitric acid in equilibrium vapor, the salt "salts out" the acid into the vapor phase. The salting-out effect of uranyl nitrate increases with higher salt concentration and with lower acid concentration.

1/1

PHYSICAL CHEMISTRY

ZHIKHAREV, V.S.

JRS (6/430
8 Nov. 74

RADIATION CLEANSING OF WASTE WATER FROM ORGANIC POLLUTANTS

UDC 628.39/36+54.1.15

(Article by N. A. Vokkova, V. S. Zikharev, Institute of Physical Chemistry, Lenin St., Pishchakovskiy Acad. Sci. USSR, Kiev, Kalmukhsynaya, Tekhnologiya, Krasnaya, No 6, 1973, signed to press 13 December 1973, pp 45-50)

Because of the threat of continuing pollution of the environment by industrial and domestic wastes, in recent years increased attention has been focused on improving industrial production and the cleansing of waste water. It is especially important to search for methods of cleansing waste water of toxic and biologically nondegradable substances. During the past decade, as a result of the development of atomic energy and the creation of powerful isotropic sources of radiation and electron accelerators, the attention of investigators has been focused on the study of the possibility of using ionizing radiations for cleansing waste water [1-6].

This survey is devoted to an examination of published data concerning the effect of ionizing radiation on the oxidation and conversion of water-soluble organic impurities in waste water. We have generalized the results of investigations concerning radiation-induced changes in the basic characteristics of waste water containing organic pollutants -- the chemical absorption of oxygen (CAO or oxidizability) and the biochemical consumption of oxygen (BCO); an examination was also made of the effect of radiation on the change in biodegradable properties of organic impurities. An analysis was made of economic evaluations of the radiation method of cleansing as well as further ways to intensify it.

Radiation processing is converting into use for oxidizing organic components of waste water: sterilizing, modifying the biological "rough" organic impurities, changing the colloid properties (the effect of radiation on the rate of sedimentation of particles and the concentration of hard substances in sediment, the rate and degree of sludge dehydration under filtration).

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USSR

USSR

UDC 628.33/36+541.15

VYSOTSKAYA, N. A. and ZHIKHAREV, V. S., Institute of Physical Chemistry imeni L. V. Pisarzhevskogo, Academy of Sciences, Ukrainian SSR

"Radiation Purification of Polluted Waters From Organic Impurities"

Kiev, Khimicheskaya Tekhnologiya, No 6, Nov/Dec 73, pp 45-50

Abstract: Radiation treatment was used for the oxidation of the organic components of polluted water, for the sterilization and the modification of the biologically stable assembly of organisms, and for the alteration of colloidal properties. The mechanisms for the effect of the radiation in aqueous solutions, involving species such as H^{\bullet} , $H_2O^{\bullet-}$, HO_2 , and $O_2^{\bullet-}$, as well as OH , are discussed and the effect of 1 millirad is calculated. Permanganate, dichromate and other oxidizing agents can be used to determine the "oxidizability" of polluted waters, the value of which is characteristic of a particular water. Twenty individual compounds, such as phenols, nucleotides, and glucose are considered relative to their susceptibility to and their required conditions for oxidation by radiation. The generation of ozone during the radiation and its effects during the purification of water are presented separately. An economic evaluation is also included.

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Radiation Chemistry

USSR

UDC 628.543.661.7

TSUTSARIN, V. V., BYALKOVSKIY, N. N., YATSUN, V. V., ZHIKHAREV, V. S., and
VYSOTSKAYA, N. A., Institute of Physical Chemistry, Academy of Sciences
UkrSSR, Chemical-Pharmaceutical Plant imeni Lomonosov

"Changes in the Oxidizeability of Aqueous Solutions of Some Organic Materials
Due to the Action of Radiation"

Kiev, Khimicheskaya Tekhnologiya, No 3 (57), May-Jun 71, pp 12-15

Abstract: Oxidizeability characterizes total content of the reducing agents
in water. It is expressed by the amount of oxygen needed for the oxidation
of organic material contained in 1 l of solution to CO₂ and water. Changes
of this oxidizeability in waste waters of the Kiev Chemical-Pharmaceutical
Plant taking place upon γ -irradiation with a Co⁶⁰ source were studied.
These waters contain about 30 inorganic impurities and 70 of the organic
nature. In addition, model systems containing methanol, isopropyl alcohol,
phenol, metacrylic acid, and their mixtures were investigated. Irradiation
was found to lower the oxidizeability, leading occasionally to formation of
precipitates. The model system showed more pronounced lowering of the
oxidizeability than natural waste waters, because the latter most probably
contained many admixtures capable of oxygen consumption.

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Heat Treatment

USSR

UDC 669.295.018.29.621.785

ZHIKHAREV, V. V., YEVSEYEVA, I. A., CHUPRIKOV, A. V., ROMANOVA, N. A., PAVLUSHINA, G. M., OSADCHIY, V. B.

"Influence of Heat Treatment on Special Properties of Titanium Foil"

Nauchn. Tr. N-i. i Proyechn. In-t Redkomet. Prom-sti [Scientific Works of Scientific Research and Planning Institute for the Rare Metals Industry], 1971, Vol. 32, pp. 83-87. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I695 by the authors).

Translation: The influence of heat treatment on the special properties of Ti foil designed for the production of solid electrolytic condensers is studied. 3 figs; 1 table, 4 biblio refs.

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USSR

UDC 669.294.5.293.018.5

ZHIKHAREV, Yu. V., KOVALEV, K. S., NOVIKOVA, S. M., ROMANOVA, N. A., CHUPRIKOV,
~~A. V.~~

"Study of the Possibility of Replacing Tantalum Foil Used for Manufacture of Dry Electrolytic Condensers With Tantalum-Niobium Alloy Foil"

Nauchn. Tr. N-i. i Projektn. In-t Redkomet. Prom-sti [Scientific Works of Scientific Research and Planning Institute for the Rare Metals Industry], 1971, Vol. 32, pp. 66-70. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I788 by the authors).

