

REEL # 17

KUROV, G.A.

USSR

UJX 621,52:539.23

MARKARYAN, A.B., KUROV, G.A.

"Concerning Thermal Effects Originating In The Process Of Growing Films In A Vacuum"

Sb.nauch.tr. po probl. mikroelektron. Mosk in-t elektron. tekhn. (Collection Of Scientific Works On Problems Of Microelectronics. Moscow Institute Of Electronics Technology), 1971, Issue 7, pp 19-25 (from RZh:Elektronika i yeye primeneniye, No 6, June 1972, Abstract No 6A60)

Translation: An evaluation is made of the change of temperature of a film on exposure to heat flux from an evaporator, as applied to the growth of epitaxial films of germanium at a rate on the order of 20-30 Å/sec with a 800° C temperature of the substrate. Simultaneously, epitaxial films 1000-1500 Å thick were prepared by vacuum evaporation with the indicated conditions of growth. The results of a computation were compared with experimental data. As tests showed, in the process of growth of the film at a high initial temperature and low rates of deposition, the change of the temperature of the growing film is slight. Apparently, the steadiness of the regime of condensation is of vital importance, a change of which can add to a worsening of the structure and to a change of the properties of epitaxial films with respect to thickness. 15 ref. Ye.G.

1/1

- 40 -

UDC: 621.396.6-181.5

USSR

KUROV, G. A., IGNAT'YEV, V. V.

"Investigation of Germanium Single Crystals Grown From a Drop of Melt on a Dissimilar Substrate"

Sb. nauchn. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collected Scientific Works on Problems of Microelectronics. Moscow Institute of Electronic Technology), 1970, vyp. 5, pp 64-75 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V184)

Translation: In connection with a study of methods of creating active elements of microcircuits, an investigation is made of the singularities of crystallization of a drop of germanium melt on dissimilar substrates (ruby, sapphire). The range of substrate cooling rates is established which gives fairly perfect germanium single crystals 1-3 mm in size. The electrophysical properties of the resultant crystals are studied. Resumé.

1/1

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--HOMOLYTIC REACTION OF N-VINYLPHENOTHIAZINE WITH VINYL BUTYL ETHER  
-U-  
AUTHOR--(05)-SHOSTAKOVSKIY, M.F., SKVORTSOVA, G.G., KUROV, G.N., SIDORENKO,  
L.L., VORONOV, V.K.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR, 1970, 192(1), 115-1  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ORGANIC-AZINE COMPOUND, ETHER, CHEMICAL REACTION MECHANISM,  
ORGANIC AZO COMPOUND, COPOLYMERIZATION, THIOL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3004/1879 STEP NO--UR/0020/10/192/001/0115/0117  
CIRC ACCESSION NO--A10132141  
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO---AT0132141

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PRESENCE OF  
AZBISISOBUTYRONITRILE N VINYLPHENOTHIAZONE (I) (M. REPPE, 1956) FORMS  
POLYMERS. I REACTS WITH BUOCH:CH SUB2 (II) TO GIVE  
N,(6,(VINILOXY)HEXYL)PHENOTHIAZINE (III) AND COPOLYMERS. THE STRUCTURE  
OF III WAS PROVEN BY PARTIAL SYNTHESIS: PHENOTHIAZINE PLUS 84CH SUB2  
(CH SUB2) SUB4 CH SUB2 OET YIELDS N,(6,ETHOXYHEXYL) III ANALOG (IV).  
HYDROGENATION OF III GAVE IV. A FREE RADICAL MECHANISM IS PROPOSED FOR  
THE FORMATION OF III. FACILITY: IRKUTSK. INST. ORG. KHIM.,  
IRKUTSK, USSR.

UNCLASSIFIED

USSR

USSR 621.357.8(03.0)

SAMETSKIY, B. I., MELOUCOV, V. I., POLYAKOV, A. H., SPODETSKIY, G. P., KONDENASHKOV, H. P., KUROV, P. YE.

"Solution for Electrochemical Etching of Metals"

USSR Author's Certificate No. 307097, filed 7 Apr 69, published 23 Aug 71 (from RZh-Obizny, No 6 (11), Jan 72, Abstract No. 64367)

Translation: A solution containing  $K_2SO_4$  is patented for electrochemical etching of metals. It is distinguished by the fact that in order to improve the quality of marking a product made of Cu and its alloys,  $Na_2CO_3$  has been introduced into it. The composition of the solution (in % by weight is as follows): 7.9-8.1%  $Na_2CO_3$ , 1.9-2.1%  $K_2SO_4$ , and the rest water. Example. When marking with a solution containing 8%  $Na_2CO_3$  by weight, 1.9%  $K_2SO_4$  and the rest water at a voltage of 5 volts on plates made of copper and BKKh-3 bronze, a clear image of the symbols is obtained which is not removed during machining.

1/1

USSR

UDN 621.315.592

ANOSOV, I.V., KUROVA, I.A., CRUKENT, N.N. [Moscow State University imeni M. V. Lomonosov]

"On Some Electrical And Optical Properties Of Acousto-Electric Domains In GaAs"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 625-631

**Abstract:** The work is devoted to a detailed study of the distribution of the field in a specimen and to the establishment of the connection between the electrical characteristics in the domain and the infrared radiation. The experiments were conducted at room temperature on  $12 \times 0.4 \times 0.7$  mm GaAs specimens with  $n = 2 \cdot 10^{15} \text{ cm}^{-3}$  and  $\mu = 4000 \text{ cm}^2/\text{v}\cdot\text{sec}$ , oriented in the (110) direction. In specimens of compound section the effect was also studied of artificially created nonuniformities on the motion and properties of the domain. Infrared radiation from specimens with an acousto-electric domain is studied. At the boundary of the nonuniformities, where the field increases in the domain as a result of the effects of the acousto-electric flux, infrared radiation with a maximum of  $\sim 9100 \text{ \AA}$  appears. Possible mechanisms of the radiation are considered. The authors thank K.I. Paninoy for production of the specimens and V.S. Vavilov for discussion of the results of the work. 6 fig. 6 ref. Received by editors, 4 June 1971.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--11SE970  
 TITLE--CALCULATION OF ELECTROMAGNETIC FIELDS APPLIED BY THE SOUNDING CY  
 THE METHOD OF GROWING IN THE NEAREST ZONE -U-  
 AUTHOR--KAUFMAN, A.A., KURILLO, V.N., MGRQZOVA, G.M.  
 COUNTRY OF INFO--USSR  
 SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 1 (121) PP 92+101  
 DATE PUBLISHED-----70  
 SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY  
 TOPIC TAGS--ELECTROMAGNETIC FIELD, MAGNETIC DIPOLE, PROSPECTING  
 CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAME--1986/1289 STEP NO--UR/0210/70/000/001/0092/0101  
 CIRC ACCESSION NO--APO103171  
 UNCLASSIFIED