Translation: The permissible content of Nb in Ta which does not worsen the special characteristics of condenser foil is determined. A possible area of application of foil of Ta-Nb alloys in condensers of various capacities is indicated. The basic electrical characteristics of dry condensers of various capacities made of Ta-Nb alloys are presented. 2 figs; 4 tables; 3 biblio refs.

1/1

USSR

UDC: 621.319.4

ZHIKHAREV, Yu. V., KOVALEV, K. S., NOVIKOVA, S. M., ROMANOVA, N. A., CHUPRIKOV, A. V.

"Investigation of the Possibility of Substituting Tantalum-Niobium Alloy Foil for the Tantalum Foil Used in Making Dry Electrolytic Capacitors"

Nauchn. tr. N.-i. i proyekt. in-t redkomet. prom-sti (Scientific Works of the Scientific Research and Design Institute of the Rare Metals Industry), 1971, 32, pp 66-70 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V328)

Translation: The authors consider the possibility of substituting tantalum-niobium alloys for the tantalum used in making capacitor foil. An investigation is made of the effect which the niobium content in tantalum has on the special electrical properties of capacitor foil. It is shown how the heat treatment temperature affects the properties of foil made from tantalum-niobium alloys. The permissible concentration of niobium in tantalum is determined which does not have an adverse affect on the special characteristics of capacitor foil. The potential field of application of foil made from niobium-tantalum alloys in capacitors of various ratings is indicated. The basic electrical characteristics are given for dry capacitors of various ratings made from tantalum-niobium alloy foil. Two illustrations, four tables. Resumé.

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USSR

UDC: 621.319.4

KOVALEV, K. S., ZHIKHAREV, Yu. V., NOVIKOVA, S. M., ERLIKH, E. A.

"Increasing Cold Resistance in Foil Tantalum Capacitors With a Working Voltage of 6 and 15 Volts"

Nauch. tr. N.-i. i proyekt. in-tredkomet. prom-sti (Scientific Works of the Scientific Research and Design Institute of the Rare Metals Industry), 1971, 32, pp 76-83 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V327)

Translation: The authors investigate factors which have a considerable influence on the electrical characteristics of tantalum foil capacitors with a working voltage of 6 and 15 volts. A new grade of paper is selected for the liners. The optimum coefficient ϕ for the paper and its thickness are determined. The tantalum foil oxidation voltage and geometric dimensions of the plates are more precisely determined. Two illustrations, bibliography of five titles. Resumé.

1/1

- 156 -

USSR

UDC: 621.319.4

KOVALEV, K. S., ZHIKHAREV, Yu. V., VINOGRADOV, V. V., YEVSEYEVA, I. A.,
ROMANOVA, P. A., PAVLUSHINA, G. M.

"Some Singularities of Heat Treatment in the Production of Capacitor Foil
From Tantalum"

Nauchn. tr. N.-i. i proyekt. in-t redkomet. prom-sti (Scientific Works of the
Scientific Research and Design Institute of the Rare Metals Industry), 1971,
32, pp 71-76 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V329)

Translation: An investigation is made into the heat treatment of thin foils
in connection with solution of the problem of making high-quality capacitor
foil from tantalum. Three illustrations, one table, bibliography of three
titles. Resumé.

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UDC: 533.951

USSR

TUMAKAYEV, G. K., ZHIKHAREVA, T. V., and LAZOVSKAYA, V. R.

"Kinetics of the Physico-Chemical Processes in a Shock Wave of Mercury Vapor: Part 2, the Relaxation Zone; Initial Ionization Region"

Leningrad, Zhurnal tekhnicheskoy fiziki, No 3, 1973, pp 579-587

Abstract: The first part of this article appeared in the journal named above (vol 16, 1971, p 1986). In the second part, given in the present paper, an analysis is made of the kinetics of excitation and ionization of mercury atoms in the relaxation zone of the shock wave path through mercury vapor. The basis of this analysis is provided by experimental data obtained by the authors in an earlier paper (G. K. Tumakayev, et al, in the collection Aerofizicheskiye issledovaniya sverkhzvukovykh techeniy -- Aerophysical Investigations of Ultrasonic Currents -- edited by Yu. A. Dunayev, "Nauka," 1967) on the distribution of normal 6^1SO and excited mercury atoms in states $6^3\text{P}_{0,1,2}$ and on the electron concentration behind the front of the shock wave. It is found that, for Mach numbers between 7 and 15, the population of the block of $6^3\text{P}_{0,1,2}$ states in the whole region of initial ionization is the result

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USSR

UDC: 533.951

TUMAKAYEV, G. K., et al, Zhurnal tekhnicheskoy fiziki, No 3, 1973,
pp 579-587

of inelastic electron-atom collisions. The authors express their
thanks to Yu. A. Dunayev for his discussion of the work and to
R. N. Orlova for her assistance with the computations.

2/2

- 52 -

1/2 050
UNCLASSIFIED
TITLE--KINETICS OF THE BEGINNING IONIZATION OF A MONATOMIC GAS BEHIND THE
SHOCK WAVE FRONT -U- PROCESSING DATE--23OCT70
AUTHOR--(02)-ZHIXHAREVA, T.V., TUMAKEYEV, G.K.
COUNTRY OF INFO--USSR 2
SOURCE--TEPLOFIZIKA VYSOKIKH TEMPERATUR, VOL. 8, JAN.-FEB. 1970, P. 40-45
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SHOCK WAVE FRONT, GAS IONIZATION, GAS DENSITY, IONIZATION
CROSS SECTION, EXCITATION CROSS SECTION, MERCURY, ARGON, XENON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/0398 STEP NO--UR/0294/70/008/000/0040/0045
CIRC ACCESSION NO--AP0111591
UNCLASSIFIED

2/2 050

CIRC ACCESSION NO--AP0111591
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT. THEORETICAL ANALYSIS OF THE CHARACTERISTICS OF THE FIRST IONIZATION PHASE OF AR, XE AND HG ATOMS BEHIND THE SHOCK WAVE FRONT FOR A CONCENTRATION OF ROUGHLY 100,000 NORMAL ATOMS PER CC AT TEMPERATURES FROM 9000 TO 18,000 DEG K. THE EFFECT OF RESONANCE RADIATION ON THE IONIZATION KINETICS IS FOUND TO BE INSIGNIFICANT WHILE THE STEPWISE IONIZATION DURING ATOM ATOM COLLISIONS APPEARS TO BE DOMINANT DURING THE INITIAL PHASE OF IONIZATION. EXCITATION CROSS SECTIONS AND EXCITATION IONIZATION CROSS SECTIONS ARE OBTAINED FOR HG DURING ATOM ATOM COLLISIONS FROM EXPERIMENTAL DATA FOR THE DISTRIBUTION OF ELECTRONS AND NORMAL AND EXCITED HG ATOMS IN THE RELAXATION ZONE OF THE FLOW. FACILITY: AKADEMIIA NAUK SSSR, FIZIKO TEKHNICHESKII INSTITUT, LENINGRAD, USSR.

UNCLASSIFIED

Acc. Nr:

AP0049766

Abstracting Service:

CHEMICAL ABST. J-70

Ref. Code:

4R 0191

101291n Effect of the molecular-weight distribution of suspension poly(vinyl chloride) on the technological properties of rigid compositions. Manushin, V. I.; Balashova, T. S.; Baranova, L. G.; Isakova, V. A.; Zhikharevich, L. B. (USSR). *Plast. Massy* 1970; (1), 26-9 (Russ). ~~The effects of the mol. wt. distribution of suspension poly(vinyl chloride) (I) (3 imported and 2 Soviet brands) on its extrudability were studied.~~ The processability of rigid I compns. was evaluated from the melt index and the behavior of I during processing. Differential mol. wt. distribution curves indicated that I processability could not be properly evaluated from Finketscher const., but also required an evaluation of mol. wt. distribution. Fractional compn. of I and its statistical distribution width indicated a relation between the melt index and the heterogeneity factor (*U*) characterizing the statistical distribution width of I. Two regression equations were derived by statistical treatment of *U* and the melt index. The equations indicated that I extrudability could be quant. evaluated from *U*.

CKJR

REEL/FRAME
19801684

USSR

UDC 539.384:669-41

SEVERDENKO, V. P. and ZHIKIN, YU. D.

"Effect of Neutral Surface Curvature on the Bending Moment in the Case of Pure Bending of Metal Bands"

Minsk, Vestsi Akedemii Navuk BSSR, Seryya Fizika-Tekhnichnykh Navuk, No 3, 1971, pp 9-12

Abstract: In the case of bending of wide flat bands the longitudinal elongation of the fibers is accompanied by radial contraction. If the latter is restricted it results in radial tension. The difference between the two stresses is a function of the longitudinal strain, which is proportional to the curvature. Therefore, it is possible to express the bending moment as a function of curvature. Equation (6) gives the relation for both the elastic and plastic deformations. The bending moment calculated by the above equation for a steel band 100 mm wide and 8 mm thick is shown on a graph as a function of curvature.

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USSR

UDC 619:616.981.42+616.981.51.084:7:636.32/.38

GRYAZIN, V. I., Professor, SAL'NIKOV, F. Ye. (Deceased), PANKRATOV, L. D.,
TYCHINA, O. F., Candidates of Veterinary Sciences, and ZHILA, M. Ye., Junior
Scientific Associate Kazakh Scientific Research Veterinary Institute

"Study of a Combined Vaccine Against Brucellosis and Anthrax in Sheep"

Moscow, Veterinariya, No 7, 1970, pp 38-40

Abstract: A combined dry vaccine against brucellosis and anthrax was prepared from standard strains No. 19 and STI-1 of Brucella and B. anthracis, respectively. Guinea pigs and sheep were immunized with vaccine containing the two antigens in a ratio corresponding to that which would be used in separate administration of monovaccines against the two diseases. Intensive immunity to infection with virulent strains of Br. melitensis and B. anthracis developed, indicating an absence of mutual interference between the two antigens. Administration of the combined vaccine to sheep produced immunity to anthrax that lasted for more than 2 years and immunity to brucellosis for up to 17 months.

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USSR

UDC 547.26*118

PINCHUK, A. M., and ZHILA, S. I., Institute of Organic Chemistry, Academy of Science, UkrSSR

"The Reaction of the N-chloro-N-methylamines of Dialkylphosphoric Acids with Compounds of Trivalent Phosphorus"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, p 2582

Abstract: The title reaction occurs easily for phosphorus compounds such as trichlorophosphorus, triarylphosphines, aryldichlorophosphines, and other compounds not containing the alkoxy group. For dialkoxy chlorophosphines, however, a reaction occurs not only with the nitrogen-chlorine bond but also with the dialkoxyphosphonyl group. Thus, the title reaction using triphenylphosphine occurs in a solution of boiling benzene or carbon tetrachloride with the formation alkyl chlorides and the formation of phosphonidophosphates. However, if trichlorophosphine and phenyldichlorophosphine are used as a solvent, the alkylchloride separates as before but bisphosphorated alkylamines are formed. This reaction may be used to synthesize new phosphorus compounds and also those whos synthesis is difficult by current methods.

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USSR

UDC 547.241

FESHCHENKO, N. G., MAZEPA, I. K., ZHILA, S. I., and KIRSANOV, A. V.,
Institute of Organic Chemistry, Ukrainian Academy of Sciences

"Hexaalkyliodobiphosphonium Pentaiodides"

Leningrad, Zhurnal Obschey Khimii, Vol 41, No 11, Nov 1971, pp 2,375-2,378

Abstract: The highly reactive hexaalkyliodobiphosphonium pentadioxides (I), formed during alkylation of phosphorus diiodide or of red phosphorus in the presence of iodine, are not well known. The authors tested the reactions of compounds (I) with a number of substances: water, alcohols, phenetole, diisopropyl and dibutyl ethers, tetrahydrofuran, and tricyclohexylphosphine. It was concluded that compounds (I) are very reactive both toward electrophilic (sulfur) and with nucleophilic (metals, water, alcohols, trialkylphosphines) agents.