2/2 013

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--A0103171

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD OF COMPUTATION OF NONSTATIONARY ELECTROMAGNETIC FIELDS IN THE HORIZONTALLY LAYERED MEDIA IS DESCRIBED. THE FURYE TRANSFORMATION AND THE KNOWN PRINCIPLES FOR QUAZISTATIONARY, SINUSOIDAL FIELD DEPENDED ON TIME ARE USED IN THIS METHOD. THE MAIN FEATURES OF THE COMPUTATION METHOD ARE SHOWN EXAMPLIFIED BY ELECTROMAGNETIC FIELD COMPONENTS OF VERTICAL MAGNETIC DIPOLE COMPUTATION WITHIN THE CONDUCTING MEDIUM WITH THREE HORIZONTAL DIVISION SURFACE.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

1/2 011  
TITLE--CRITICAL SOLUBILITY PHENOMENA IN A PYRIDINE  
ACETATE, N, HEXANE, D, CRESOL QUATERNARY SYSTEM -U-  
AUTHOR--(02)-KURPATKIN, I.L., KOTOVA, G.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCII. KHIM. 1970, 40(3), 521-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PYRIDINE, ACETATE, HEXANE, CRESOL, PHASE DIAGRAM, COMPLEX  
COMPOUND, SOLUBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3002/1131

STEP NO--UR/0079/10/040/003/0521/0526

CIRC ACCESSION NO--AP0128558

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--19JUN70

2/2 011

CIRC ACCESSION NO--AP0128558

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

ABSTRACT. PHASE DIAGRAMS ARE PRESENTED FOR THE TITLE SYSTEM AND FOR THE COMPONENT SUBSYSTEMS AT 200DEGREES. THE FOLLOWING COMPLEXES WERE DETECTED: PYRIDINE/ACETATE, P, O, CRESOL, AND 1:1 COMPN.; A NARROW REGION OF LIQ. PHASE SEPR. WAS FOUND AT THE BOUNDARY OF THE BINARY SYSTEM OF PYRIDINE ACETATE/HEXANE AND THE ISOTHERMAL SOLN. CRIT. POINT WAS AT PYRIDINE 15PERCENT, PYRIDINE ACETATE 23PERCENT, AND HEXANE 62PERCENT. THE QUATERNARY SYSTEM HAS A 4 COMPONENT CRIT. POINT AND A SADDLE POINT AT PYRIDINE 2PERCENT, PYRIDINE ACETATE 17PERCENT, HEXANE 63PERCENT, AND O, CRESOL 18PERCENT. THE COMPLEX FORMATION BETWEEN PYRIDINE AND O, CRESOL IS NOT REFLECTED ON THE CRIT. SOLN. SURFACE OF THE QUATERNARY SYSTEM. FACILITY:

KALININ. POLITEKH. INST., KALININ, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--SOME QUESTIONS OF THE PSYCHOPHYSIOLOGICAL SELECTION OF MILITARY  
SPECIALISTS -U-  
AUTHOR-(02)-KURPITA, P.N., ZOLOTUKHIN, A.N.  
COUNTRY OF INFO--USSR  
SOURCE--VOYENNO-MEDITSINSKIY ZHURNAL, NO 3, 1970, PP 55-57  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL  
SCIENCES  
TOPIC TAGS--PSYCHOPHYSIOLOGY, PERSONNEL SELECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3007/0395

STEP NO--UR/0177/70/000/003/0055/0057

CIRC ACCESSION NO--AP0135874

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135874

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN CREATING A SYSTEM OF PSYCHOPHYSIOLOGICAL SELECTION SOVIET PSYCHOPHYSIOLOGISTS AND PSYCHOLOGISTS START FROM THE POSITION THAT THE FORMATION OF THE PERSONALITY OF A SPECIALIST AND HIS OCCUPATIONAL ABILITIES STARTS FROM THE SOCIAL ENVIRONMENT, HIS IDEOLOGICAL AND POLITICAL AND MORAL MAKE UP, HIS INDIVIDUAL PSYCHIC AND PHYSIOLOGICAL QUALITIES, LEVEL OF GENERAL DEVELOPMENT AND SPECIAL TRAINING.

UNCLASSIFIED



USSR

UDC 541.49:547.1'118:546.711:546.811'131

GINZBURG, A. G., SETKINA, V. N., and KURSANOV, D. N., Institute of Hetero-Organic Compounds, Academy of Sciences USSR

"The Reaction of Manganese  $\pi$ -Cyclopentadienylphosphine Complexes With Tin (IV) Chloride"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, 1973, pp 481

Abstract:  $\pi$ -C<sub>5</sub>H<sub>5</sub>Mn(CO)<sub>2</sub>L (I) was found to react with SnCl<sub>4</sub> in CH<sub>2</sub>Cl<sub>2</sub> to form the inclusion complex C<sub>5</sub>H<sub>5</sub>Mn(CO)<sub>2</sub>L·2SnCl<sub>4</sub> (II), where L=PPh<sub>3</sub>, AsPh<sub>3</sub>, P(i-C<sub>3</sub>H<sub>7</sub>), and P(C<sub>6</sub>H<sub>11</sub>)<sub>3</sub>. Compound II appears as a yellow or brown substance which is stable in an argon atmosphere or in sealed ampules. In solutions containing O or N atoms (water, alcohols, acetone, ether, MeCN), II breaks down instantly to regenerate I. Compound II is insoluble in apolar solvents (benzene, CCl<sub>4</sub>, CHCl<sub>3</sub>, CS<sub>2</sub>), weakly soluble in MeNO<sub>2</sub>, and more soluble in PhNO<sub>2</sub>. The latter solution conducts electricity. During the formation of II the stretch frequencies of CO increase by 70-100 cm<sup>-1</sup>, which indicates decreased electron density on the Mn atom.

1/1

USSR

UDC 501.49+546.11

GINZBURG, A. G., NEMIROVSKAYA, I. D., SETKINA, V. N., KURSANOV, D. N.,  
Corresponding Member of the USSR Academy of Sciences

"Characteristic Features of the  $\eta^5$ -Cyclopentadienyldiphosphine Complexes of  
Manganese in Hydrogen Exchange Reactions with Acids"

Moscow, Doklady Akademii Nauk SSSR, Vol 208, No 6, 1973, pp 1353-1355

Abstract: It was demonstrated earlier [D. N. Kursanov, et al., Izv. AN SSSR, ser. khim., 2842, 1969; V. N. Setkina, et al., 434, 1971; A. G. Ginsburg, 177, 1971] that replacement of one of the Co ligands in the  $\text{CpMn(CO)}_2$  (Cp =  $\eta^5\text{-C}_5\text{H}_5$ ) by the tertiary phosphines  $\text{PR}_3$  leads to acceleration of the acid hydrogen exchange by 2-4 orders depending on the nature of the R radical. A study has now been made of the reactivity in the acid hydrogen exchange reactions of cyclopentadienyl complexes of manganese containing bidentate ditertiary of phosphines with the structure  $\text{Ph}_2\text{P(CH}_2\text{)}_n\text{PPh}_2$  ( $n = 1 - 3$ ).