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12

USSR

UDC 539.1.074.3

BORISOV, A. A., BUGORSKIY, A. P., BUSHNIN, Yu. A., DEREVSHCHIKOV, A. A.,
DUNAYTSEV, A. F., ZHIL'CHENKOV, V. D., MATULENKO, Yu. A., MESHCHANIN, A. P.,
MIKHAYLOV, Yu. V., NURUSHEV, S. B., SEN'KO, V. A., SMIRNOV, V. V., SMIRNOV,
Ye. V., SISKIN, V. V., SOLOV'YEV, L. F., and SOLOV'YANOV, V. L., Institute
of High-Energy Physics, Serpukhov

"A Hodoscopic Installation for Investigation of the Elastic Scattering of
High-Energy Particles"

Moscow, Pribory i Tekhnika Eksperimenta, No 3, May/Jun 73, pp 49-53

Abstract: A description is given of a hodoscopic installation, developed at
the Institute of High-Energy Physics, for investigation of the elastic scat-
tering of high-energy particles within the pulse range of 30-60 gigaelectron
volts/sec. The range of dispersion angles covered by the installation is
0-29 millirads with an angular resolution of ± 0.17 millirad. The total
solid angle is 39 microsteres. The pulse is determined to within $\pm 0.22\%$.
The resolving time is 35 nanosec. The dead time is 50 microsec. The pulse
pass band of the spectrometer is 8%. The statistics-setup is up to 10^6 per
hour. The installation is electrically coupled to a "Minsk-22" computer,
which stores and processes the information during the experiment. The
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USSR

BORISOV, A. A., et al., Pribory i Tekhnika Eksperimenta, No 3, May/Jun 73, pp 49-53

obtained results are immediately printed out in the form of tables and graphs, and also appear on the oscillograph screen. Monitoring equipment has been developed, which keeps track of proper operation of the hodoscopes. The first results have been obtained on the scattering of π^- -mesons on nuclei at a pulse of 50 gigaelectron volts/sec and of protons within the initial-pulse range of 30-60 gigaelectron volts/sec. 3 figures. 2 tables. 3 references.

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USSR

UDC 518:517.25

ZHILENKO I. S.

"Approximate Solution of an Overdetermined System of Linear Equations"

Tr. Tadzh. politekhn. in-ta (Transactions of the Tadzhik Politechnic Institute), No 7, 1971, pp 120-124 (from Referativnyy Zhurnal -- Matematika, No 7, July 1971, Abstract No 7B905, by I. Shelikhova)

Translation: An approximation method of solving overdetermined systems of linear equations using an orthogonal vertical or horizontal matrix of coefficients often encountered in equalizing geodesic calculations is presented. The approximation vector L_0 , which is the orthogonal projection of the measurement vector in a subspace spanned by some vector c is defined as a result of solving the error equation, given the suitable condition of orthogonality. It is shown that in the construction of the vector L_0 (by simple combinations) the matrix of the initial equations does not undergo any deformations. Formulas for converting from L_0 to the equalizing vector are derived.

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- 33 -

USSR

2
UDC 591.175

ZHILKO, T. P. and KOLYV, A. D., Marine Biology Division, Academy of Sciences USSR, Vladivostok

"The Quantitative Relationship Between the Individual Variability of Muscle Tissue Thermostability and the Van't Hoff Coefficient of the Thermostability Curve"

Moscow, Zoologicheskii Zhurnal, No 2, 1970, pp 193-197

Abstract: The thermostability of muscle tissue in 10 different animal species (*Oreomytilus grajanus*, *Littorina brevicula*, *L. kurila*, *L. mandchurica*, *Strongylocentrotus intermedius*, *S. nudus*, *Phrynocephalus helioscopus*, *Lagurus lagurus*, *Hirudo medicinalis*, and *Rana temporaria*) was determined along with individual variations. Semilogarithmic thermostability graphs were constructed for the following conditions: June-July, water temperature 12-20°, and salinity 30-35‰. Individual variability was calculated from the results of experiments in which the length of time muscle excitability was preserved averaged about 30 min. The value of dispersion of the logarithm of the length of time excitability was preserved D ($\lg t'$) served as a parameter of individual variability of cell

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USSR

ZHILENKO, T. P., Et al., Moscow, Zoologicheskii Zhurnal, No 2, 1970, pp 193-197

thermostability. Individual variability was closely correlated with the Vant Hoff coefficient as follows:

$$D(\lg t') = \frac{a}{\lg Q_{10}} \quad (a=0.013)$$

This relationship was common to all the species under study.

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- 03 -

USSR

UDC 616.388.6

ZHILEVICH, A. V. and L. N. SHIRINKINA, Institute of Microbiology imeni
Avgust Kirkhenshteyn, Academy of Sciences, Latvian SSR

"Mutagenic Effect of Moloney Sarcoma Virus on Wistar Rat Cells"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 7, 1971, pp 62-66

Abstract: Exposure of a culture of rat (Wistar) embryo fibroblasts to Moloney sarcoma virus produced a substantial number of cells with chromosome aberrations, including chromatid and isochromatid breaks. The injuries were random since different chromosomes were affected. In vivo study of tumors induced by Moloney sarcoma virus in young Wistar rats revealed a substantial number of numerical rather than structural aberrations in the chromosomes. In a third series of experiments, spleen cells from tumor-carrying rats were found to have a higher number of aneuploid cells than the control, although the tumor cells were diploid.

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- 9 -

UDC 582.288.32:576.8.097.29

USSR

KENINA, Sh. M., OLIFSON, I. Ye., and ZHILIN, A. N., Orenburg State Medical Institute

"Fat-Splitting Capacity and Toxicity of *Fusarium sporotrichiella* Bilal"

Leningrad, Mikologiya i Fitopatologiya, No 3, 1970, pp 247-250

Abstract: Five strains of *F. sporotrichiella* var. *sporotrichioides* and four strains of *F. sporotrichiella* var. *poae* were cultured on a mineral medium containing sunflower oil in order to determine whether there is a relationship between the lipolytic ability of the fungi and their toxicity. All strains grew well, but the acid numbers of the sunflower oil (indicating the lipolytic activity of the fungi) differed. Wheat kernels were then infected with the various fungal strains and either fed to pigeons or applied to the skin of rabbits. A comparison of the acid numbers of the infected sunflower oil with the toxicity of the fungi on wheat kernels failed to show any correlation. For example, strains 319 and 2,009, found to be nontoxic according to both bioassays, have higher acid numbers than the toxic strains 2,005 and 5,253.