The kinetics of the hydrogen exchange reaction were investigated by the deuterium content in the initial material isolated after interrupting the reaction by pouring the reaction mixture into a soda solution. The values of the chemical shifts are presented on the  $\delta$ -scale (internal standard — hexamethyl disiloxane for the paramagnetic resonance spectra and tetramethyl silane for the  $^{13}\text{C}$  nuclear magnetic resonance spectra).



USSR

UDC 541.49

KHATAMI, A. I., GINZBURG, A. G., NEPEDOVA, M. N., SETKINA, V. N., and KURSANOV, D. N.

"Cyclopentadienylmanganesedicarbonyltriphenylphosphines Substituted in the Cyclopentadienyl Ring"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 12, Dec 72, pp 2665-2667

Abstract: Carbonyl ligands in complex transition metal compounds can be easily replaced by PPh<sub>3</sub> group upon irradiation with UV light. This method was used to synthesize derivatives of CpMn(CO)<sub>2</sub>PPh<sub>3</sub>, where Cp = C<sub>5</sub>H<sub>5</sub>, containing Et, PhCH<sub>2</sub>, MeS, Cl, Br, I, and COOMe substituents in the Cp ring, from the respective derivatives of CpMn(CO)<sub>3</sub>. The new products are yellow crystalline compounds with high melting points. In the solid state they are stable in air, dissolve easily in CCl<sub>4</sub>, CHCl<sub>3</sub>, and CS<sub>2</sub>. The structure of these products was confirmed by PMR and IR spectroscopical analysis.

1/1

Organometallic Compounds

USSR

UDC 541.127:546.11.02:547.1'13'118

YAKUSHIN, F. S., SETKINA, V. N., KISLYAKOVA, N. V., KURBANOV, D. N., and SHATENSHTEYN, A. I., Physico-Chemical Institute imeni L. YA. Karlov, and Institute of Metallorganic Compounds, Academy of Sciences USSR

"Kinetic Isotope Effect of Hydrogen Exchange in Cyclopentadienylmanganesetricarbonyl and Cyclopentadienylmanganesedicarbonyltriphenyl phosphine"

Moscow, Izvestiya Akademi Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 72, pp 316-322

Abstract: Experimental results are reported on the determination of the kinetic isotope effect (KIE) of hydrogen exchange in cyclopentadienylmanganesetricarbonyl (CMT) and cyclopentadienylmanganesedicarbonyltriphenyl phosphine (CMDP). In many reactions CMT behaves like benzene. Introduction of an alkyl group lowers the exchange rate of hydrogen. Determinations of KIE of hydrogen exchange with acids were carried out under similar conditions for CMT, CMDP, benzene derivatives and ferrocene, and it was shown that both in the CMT and CMDP it occurs by the same mechanism as in case of aromatic compounds. On the other hand, hydrogen isotope exchange of AMT catalyzed by basic agents has a protophilic mechanism, analogously to ferrocene, the slowest step being the breaking of the C-H bond by the base.

1/1

USSR

UDC 541.49 + 661.718.1 + 546.711

SETKINA, V. N., GINZBURG, A. G., KISLYAKOVA, N. V., and KURSANOV, D. N.  
Institute of Element-Organic Compounds, Acad. Sc. USSR

"Quantitative Evaluation of the Effect of Triphenylphosphine and  
Triphenyl Phosphite Ligands in  $\pi$ -Cyclopentadienyldicarbonylphosphinic  
Complexes of Manganese"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2,  
Feb 71, pp 434-435

Abstract: Tertiary phosphines and phosphites are stronger donors than  
the carbonyl groups in transition metal complexes.. When one of the  
carbonyl groups of cyclopentadienylmanganetricarbonyl (CpMnT) was  
replaced with  $PPh_3$  or  $P(OPh)_3$ , the rate of acid hydrogen exchange was  
increased 2000- and 70-fold, respectively. Such an exchange leads  
to a higher electron density, increased rate of electrophilic reactions  
in the cyclopentadienyl rings  $\pi$ -bonded to the transition metal. Ham-  
met's equation holds for the acid hydrogen exchange of CpMnT.

1/1

- 66 -

USSR

UDC 541.515 + 541.49 + 541.124 + 546.11

GINSBURG, A. G., SETKINA, V. N., and KURSANOV, D. N., Institute of Element-Organic Compounds, Acad. Sc. USSR

"Effect of a Radical Bound to a Phosphorus Atom in the  $C_5H_5M(CO)_2PR$  Complexes on the Rate of Hydrogen Exchange in the Ring and on the Frequency of Carbonyl Stretching Vibrations"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 1, pp 177-179

Abstract: Hydrogen exchange reaction between  $CF_3COOD$  and  $C_5H_5M(CO)_2PR_3$  in dichloroethane at  $25^\circ$  was studied. The reaction was found to depend on the radical attached to phosphorus. The rate of hydrogen exchange in the cyclopentadienyl ring increases with a transition from triphenylphosphinyl to trialkylphosphinyl substituents. In the series  $R = OC_6H_5, C_6H_5, C_2H_5, isoC_6H_{11}$  the rate of hydrogen exchange increases and the frequency  $\nu_{C=O}$  decreases.

1/1

- 23 -

1/2 008

UNCLASSIFIED

PROCESSING DATE--13OCT70

TITLE--ORIENTING ACTION OF THE SULFO GROUP ON A CYCLOPENTADIENYL-MANGANESE  
TRICARBONYL SYSTEM IN THE PROTOPHILIC ISOTOPIC EXCHANGE OF HYDROGEN -U-  
AUTHOR--(05)-SETKINA, V.N., KISLYAKOVA, N.V., PETROVSKIY, P.V., KOLOBOVA,  
N.YE., KURSANDY, D.N.

K

COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 698-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--MANGANESE COMPOUND, CARBONYL COMPOUND, CYCLIC GROUP, ISOTOPE  
EXCHANGE, SODIUM COMPOUND, SULFONIC ACID, ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAKE--1999/1905

STEP NO--UR/0062/70/000/003/0698/0699

CIRC ACCESSION NO--AP0123689  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--230CY70

2/2 008

CIRC ACCESSION NO--AP0123689

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

ABSTRACT. D-H EXCHANGE WAS RUN WITH ETOD  
CONTG. A CATALYTIC AMT. OF ETONA, AND CYCLOPENTADIENYLMANGANESE  
TRICARBONYL AS THE NA SULFONATE IN THE ALPHA AND BETA POSITIONS. THE  
PROTOPHILIC ISOTOPE EXCHANGE REACTION HAD F VALUES (PARTIAL REACTION  
RATES) OF 4.8 AND 1.8, RESP., FOR THE 2 ISOMERS. FACILITY:  
INST. ELEMENTORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

1/2 020  
TITLE--ISOTOPIC HYDROGEN EXCHANGE OF ARENECHROMIUM TRICARBONYLS IN AN ACID  
MEDIUM -U-  
AUTHOR--(05)-KURSANOV, D.N., SETKINA, V.N., BARANETSKAYA, N.K., ZDANOVICH,  
V.I., ANISIMOV, K.N.  
COUNTRY OF INFO--USSR