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USSR

UDC: 621.317.6

ZHILIN, N. S., SUP'YAN, V. Ya.

"A Method of Determining the Amplitude-Phase Characteristics of Attenuators"

Tr. Tomskogo in-ta radioelektron. i elektron. tekhn. (Works of the Tomsk Institute of Radio Electronics and Electronic Technology), 1970, 16, pp 20-23 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A224)

Translation: The voltage of a self-oscillator synchronized by an external signal contains information on the phase of this external signal. To determine the amplitude-phase characteristics of an attenuator, use may be made of the principle of transferring the initial phase of the synchronizing signal to the output voltage of the oscillator, since the amplitude of this voltage under certain conditions is independent of the amplitude of the synchrosignal. This makes it possible to eliminate the amplitude-phase errors introduced by the phase measuring device. A schematic diagram is given as well as a brief theory of an installation for determining the amplitude-phase characteristics of attenuators. Bibliography of one title. E. L.

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USSR

UDC: 621.317.373

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ZHILIN, N. S.

"The Influence of Transit Effects on the Tube Insertion Phase Shift When There is a Change in the Amplitude of the Input Signal"

Tr. Tomskogo in-ta radioelektron. i elektron. tekhn. (Works of the Tomsk Institute of Radio Electronics and Electronic Technology), 1970, 16, pp 14-19 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A187)

Translation: On the basis of analysis of tube operation in the SEF range it is shown that a change in the average electron transit angle when there is a change in the amplitude of the input signal causes an error in the phase difference due to a change in the phase of the induced current as well as the input parameters of the tube and nonlinear distortions of the signal. The formulas which are derived may be used to select the necessary tube type for phase metering equipment. E. L.

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- 321 -

USSR

UDC 613(470)(091)

SHITSKOVA, A. P., AKSYUK, A. P., BEYLIKHS, G. A., GHOYEVA, V. L., GUSEV, M. I.,
ZHILIN, P. N., NOIKIN, Ye. L., PAL'TSEV, Yu. P., and YASTREBOV, G. G.

"Coping With Current Health Problems in the RSFSR"

Moscow, Gigiyea i Sanitariya, No 12, 1972, pp 8-16

Abstract: Health problems were a major concern of the communist leaders after the revolution who swiftly organized agencies and services to deal with epidemics and famines. As these were brought under control, health officials became involved in city planning, design and building of houses, etc. The increasing tempo of industrialization led the authorities by the 1930's to study atmospheric pollution and the disposal of municipal and industrial sewage. Water pollution and suitable use of water resources were major interests by the 1940's. Following the war, industrial hygiene and occupational diseases along with food poisonings became the center of attention. In the 1960's research was focused on the problems created by the chemicalization of agriculture, the use of pesticides in particular. The effects of exposure to ultrasound, radiation, microwaves, and other technological advances are now under study. Much stress is placed on preventive medicine, with frequent mass check-ups of the population, particularly children and adolescents. The importance of

USSR

SHITSKOVA, A. P., Gigiyena i Sanitariya, No 12, 1972, pp 8-16

comprehensive, accurate health statistics was recognized in the 1920's and they are constantly being refined and improved as an indispensable basis for planning and taking effective action.

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S/019/62/000/007/077/088
A154/A126

AUTHORS: Koshelev, A.A.; Zhilin, V.A.; Os'kin, N.M.; Magid, Ya.D.; Nes-
terov, N.I.

TITLE: A broaching machine

PERIODICAL: Byulleten' izobreteniy, no. 7, 1962, 63

TEXT: Class 49e, 8₀₁. No. 146163 (742543/25 of August 24, 1961). 1) A
broaching machine for broaching complex holes into profiled shapes, provided
with beds (lozhmenty) for setting up the workpiece is described. It is distin-
guished by the fact that, to broach parts with a longitudinal curvature, the ma-
chine has a device for preliminary stretching of the workpiece. 2) A machine
as in 1, but distinguished by the fact that the device for preliminary stretch-
ing of the workpiece is made in the form of successively actuated hydraulic
clamps placed at the ends of the workpiece. 3) A machine as in 1 and 2, but
distinguished by the fact that the saddles of the machine can move independent-
ly to broach the inner cavity of a workpiece lying asymmetrically in respect to
its outer surface.

Card 1/1

USSR

UDC 621.396.946

ZHILIN, V. A.

"Comparative Analysis of Methods of Multistation Access to a Satellite Radio Relay with Pulsed Data Transmission Procedures"

Tr. TsNII mor. flota (Works of the Central Scientific Research Institute of the Maritime Fleet), 1970, vyp. 131, pp 3-16 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A193)

Translation: A study was made of four methods of multistation access to a satellite radio relay, and the possibilities of their application in the radio communications system of the maritime fleet are determined. An estimate of each method is presented from the energy point of view. The restrictions imposed by the Doppler effect and the tuning frequency instability of the transmitter and receiver are analyzed. There are 2 illustrations, 4 tables and a 5-entry bibliography.

1/1

USSR

UDC 620.194.8:621.9.01

ZHILIN, V. A., Scientific Research Institute of Machinery Manufacturing
Technology, Rostov-on-Don

"Corrosion Failure of Hard Alloys Under Contact Loads"

Kiev, Fiziko-khimicheskaya mekhanika materialov, Vol 8, No 1, 1972, pp 56-58

Abstract: The characteristics of corrosion failure of W-Co alloys (at room temperatures) in liquid media containing sulfide compounds as well as the effect of contact stresses on this process were studied. The materials involved were VK8, VK11V, and VK20K alloys of the W-Co group; the liquid medium was emulsol (a coolant-lubricant in metal cutting and working). No traces of corrosion failure were observed under stresses up to 50 kg/mm². As the pressures were increased to the order of 100 kg/mm² and higher, the test pieces revealed distinct sections similar in appearance to those of high-temperature oxides of W-Co alloys. The results of the study indicate that emulsion components such as sulfides and free oxygen as well as high temperatures accelerate corrosion failure processes. Corrosion-affected areas near the impressions of diamond indentors and diamond needle scratches are included in the study. (3 illustrations, 5 biblio. references)

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USSR

UDC: 621.396.96:621.391.1

ZHILIN, V. A.

"Fluctuation Errors in Automatic Tracking of the Time Position of a Periodic Pulse Signal"

Tr. TsNII Mor. flota (Works of the Central Scientific Research Institute of the Maritime Fleet), 1970, vyp. 124, pp 3-14 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12G21)

Translation: The author discusses fluctuation errors of pulse tracking systems in radar and radio navigation devices caused by noises which arrive at the tracking system input together with the useful signal. These errors depend not only on the signal-to-noise ratio in the given frequency band, but also on the shape of the signal and the noise characteristics, and on the method of time discrimination of the signal. Formulas are derived for the most typical methods which can be used to evaluate their resistance to interference and to determine the dispersion of fluctuations. Four illustrations, bibliography of two titles. N. S.

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Corrosion

USSR

UDC 620.193:669.018.25

ZHILIN, V. A. and DRUZHININ, V. M., Rostov Scientific Research Institute of the Technology of Machine Building.

"Investigation of the Electrochemical Corrosion of Hard Alloys"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug 70, pp 68-71

Abstract: Results are presented of an investigation of electrolytic corrosion of VK3, T15K6, and T30K4 hard alloys. Sulfur emulsions, which are widely used for cooling in the process of cutting, served as the electrolytes. With an increase of current density from 0.5 to 35 ma/cm² the intensity of the corrosion of titanium-tungsten hard alloys increased 60-fold according to the parabolic law. The dependence of the corrosion intensity on the current density of tungsten-cobalt alloys has an inflection in the area of 10-12 ma/cm² current density. Up to the point of inflection the corrosion intensity of tungsten-cobalt hard alloys is higher than that of titanium-tungsten-cobalt, the current densities being equal.

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1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--LIQUID CORROSION OF HARD ALLOYS AT ELEVATED TEMPERATURES -U-
AUTHOR--(02)-ZHILIN, V.A., DRUZHININ, V.M.
COUNTRY OF INFO--USSR
SOURCE--POROSH. MET. 1970, 10(2), 95-7
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS
TOPIC TAGS--HARD ALLOY, METAL CUTTING, CORROSION, CEMENTED CARBIDE,
CUTTING TOOL, SULFUR, CUTTING FLUID, METAL COOLING/(U)UK8 HARD ALLOY,
(U)T15K6 CEMENTED CARBIDE, (U)T14K8 CEMENTED CARBIDE, (U)T30K4 CEMENTED
CARBIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1677 STEP NO--UR/0226/70/010/002/0095/0097
CIRC ACCESSION NO--AP0118655
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118655

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CORROSION AT ELEVATED TEMPS. WAS TESTED UNDER CONDITIONS WHICH SIMULATED METAL CUTTING WITH A HARD METAL CUTTING TOOL COOLED BY A COOLING FLUID. AT 20-300DEGREES THE CORROSION WAS NEGLIGIBLE. ABOVE THIS TEMP., CORROSION INCREASED SHARPLY, AND ATTAINED A MAX. AT 600-50DEGREES. AT 800-850DEGREES A VAPOR JACKET WAS FORMED AROUND THE SPECIMEN, THEREBY BREAKING THE CONTACT BETWEEN THE COOLING FLUID AND THE SPECIMEN; THE RATE OF CORROSION UNDER THESE CONDITIONS DROPPED SHARPLY. CORROSION WAS 5-10 TIMES HIGHER IN A SULFURIZED FLUID THAN IN WATER. OF THE 4 ALLOYS TESTED T30K4 CORRODED LEAST, T14K8 AND T15K6 CORRODED MOST, WHEREAS THE HARD ALLOY VK8 WAS BETWEEN THE 2 EXTREMES. FACILITY: ROSTOV.-NA-DONU NAUCH.-ISSLED. INST. TEKHNOL. MASHINOSTR., ROSTOV-ON-DON, USSR.

UNCLASSIFIED

1/2 045 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF A LONGITUDINAL MAGNETIC FIELD ON THE STABILITY OF A FLOW
OF A CONDUCTING LIQUID -U-
AUTHOR--(03)-GENIN, L.G., ZHILIN, V.G., MANCHKHA, S.P.
COUNTRY OF INFO--USSR
SOURCE--TEPLCFIZ. VYS. TEMP. 1970, 8(2), 454-7
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--REYNOLDS NUMBER, MAGNETIC FIELD EFFECT, TURBULENT FLOW,
MERCURY, STAINLESS STEEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1420 STEP NO--UR/0294/70/006/002/0454/0457
CIRC ACCESSION NO--AP0133372
UNCLASSIFIED

2/2 045

UNCLASSIFIED

PROCESSING DATE--ZONOV70

CIRC ACCESSION NO--AP0133372

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF A LONGITUDINAL MAGNETIC FIELD (1.1 WEBERS-M PRIME²) ON THE TRANSITION FROM LAMINAR TO TURBULENT FLOW OF A CONDUCTIVE LIQ. WAS STUDIED FOR HG IN A STAINLESS STEEL TUBE OF 5.1-MM DIAM. AND 710-MM LENGTH BY THE PRESSURE DROP MEASUREMENT METHOD. THE FRICTION FACTORS AND PRESSURE DISTRIBUTION ALONG THE TUBE ARE PLOTTED AS A FUNCTION OF REYNOLDS NOS. (RE) FOR HG WITH AND WITHOUT A MAGNETIC FIELD AND WITH AND WITHOUT A TURBULENT FLOW INDUCING RING. A TRANSITION TO TURBULENT FLOW BEGINNING AT RE APPROXIMATELY EQUAL TO 3000 TO RE IS GREATER THAN 5000 WAS OBSD. IN THE MAGNETIC FIELD. FACILITY: INST. VYS. TEMP., MOSCOW, USSR.