K

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1103-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ISOTOPE EXCHANGE, CHROMIUM COMPOUND, CARBONYL COMPOUND,  
BENZENE, ORGANOCHROMIUM COMPOUND, ORGANIC PHOSPHORUS COMPOUND, DEUTERIUM  
COMPOUND, CHEMICAL REACTION RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1993/0497

STEP NO--UR/OD20/10/190/005/1103/1105

CIRC ACCESSION NO--ATJ113388

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--16DCT70

CIRC ACCESSION NO--AT0113388

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RATE CONSTS. OF THE ISOTOPIC HYDROGEN EXCHANGE OF ARENECHROMIUM CARBONYLS IN ACID MEDIA ARE INVESTIGATED. THE EXCHANGES OF C SUB6 H SUB6, C SUB6 H SUB6 CR(CO) SUB3, ME SUB3 C SUB6 H SUB3 CR(CO) SUB3, C SUB6 H SUB4 CR(CO) SUB2 PPH SUB3, ME SUB3 C SUB6 H SUB3 CR(CO) SUB2 PPH SUB3, AND MECC SUB6 H SUB3 CR(CO) SUB2 PPH SUB3 IN CF SUB3 CD SUB2 D ARE STUDIED. THE RATE CONSTS. OF ALL COMPS. ARE FOUND TO BE ON THE ORDER OF 10 PRIME NEGATIVE 6 TO 10 PRIME NEGATIVE 7 WITH THE EXCEPTION OF C SUB6 H SUB6 WHICH IS 10 PRIME 7 TIMES FASTER. FACILITY: INST. ELEMENTORG. SORDIN., MOSCOW, USSR.

UNCLASSIFIED



1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--EFFECT OF SUBSTITUENTS IN ARENETRICARBONYLCHROMIUM COMPLEXES ON THE  
ISOTOPIC EXCHANGE OF HYDROGEN IN AN ALKALINE MEDIUM -U-  
AUTHOR--(04)--SETKINA, V.N., BARANETSKAYA, N.K., ANISEIMOV, K.N., KURSANDV.  
D.N.  
COUNTRY OF INFO--USSR  
SOURCE--Izv. Akad. Nauk SSSR, Ser. Khim 1970, (2), 473-4  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CHROMIUM COMPLEX, ISOTOPE EXCHANGE, HYDROGEN  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/1680 STEP NO--UR/0062/70/000/002/0473/0474  
CIRC ACCESSION NO--AP0125301

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70  
CIRC ACCESSION NO--AP0125301  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING RATE CONSTS. WERE  
REPORTED FOR ISOTOPIC H EXCHANGE IN BASIC SOLN.: ME SUB2 NPHCR(CO) SUB3  
0.3 (SEC PRIME NEGATIVE1, TIMES 10 PRIME NEGATIVES), BZONACR(CO) SUB3  
0.7 (SEC PRIME NEGATIVE1, TIMES 10 PRIME NEGATIVES), FOR THE REACTION  
WITH ETOD IN THE PRESENCE OF ETONA AT 100DEGREES IN A SEALED TUBE.  
EVIDENTLY ELECTRON DONOR AND ACCEPTOR GROUPS SHOW A WEAK EFFECT ON THIS  
EXCHANGE AMONG SUCH COMPS. OF CR. FACILITY: INST. ELEMENTORG.  
SOEDIN., MOWCOW, USSR.

UNCLASSIFIED

USSR

UDC 620.193.27

KURANOVA, B. I., and KONSTANTINOVA, Ye. V., Sverdlovsk

"Corrosion of Materials in a Distillate Containing Dissolved Gases"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 8, 1970, pp 4-8

Abstract: In connection with the present practice of supplying arid districts with desalinated sea water, the experimental-industrial plant at Shevchenko has been studying intake pipe corrosion for several years, especially the corrosion of carbon steel pipes, which process at 0.12-0.17 g/m<sup>2</sup>-hr.

It was found that dissolved gases (oxygen, carbon dioxide) in the distillate are a prime cause of the corrosion of carbon steel intake pipes, and that their removal can cut corrosion by almost half. Further, aluminum can be used as pipe material, regardless of the gases, provided the copper ion content is limited and there are no more than 20 mg/l of iron ions present. Finally, galvanized steel can be used, without condition. But all of these materials are subject to a slight degree of corrosion.

1/1

- 96 -

USSR

UDC: 534.852.2

RALKO, A. V., ~~KURSENKO, I. V.~~, MANCHUK, K. I., GAVRISH, A. P., KOVENSKIY, B. G., "Kiev "Order of Lenin" Polytechnical Institute (nani the Fiftieth Anniversary of the Great October Socialist Revolution

"A Method of Making Ferrite Magnetic Heads"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzy, Tekhnicheskyye Znaniya, No 30, Oct 71, Author's Certificate No 317100, Division G, filed 22 May 70, published 7 Oct 71, p 184

Translation: This Authors' Certificate introduces a method of making ferrite magnetic heads by adding a vitrifying material in the working gap between ferrite cores, and heating it to the vitrification point. As a distinguishing feature of the patent, the manufacturing process is simplified by impregnating a porous material such as ash-free filter paper with the vitrifying material, drying, and placing a sheet of the impregnated material between the ferrite cores.

1/1

Precision Mechanical & Optical

USSR

UDC 778.39

KURSHIN, A. D., PANSHYN, I. A. and FABRIKOV, V. A., All-Union Scientific  
Research Institute of Opticophysical Measurements

"Utilization of Brightness Hysteresis for Recording Images on Ferromagnetic  
Film"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinetografii, Vol 17,  
No 3, 1972, pp 219-220

Abstract: A method for recording images on ferromagnetic film is described, in which the azimuthal angle and the diffraction angle do not change and the image is obtained due to different intensity of the diffracted illumination on illuminated and unilluminated sectors. The new method is based upon the hysteresis nature of the relationship of diffracted-radiation intensity to a normal magnetic field. The hysteresis is manifested in the change of diffraction intensity after the action of a normal field upon a film with band domains. This change of diffraction intensity, brought about by the normal magnetic field, can be "photographed" by heating the film. This forms the basis of the new recording mechanism by means of which the image is fixed on the film in the form of sectors with different diffraction intensities. Pulse laser radiation is used to obtain the image. The sensitivity of this recording  
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KURSHIN, A. D., et al., Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, Vol 17, No 3, 1972, pp 219-220

method has been experimentally evaluated at  $0.1 \text{ joule/cm}^2$ . The unit of resolution is expected to be commensurable with the width of the band domains (0.5  $\mu$ ). 1 figure. 3 references.

2/2

USSR

UDC: 539.3

KURSHIN, L. M. and SHKUTIN, L. I.

"The Problem of the Elastic Stability of a Locally Loaded Cylindrical Shell"

Moscow, Prikladnaya matematika i mekhanika, vol 36, No 6, 1972, pp 1123-1129

Abstract: This paper studies the effect of the nonlinearity of an axially symmetrical deformation in a semi-infinite circular cylindrical shell at the end of which is a transverse uniform stress, on its resistance to infinitely small asymmetrical perturbations satisfying swivel support conditions at its end. One of the characteristic problems in the local stability of cylindrical shells is considered; nonlinear equations describing the deformation of the shell with arbitrary rotational angles are used to determine the shell's precritical state. The critical value of the end stress is defined as the least eigen-value of the loading parameter; the problem of determining this value is solved by finding an expression for the critical load. The authors note that the solution to the linear precritical state is useful only for very fine shells.

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USSR

UDC: 539.374

KURSHIN, L. M. and SHKUTIN, L. I., Hydrodynamics Institute, Novo-  
sibirsk

"Stating the Problem of Local Stability of Shells of Rotation"

Moscow, Doklady Akademii nauk SSSR, vol 206. No 4, 1972, pp 838-  
840

Abstract: With regard to the general theory of the stability of  
fine shells, the authors pose the question: to what extent is the  
linear theory useful in describing the pre-critical stress state  
with a local nature? The answer to this question can only be given  
from the viewpoint of nonlinear theory, and the authors begin by  
considering a semi-infinite circular cylindrical shell with a  
transverse compressive force applied to its free end. The boundary  
problem of the shell's symmetrical deformation reduces to a system  
of two equations, from which it is found that the deformed shell is  
a shell of revolution. The formulas for the stress functions and  
the sag are brought into these equations, and the problems of de-  
termining the critical value of the load parameter and the corres-  
ponding problem of the wave-forming parameter are solved.

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- 145 -



USSR

KURSHIN, L. M., PUSTOVOY, N. V.

"Supercritical Behavior of a Cylindrical Envelope with Combined Application of Loads"

4-ya Vses. Konf. po Probl. Ustoychivosti v Stroyit. Mekh., Tезисы Докл. [Fourth All-Union Conference on Problems of Stability in Structural Mechanics, Theses of Reports -- Collection of Works], Moscow, 1972, pp 133-134, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 V328).

Translation: The supercritical behavior of a cylindrical shell under the influence of axial forces and a circular load is studied. The solution is presented on the basis of nonlinear equations of smooth shells with fixed form of bending function, using the Bubnov method. The bending function is selected so that it contains components reflecting the subcritical curvature of the generatrix of the shell, plus terms describing the bifurcation at the moment of loss of stability. The system of nonlinear algebraic equations produced for bending amplitudes is studied from the point of view of development of the equilibrium shapes of the shell arising upon loss of stability. The results of calculations show that the decrease in loads with increasing bending in the supercritical area occurs even with values of axial compression parameter  $p > 0.15$  ( $p = N/N_c$ , where  $N$  is the  $1/2$

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KURSHIN, L. M., PUSTOVOY, N. V., 4-ya Vses. Konf. po Probl. Ustoychivosti  
v Stroyit. Mekh., Tezisy Dokl., Moscow, 1972, pp 133-134.

intensity of the compressive load,  $N_e$  is the Euler critical load).

2/2

Acc. Nr.: AP0045878

Ref. Code: UR 0387

JPRS 52054

K

Rock Density at High Pressures

(Abstract: "Study of Density of Rocks from Central Kazakhstan Under High Pressures," by M. P. Volarovich, A. K. Kurskarev, A. I. Lutskin, L. S. Tomashevskaya, I. L. Tuzova and B. N. Kravayev, Institute of Physics of the Earth, Academy of Sciences USSR, and Institute of Geological Sciences, Academy of Sciences Kazakh SSR, Moscow, Izvestiya Akademii Nauk SSSR, Fizika Zemli, No. 1, 1970, pp. 46-51)

The density of rocks of various composition from Central Kazakhstan was determined at high pressures in the laboratory. Rock tests were at quasihydrostatic pressures up to 15 kb. The apparatus used made it possible to measure the velocities of elastic waves. The sample was compressed by hard-alloy pistons. Change in volume (from displacement of the piston) was determined simultaneously with measurements of the velocity of longitudinal waves. Change in density at different pressures was computed using the formula

$$\rho = \frac{\rho_0}{1 - \Delta V/V}$$

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where  $\rho_0$  is the initial density of the sample in  $\text{g/cm}^3$ ,  $\Delta V/V$  is the volume decrement. Change in density was determined with an error of about 5 percent. Samples were selected along two deep seismic sounding profiles. Under the applied pressure density of all rocks increased. Density changes were greatest in the initial phase to 4 kb. Later the changes became less and the density-pressure curves flattened out. The greatest density changes were observed in samples of ancient metamorphosed rocks: schists, gneisses and porphyroids of more acidic composition for which the density changes at 15 kb attain 3.5 percent. The density of granites also changes rather sharply and increases continue to 15 kb. Relative density changes are dependent on initial density: the lesser the density at atmospheric pressure, the greater is the change when pressure is applied. The maximum changes in density for rocks of acidic composition are evidently caused by their greater inhomogeneity than for rocks of basic composition. Acidic rocks are also poorly preserved. Defects in the rock, largely microfissures, close under pressure and density at the attained pressures approaches an identical value for rocks of similar composition. For rocks of basic and ultrabasic composition the density change at pressures up to 15 kb does not exceed 2 percent, that is, the compressibility of rocks of acidic composition is greater than for basic

2/3

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rocks by approximately a factor of 1.5. Density is dependent primarily on chemical and mineralogical composition. Differentiation of rocks by density corresponds to their basicity. The density of mafic rocks at high pressures approaches the density of granodiorites. Tuff-diorites approach the density of diorites. The density of eclogites from northern Kazakhstan is less than the density of eclogites from other regions. The low density of eclogites in northern Kazakhstan can be attributed to the fact that they contain quartz (up to 15-20 percent). The results of studies of rock densities at high pressures can be used in the geological interpretation of geophysical data. The authors used such data in constructing a density cross section of the crust in central Kazakhstan.

3/3

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Computers: Digital

USSR

UDC: None

SHVARTS, KURT, Corresponding Member of the Latvian Academy of Sciences,  
Doctor of Physico-Mathematical Sciences

"Optical Memory"

Riga, Nauka i Tehnika, No 2, 1973, p 24

Translation: Nowadays, the use of magnetic elements in the memory of an electronic computer permits the introduction of some 10 million bits of information. The computer's speed is 1 bit/10<sup>-7</sup> seconds. But these specifications are not enough to satisfy computer specialists, and the problem has now arisen of designing machines with a memory capacity of 10<sup>12</sup> bits and capable of processing information at the rate of 1 bit per 10<sup>-9</sup> seconds. Apparently, such a computer can be built by using optical memory elements through which information can be recorded and calculated by the use of light. The optical memory elements of the computer are connected with the other blocks through photoelectric sensors (photoelements) which convert the optical signal into electricity.

Optical memory elements are especially interesting, since they afford the possibility of using lenses to focus light beams on an area with a one-micron diameter. Thus, as much as 10<sup>8</sup> information bits can be recorded on a single  
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SHVARTS, KURT, Nauka i Tekhnika, No 2, 1973, p 24

square centimeter of the optical medium. If a laser is used as the light source in the computer, the time for information recording and processing can be cut to 10<sup>-8</sup>-10<sup>-10</sup> sec. This explains why computer specialists have turned their attention to optics.