UNCLASSIFIED

ENGINEERING

Aeronautical and Space

USSR

UDC 533.6.011

BURAKOV, I. I., ZHILIN, YU. L.

"Thin Bodies of Rotation with Minimum Wave Drag"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aero-hydrodynamic Institute), 1970, Vol 1, No 6, pp 108-112 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11B193)

Translation: The variation problem of constructing the generatrix of a thin body of rotation (with and without a channel) having minimum wave drag in a supersonic flow was investigated within the framework of linear theory. In addition to the coordinates of the initial and terminal points of the body, the position of an arbitrary number of internal points through which the desired contour must pass and also the volume of the body can be given. The solution was found by the method of transfer to a control outline as a result of which the investigated problem reduces to determining the optimal potential distribution $\phi(r)$, where r is the distance from the axis of symmetry, in the characteristic of the second set bounding the region of determinacy of the desired generatrix on the right. For determination of the potential on the indicated characteristic, more correctly, for the distribution of the derivative $\phi'(r)$, a finite formula is obtained. Utilization of the indicated

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BURAKOV, I. I., et al., Uch. zap. Tsentr. aero-gidrodinam. in-ta, 1970, Vol 1, No 6, pp 108-112

formula requires calculation of certain quadratures which are expressed in terms of elementary functions for a body of rotation without a channel. Examples of optimal bodies with a channel are presented for the case where the generatrix of the desired body passes through three given points: two terminal points and one point in the middle cross section. The indicated bodies are more "filled" than the combination of right and inverted truncated cones. Here, the gain with respect to the wave drag coefficient (by comparison with the body the outline of which is formed by a parabola passing through the same three points) is 16-24%.

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USSR

UDC 616-008.922.1.04-07:616-008.931:[577.158.47+577.8]-074

KHVATOVA, YE. M., RUBANOVA, N. A., and ZHILINA, I. A., Chair of Biochemistry,
Gorkiy Medical Institute

"The Activity of Monoaminoxidase and Respiratory Chain Enzymes in Acute Hypoxia"

Moscow, Voprosy Meditsinskoy Khimii, Vol 19, No 1, Jan/Feb 73, pp 3-5

Abstract: In rats suffering from circulatory hypoxia of the brain induced by ligation of one common carotid artery, the activity of monoaminoxidase (MAO) in brain mitochondria decreases by 29% as compared with control animals (sham surgery) and by 44% as compared with intact animals, and this reduction persists for at least 4 hrs. At the same time, the activity of succinate dehydrogenase (SD) and NADH-dehydrogenase (NADH-D) falls by about 23% in sham-operated controls but returns to normal in the experimental animals. In rabbits suffering from hypoxic hypoxia (air pressure in barochamber reduced to 310 mm Hg), NADH-D activity in brain mitochondria remains unchanged for 1 hr but decreases by a factor of 2 in 4 hrs. At the same time, SD activity increases by 22% and then returns to normal, while MAO activity first falls by 50% and then rises toward the normal level. Thus, hypoxia induces significant changes in respiratory enzyme activity, and the almost mirror-image changes in monoaminoxidase and succinate dehydrogenase confirm the concept of a mutual regulatory effect exerted by these two enzymes.

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Epidemiology

USSR

UDC 616.988.75-06:616.988.5]-053.8-036

ALEKSEYEVA, A. A., KETILADZE, Ye. S., KNYAZEVA, L. D., KRYLOV, V. F., GRUSHINSKAYA, I. A., ZHILINA, N. N., and STAKHANOVA, V. M., Clinical Department, Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR on the base of Clinical Infectious Disease Hospital No 82, Moscow

"The Course of Mixed Influenza-Adenoviral Infection in Adults"

Moscow, Klinicheskaya Meditsina, No 1, 1973, pp 101-105

Abstract: Of 1055 patients, age 16 to 78 admitted to the authors' hospital with respiratory symptoms during the 1969 and 1970 influenza A2-Hongkong epidemics, 158 (15%) were diagnosed after physical examination and laboratory tests as having a mixed influenza-adenoviral infection. About one-third of these had the clinical symptoms of adenoviral infection (toxicosis, headache, head cold, pain in the throat, cough, pharyngitis) along with the usual symptoms of influenza. In the other two-thirds, the disease proceeded asymptotically in the form of a virus carrier state or subclinically. The average duration of the above symptoms was much longer than in those suffering from influenza or adenoviral infection alone; pharyngitis persisted the longest. Systematic follow-up (2 years) of the patients with chronic adenoviral infection exacerbated by influenza confirmed the continued presence of adenoviruses even though the individuals felt well and exhibited no signs of inflammation of the respiratory tract.

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USSR

ZHILINSKAS, A. G., MOTSKUS, I. B., TIMOFEYEV, L. L.

"Bayes Method of Seeking Extreme with Limited Memory"

Avtomatika i Vychisl. Tekhn. [Automation and Computer Technology], 1972, No 6, pp 37-42 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V307, by the authors).

Translation: Assuming that the function to be optimized is a realization of a Gaussian homogeneous isotropic field, a Bayes method is studied for seeking the minimum with memory limited to two experimental results.

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USSR

UDC 62-506:519.83

ZhilinskAs, A. G., MotSkus, I. B., and Timofeyev, L.L.

"A Bayesian Method for Seeking an Extremum with Limited Memory"

Riga, Avtomatika i Vychislitel'naya Tekhnika, No. 6, 72, pp 37-42

Abstract: The problem is to find the minimum of a real function of many variables, assuming that at any step t in the solution only two previous results $(f(x_i), x_i)$ ($i=1, 2$) can be stored. The T -step method of searching for ξ is described by rules for planning δ_t^1 ($t=1, T+1$) and recording δ_t^2 ($t=2, T$). The rule for storing results in this method cannot be expressed with the analytical simplicity possible in the case of a Bayesian method of search in which the memory is limited to one result, as is described by ZhilinskAs and MotSkus in No. 4 of this journal for 1972. In some cases, it may be expedient simply to postulate simple storage rules and find only the optimum rules of planning. Two quasi-optimal storage rules are suggested.