For optical recording of information, materials are needed whose characteristics (such as color and index of light refraction) vary under the influence of incident light. Among such materials are various organic dyes, plastics, and semiconductors; there is also a great deal of interest in inorganic compounds -- ionic crystals.

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18

1/2 034 UNCLASSIFIED PROCESSING DATE--115-770  
 TITLE--TELESCOPE IN THE ORBIT -U-  
 AUTHOR--KURT, V. *K*  
 COUNTRY OF INFO--USSR  
 SOURCE--IZVESTIYA, JUNE 17, 1970, P 8, COLS 1-4  
 DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, SPACE TECHNOLOGY  
 TOPIC TAGS--ASTRONOMIC OBSERVATORY, TELESCOPE, MANNED ORBITAL LABORATORY,  
 UNMANNED ORBITAL LABORATORY, SPACECRAFT CARRIED EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAE--1989/1610

STEP NO--UR/9003/10/000/000/0005/0009

CIRC ACCESSION NO--AN0108030

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PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AN0108030

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR CONSIDERS, IN VERY  
GENERAL TERMS, THE POSSIBILITIES OF ASTRONOMICAL OBSERVATIONS IN SPACE.

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UNCLASSIFIED

USSR

UDC 547.484.34

KURTS, A. I., MASIAS, A., BELETSKAYA, I. P., and BEUTOV, O. A.,

"Reactivity of Ambident Anions. Selective Solvation of Acetoacetic Ester Anion in Alkylation Reactions"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 11, Nov 71, pp 2233-2236

Abstract: Kinetics of the O-alkylation and C-alkylation of potassium enolate of the acetoacetic ester with ethyltosylate in a binary mixture hexamethylphosphotriamide-ethanol was studied. It was established that the reaction rate of both of these reactions increases with increasing quantity of the dipolar aprotic solvent in the mixture. It has been shown that when a change is made from alcohol to hexamethylphosphotriamide [hexametapol], the O-alkylation rate is increased 400-fold, while the C-alkylation is increased only about 25-fold. This is due to the selective solvation of the oxygen center of the anion with the proton containing solvent. Substituting deuterioethanol for ethanol is reflected only in overall reaction rate, the ratio of isomers remaining unchanged.

1/1

USSR

UDC 669.196:620.193.41

FOKIN, M. N., BARU, R. L., and KURTEPOV, M. M.

"Corrosion of Zirconium in Hydrochloric Acid"

V sb. Korroziya i zashchita met. (Metal Corrosion and Protection -- Collection of Works), Moscow, "Nauka," 1970, pp 66-69 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1834 by the authors)

Translation: Zirconium is stable in 20 and 30% solutions of HCl unless the concentration of oxidizing agents exceeds 0.01-0.5 g/l. With an increase in the concentration of oxidizing agents, pitting is observed, as well as an increase in total corrosion. The tendency toward pitting is estimated according to pitting potentials measured by the galvanostatic method. Zirconium does not undergo hydrogen embrittlement in HCl and can therefore be used to make insoluble cathodes operate in reducing media. Two illustrations. Bibliography of four titles.

1/1

- 27 -

USSR

VYSOTSKIY, D. A., PETROV, H. D., REKOV, A. I., ROMANOV, A. I.,  
SEPP, V. A., SEREBENNIKOVA, V. Ye., SMIRNOVA, L. G., KURCHENKO, G. I.,  
Institute of High Temperatures of the Academy of Sciences USSR

"Test Results on Installations and Electrode Materials in a Plasma Jet"

Moscow, Teplofizika vysokikh temperatur, No. 3, May/June 72, pp 635-639

Abstract: The characteristics of electrodes of silicon carbide with additives of alloying metals (Mo, Ti, Cr), interelectrode insulators of refractory concretes based on high-alumina VGB and AFB concretes and magnesian MB concrete and module insulation walls of MB concrete were investigated in a model of an MHD generator. The maximum electrode temperature during the experiments reached 2300°K, the interelectrode insulators reached 2100°K and the installation walls reached 1700°K. The electrode samples were prepared by pressing a mixture of SiC powder and the appropriate alloying additive (Mo, Ti, Cr) with organic binding and subsequent heat treatment at a temperature of 2100°C for 10-15 min. The experimental device in which the materials were tested consisted of the following elements: a plasmatron producing an air flow with a

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VYSOTSKIY, D. A., et al, Teplofizika vysokikh temperatur, No. 3,  
May/June 72, pp 635-639

temperature of 3000°K, a mixing chamber where an easily ionized additive was introduced into the air flow in the form of potassium or  $K_2CO_3$  vapors, a nozzle, the MHD generator channel, and a system for evacuating the gas flow. The flow rate in the channel was approximately 500 m/sec. The advantages of a sectional structure for the channel are shown and it was established that the current density is determined by the conductivity of the films from the interaction products of the electrode and additive materials, independent of the type of alkali additive (potassium or potash vapor) at the temperature of its condensation on the electrode surface. At an electrode temperature of less than 900°K in supplying K-vapors and of 1200°K in supplying  $K_2CO_3$  powder, the current density remains constant at 0.2 A/cm<sup>2</sup>. At these temperatures the current density is evidently determined by the conductivity of the liquid film of the interaction products of the additive material, the working gas, and the electrode and of their emission properties. With an increase in electrode temperature above 900-1200°K the emission properties of the electrode material directly begin to play a basic role.

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Acc. Nr:

APO015805

Abstracting Service:  
CHEMICAL ABST.

4/70

Ref. Code:  
WK 0000

K

89425z 3-Ureido acids and dihydrouracils. IK. Kinetics and mechanism of alkaline hydrolysis of dihydrouracils. ~~Phys. Chem., Sofia, Bulg. J. Chem. Soc. 1970, 21, 232-5 (Eng)~~  
~~oeva, Iva B.; Kurtev, B. L.; Pocharhev, Ivan G. (Inst. Org. Chem., Sofia, Bulg.). J. Chem. Soc. 1970, 21, 232-5 (Eng)~~  
 The kinetics of alk. hydrolysis of dihydrouracils are of the first and second order in hydroxide ion, reverting to first apparent zero) order at high alk. The reaction is general base-catalyzed. A mechanism is suggested involving reaction only of the un-ionized species with rate-detc. general base-catalysis by water and de-compn. by hydroxide ion of the tetrahedral addn. intermediate changing to rate-detc. formation of the addn. intermediate at high alkalinities.

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1/2 010 UNCLASSIFIED PROCESSING DATE--3006170  
TITLE--VITAMIN LEVELS IN DRIED PEACHES -U-  
AUTHOR--(02)-KOROBKINA, Z.V., KURTOV, I.A. K  
COUNTRY OF INFO--USSR  
SOURCE--KONSERV. OVOSHCHESUSH. PROM. 1970, 25(1), 29-33  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--VITAMIN, FOOD ANALYSIS, FOOD STORAGE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1998/0593 STEP NO--UR/9084/70/025/001/0029/0033  
CIRC ACCESSION NO--AP0121262  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--300C170

CIRC ACCESSION NO--AP0121262

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONTENT OF VITAMIN C AND CAROTENE IN 7 KINDS OF DRIED PEACHES WAS INVESTIGATED. CHANGES IN VITAMIN CONTENT DURING DRYING VARIED WITH TYPE. STORAGE OF DRIED PEACHES IN SEALED PACKAGES CONSIDERABLE REDUCED THE VITAMIN LOSSES. BLANCHING DECREASED THE CONTENT OF VITAMINS IN THE DRIED FRUITS. FACILITY: SAMARKAND, KOOP. INST. IM. KUIBYSHEVA, SHARKAND, USSR.

UNCLASSIFIED



1/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--ALKYLATION OF METAL ENOLATES OF ACETOACETIC ESTER --U--

AUTHOR--(02)--KURTS, A.L., BELETSKAYA, I.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 831-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYLATION, ACETOACETATE, METAL COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/1017

STEP NO--UR/0062/10/000/004/0831/0835

CIRC ACCESSION NO--AP0134729

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--040EC70

CIRC ACCESSION NO--AP0134729

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXAMN. OF LITERATURE DATA ON THE TITLE PROBLEM RESULTED IN THE CONCLUSION THAT THE RATIO OF D,ALKYLATION TO C,ALKYLATION OF ACETOACETIC ESTER IN THE FORM OF METALLIC EVOLATES CANNOT BE SATISFACTORILY EXPLAINED ON THE BASIS OF N. KORNBLUM'S RULES (1955, 1966). FACILITY: INST. ELEMENTORG, SOBOIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 629.7.036.9-253.5:534.1

KOVALEV, A. A., STRUNKIN, V. A., KURTSEVA, I. I.

"The Problem of the Influence of Stream Irregularity on Oscillations of Turbine Blades"

Tr. Kaz. Aviats. In-ta [Works of Kazakh Aviation Institute], 1972, No 151, pp 11-20 (Translated from Referativnyy Zhurnal Aviatsionnyye i Raketnyye Dvigateli, No 5, 1973, Abstract No 5.34.34, from the Resume).

Translation: The equation for forced oscillations of blades under the influence of external forces with amplitude and phase varying with height is studied. The influence of the slope of nozzle blades on the resonance oscillations of power blades of turbines is analyzed. 3 figures, 4 biblio. refs.

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- 126 -

A0052409 -

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

2170

243749 ELECTROLYTIC TEST RIG to simulate the boiling of a current conductive liquid in a homogeneous nuclear reactor is a glass tray which is sealed on two sides by ion exchanger (cationactive) diaphragms, lined on both sides with kapron. The electrodes are accommodated in metal side caps which are held tight together by tie rods.

6.11.67. as 1195551/18-10, SUVOROV, L. Ya. et al. (1.10.69.) Bul. 17/14.5.69. Class 21b, Int. Cl. F 23k.

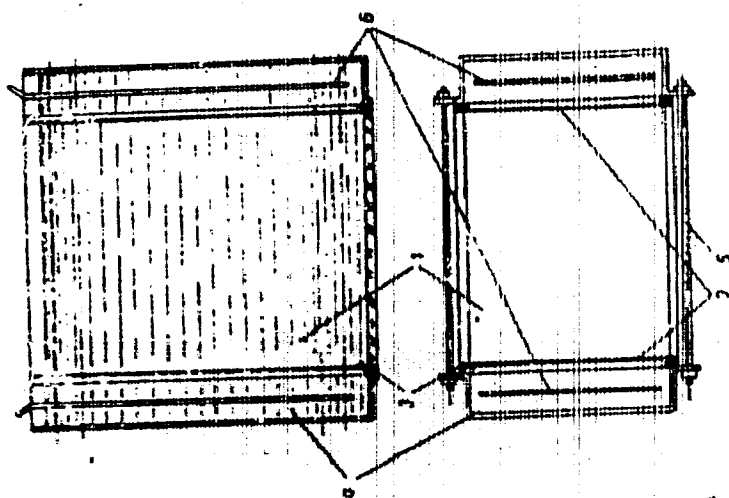
Suvorov, L. Ya.; Kurtsman, Ye. D.; Bahaytsev, V.P.

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AA0052409



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USSR

UDC 616.5-001.18+611.778

KURTYUKOVA, T. I., Department of Normal Anatomy, Second Moscow Medical  
Institute Imeni N. I. Pirogova

"The Microcirculatory Bed of the Skin and Its Appendices Under Normal  
Conditions and During Long-Term Exposure to Coldness"

Leningrad, Arkhiv Anatomii Gistologii i Embriologii, Vol 60, No 5, May 71,  
pp 40-45

Abstract: The purpose of this study was to investigate the microcircula-  
tory bed of the skin and its appendices in connection with the blood supply  
of the hair, as well as the characteristics of the changes in the blood  
supply of the skin and its appendices (the capillary follicles) in onto-  
genesis and under the prologued action of some agent on the skin (particu-  
larly the effect of coldness). Portions of the skin from the hairy part  
of the head from deceased persons who had died accidentally were used.  
Arterial as well as venous networks are distributed in a plane parallel  
to the skin surface at the boundary between the vascular and subvascular  
layers. The arterioles have a width of 12-15  $\mu$ , the venules have a width  
of 20-25  $\mu$ . Precapillary and postcapillary members could be distinguished  
in these skin networks (by an impregnation method). The blood supply of  
the hair follicles, which are appendices of the skin, takes place through

177

USSR

KURTYUKOVA, T. I., *Arkhiv Anatomii Gistologii i Embriologii*, Vol 60, No 5, May 71, pp 40-45

perifollicular vessels coming from the subpapillary and subdermal arterial networks as well as from the subpapillary, intradermal, and subdermal venous networks. The terminal vascular bed of hair follicles is characterized by a longitudinal arrangement of the arteriole and venule members and a dense capillary network which is most clearly evident at the level of the functionally active part of the hair root. The interorgan vascular bed of the skin in regions of old-age baldness differs by the broadening of the components of the venule member at all levels, by blood stasis in venules, and atrophy of the vascular network in the hair follicle. The microcirculatory bed of the skin of rabbits was found to respond to prolonged local exposure to coldness by dilatation of venule and capillary members, blood stasis in them (immediately after the experiment), considerable broadening and diapedesis of blood cells, destruction of vascular walls, and subsequent formation of new capillaries.