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USSR

UDC 621.316.722.1

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ZHILINSKAS, P. Yu. P.

"Inductance In Pulse Regulator Of Stepped Up Output Voltage"

Tekhn. kibernetika (Engineering Cybernetics), Kaunas, 1970, pp 306-310 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10B373)

Translation: In a pulse regulator of d-c voltage, the output voltage can exceed the permissible collector-emitter voltage of the control transistor. To this end, two sources are provided at the input of the regulator. The first source is connected between the collector of a transistor and the cathode of a semiconductor diode; the second between the cathode of a semiconductor diode and the common conductor of the regulator. When the control transistor conducts, at the regulator output there is a voltage equal to the sum of the voltages of the sources. When the control transistor blocks, the semiconductor diode conducts, switching to the section collector-emitter of the first source. An expression is derived for calculation of the magnitude of the inductance of a choke during operation in a regime of continuous currents, which depends on the output voltage, the load, the period of the pulse repetitions and their relative duration, and the ratio of the magnitude of the voltages of the first and second sources. The graphic dependences are plotted of the magnitude of the inductance of the regulator choke with different ratios of the magnitude of the voltages of the sources, as a function of the relative duration of the pulses. 2 ill. 2 ref. V.Sh.

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USSR

UDC: 621.317.1

DAUNORAS, I. I., ZHILINSKAS, R.-P. P.

"Application of the Method of Signal-Flow Graphs to Solution of Some Nonlinear Problems"

Tr. nauch.-tekhn. konferentsii "Radio-elektronika" (Works of the Scientific and Technical Conference on Radio Electronics), Vol. 6, Kaunas, 1970, pp 324-328 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A294)

Translation: The authors discuss the problem of using the method of graphs for analyzing some systems of complex structure such as microwave measurement circuits with feedback. A microwave reflectometer which operates on the principle of automatic power control is analyzed. The block diagram, the complete graph, and calculations are presented. Bibliography of two titles.
E. L.

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USSR

UDC: 621.317.341.3.088:681.3

ZHILINSKAS, R. P., BUOZHIS, S. S.

"Computer Modeling of Reflectometer Errors by the Monte-Carlo Method"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Re-
ports of the All-Union Scientific and Technical Conference on Radio Engineer-
ing Measurements. Vol. 2), Novosibirsk, 1970, pp 27-30 (From RZh-Radiotekhnika,
No 12, Dec 70, Abstract No 12A384)

Translation: It is noted that in view of the complex nature of relation-
ships in SHF reflectometers, the most suitable method for determining their
errors is computer modeling by a Monte-Carlo method. A brief exposition is
given of the method used and its realization for actual reflectometers
operating within the framework of the R2-35 instrument. Typical histograms
are given for errors, and practical conclusions are drawn. Bibliography of
four titles. E. L.

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USSR

UDC: 621.317.341

ZHILINSKAS, R. P., SAYESHNIKOVA, I. A.

"On One Approach to the Design of Microwave Measuring Instruments"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 31-35 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A389)

Translation: It is noted that the technological tendency to increase the precision of panoramic measuring instruments is now beginning to diminish. On the other hand, increased precision has been achieved in some new instruments by structural circuit changes (e. g. by connection to a special type of computer at the Hewlett-Packard Co. in the United States, etc.), and by increasing the cost, but not through technology. It is noted that a similar trend is developing in the Soviet industry. An analysis is given of a panoramic SWR meter which operates on the reflectometer principle on directional couplers; a table is given which enumerates types of errors with indication of ways to reduce them, and it is shown that error reduction can be achieved by circuit modifications, chiefly as a result of perfecting the structural circuit of the indicator. Bibliography of 4 titles.
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USSR *2*

UDC 621.317.7-5

ZHILINSKAS, R. P., SVESHNIKOVA, I. A.

"Prospects for Development of Automatic Standing Wave Ratio Meters of Superhigh Frequency Channels"

Dokl. Nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the Scientific and Technical Conference on Radio Technical Measurements. Vol 1), Novosibirsk, 1969, pp 71-77 (from RZh-Radiotekhnika, No 1, Jan 70, Abstract No 1A343, E. L.)

Translation: The general trends of automation have led to the creation of automatic instruments (panoramic standing wave ratio and attenuation meters). It is noted that automatic devices have still been insufficiently introduced into production for acceptance, control and testing of microwave devices although the greatest effect of application of these instruments (both technical and economic) can be obtained in production. On the basis of investigating the errors and other arguments, the basic trends in prospective development of automatic standing wave ratio and attenuation measurements, reflectometers and so on are indicated.

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USSR

UDC 533.9:538.561

BULANIN, V. V., GOLANT, V. YE., and ZHILINSKIY, A. F.

"Instability of Decaying Plasma in a Magnetic Field"

Minsk, Kolebaniya i Volny v Plazme. (Oscillations and Waves in a Plasma),
"Nauka i Tekhnika," 1971, pp 114-116

Abstract: Investigation of the diffusion of charged particles in a decaying plasma across a magnetic field showed that the diffusion coefficient depends substantially on the transverse dimensions of the plasma. The authors describe the experimental set-up and their investigations in containers of different dimensions in a uniform magnetic field up to 6000 G at a helium pressure from 0.08 to 0.15 Torr. The authors succeeded in establishing a strong dependence of the spectrum of the oscillations from 1 to 500 kHz on the diameter of the container, the magnitude of the magnetic field, and the pressure, as well as the existence of a critical magnetic field below which they were unable to observe any further oscillations in the potential. In conclusion, the authors make the point that the growth in amplitude of the oscillations when the diameter of the container with the plasma is decreased corresponds qualitatively to an increase in the coefficient of anomalous
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USSR

BULANIN, V. V., et al., Oscillations and Waves in a Plasma, "Nauka i
Tekhnika," 1971, pp 114-116

diffusion when the transverse gradient of the charged particle concentration
is increased. The article contains 2 illustrations and 3 bibliographic
entries.

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