2/2

1/2 029  
TITLE--MOLD LININGS -U-

UNCLASSIFIED

PROCESSING DATE--04DEC70

AUTHOR--(95)-NIZKOVSKIKH, V.M., KURUKLIS, G.L., GELFENBEIN, E.YU.,  
TARLINSKIY, I.V., KHOREV, V.N.  
COUNTRY OF INFO--USSR

SOURCE--GER. 1,558,150

DATE PUBLISHED--14MAY70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PATENT, MOLD LUBRICANT, EPOXY RESIN, MOLYBDENUM  
DISULFIDE, TOLUENE, BUTANOL, ETHANOL, KETONE, ETHYLENE GLYCOL, ACETATE,  
PETROLEUM PRODUCT, ORGANIC SOLVENT, METAL CASTING, MOLDING MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3004/0838

STEP NO--GY/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0131431

UNCLASSIFIED



UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 029

CIRC ACCESSION NO--AA0131431  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. MOLD LINING COMPN. USED IN  
PRESSURE MOLDING OF METALS WERE PREPD. FROM MOS SUB2, EPOXY RESINS,  
DI-BU PHTHALATE, AND POLYETHYLENE POLYAMINE DILD. WITH NITRO CONTG.  
SOLVENTS. A COMPN. OF THIS TYPE WAS DILD. WITH A MIXT. OF PHNE, BUOH,  
ETOH, ME SUB2 CO, ETHYLENE GLYCOL, AND BU OR AMYL ACETATE, COATED ONTO  
THE WALL OF A MOLD, AND DEGREASED WITH ME SUB2 CO OR ETOH. THE COATING  
HARDENED MORE QUICKLY THAN PREVIOUS COATING COMPN. TO GIVE A SMOOTH  
THIN LINING WHICH INCREASED THE EASE OF REMOVAL OF THE CASTING. AFTER  
2-3 CASTINGS, THE SURFACE WAS WASHED WITH PETROLEUM AND RECOATED.  
FACILITY: OROZHONIKIDZE, URAL PLANT OF HEAVY MACHINE BUILDING.

UNCLASSIFIED

S/019/40/000/013/110/112  
AL52/A029

AUTHORS: Kurkulov, Ye.N., Khvastunov, V.G.

TITLE: A Device for Finishing (Polishing, Dressing) Flat Surfaces of  
Articles /Particularly the Surfaces of Cutting Blades of Cutters  
Used in Planing Films Out of Fluorine Plastics 5

PERIODICAL: Byulleten' izobreteniy, 1960, No. 13, p. 78

TEXT: Class 67a. 6. No. 129961 (648183/25 of December 19, 1959). This device contains a vessel (cup) with lapping material to which are imparted directional vibrations by a vibrator. It has the following special feature: to achieve a precise fitting of surfaces being lapped to the lapping plate (the bottom of the vessel), and to impart to them a planetary work motion with respect to the plate axis, this device is fitted with pressure disks holding the articles and pressing them against the lapping plate. The disks, together with the articles they hold, rotate round their axes and round the vessel axis, under the effect of the vibrations in the vessel imparted to it by the vibrator.

Card 1/1

USSR

UDC 621.396.67:621.317.743

K  
KONONOV, V. M., KURYANOV, A. V., YELSAKOV, N. G.

"Test Unit for Recording the Phase Characteristics of Antennas"

Obmen opytom v radioprom-sti (Exchange of Experience in Radio Industry),  
vyp. 5, Moscow, 1970, pp 62-63 (from RZh-Radiotekhnika, No 9, Sep 70, Ab-  
stract No 9893)

Translation: This article contains a description of a laboratory test unit for measuring and recording the amplitude and phase characteristics in the near zone of antennas basically made of standard superhigh frequency devices and elements. There is one illustration and a two-entry bibliography.

1/1

USSR

UDC 519.21

KUR'YANOV, B. F., MEDVEDVA, L. Ye.

"Harmonic Analysis of Stable Random Processes (The Use of the Fast Fourier Transform)"

Garmonicheskiy Analiz Statsionarnykh Sluchaynykh Protsessov, (S Ispol'zovaniyem Bystrogo Preobrazovaniya Fur'ye) [English version above], Moscow University, 1970, 63 pages (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V98K).

No Abstract.

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1/2 030

UNCLASSIFIED

PROCESSING DATE--13M0V70

TITLE--THEORY OF LOW FREQUENCY OCEAN NOISES --U-

AUTHOR--(02)-ISAKOVICH, M.A., KURYANOV, B.F.

COUNTRY OF INFO--USSR

SOURCE--AKUSTICHESKIY ZHURNAL, 1970, VOL 16, NR 1, PP 62-74

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--LOW FREQUENCY, OCEAN ACOUSTICS, FLUID SURFACE, ATMOSPHERIC WIND, SURFACE WAVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3007/1853

STEP NO--UR/0046/70/016/001/0062/0074

CIRC ACCESSION NO--AP0137054

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0137054

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

ABSTRACT. THE THEORY IS ADVANCED THAT LOW FREQUENCY OCEAN NOISES ARE GENERATED BY TURBULENT WIND ACTION AT THE SURFACE. THE ACTION OF THE WIND ON THE WATER SURFACE IS VIEWED AS A SYSTEM OF RANDOM TANGENTIAL PRESSURE FORCES DISTRIBUTED OVER THE OCEANIC SURFACE DEPENDENT ON THE CHARACTER OF THE WIND (VELOCITY, TURBULENCE) AND THE FORM OF THE DISTURBED SURFACE. THE SPECTRAL DENSITY OF NOISE PRESSURE IS EXPRESSED BY THE SPECTRUM OF SURFACE WAVES AND THE COEFFICIENT OF ATTENUATION OF THESE WAVES. THEORETICALLY COMPUTED NOISE LEVELS AND THE DEPENDENCE OF THESE LEVELS ON THE FREQUENCY, DEPTH, AND VELOCITY OF WIND ARE COMPARED WITH EXPERIMENTAL RESULTS IN THE LITERATURE. IT IS CONCLUDED THAT DIRECT WIND ACTION ON THE SURFACE LAYER IS ONE OF THE REASONS (PERHAPS THE MAIN REASON) FOR THE GENERATION OF LOW FREQUENCY OCEAN NOISES. FURTHER IT IS CONCLUDED THAT DIRECT WIND ACTION ON ICE FORMATIONS AND OVER THE SURFACE OF THE EARTH ALSO HAS A ROLE IN THE FORMATION OF NOISES UNDER THE ICE AND SEISMIC NOISE IN THE EARTH.

FACILITY: AKUSTICHESKIY INSTITUT.

UNCLASSIFIED

USSR

UDC 632.95

7

PARSHUTIN, S. N., STONOV, L. D., ZABALUYEV, I. T., BAYBAYEV, M. SH., SALIFANOV, G. G., MULLIYEV, K. N., FAVLOVA, G. N., SHOSAN, S. N., KHULIFAC, T. V., JUR'YANOV, Y. A., and IGURIPKO, V. G.

"Control of Overgrowth of Sewers and Drains in Turkmeniya"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 225-241 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 138533 by T. A. Belyayeva)

Translation: The article compares the effectiveness and profitability of mechanical, manual, thermal biological and chemical methods of removing vegetation from drains. Data are given on results of herbicide tests and applications. To kill reeds, cattails and other weeds in sewers during the second and subsequent years of service, dalapon shows the greatest promise in doses of 24-30 kg/ha with the addition of wetting agent SP-7 or CP-10.

1/1

1/2 025 UNCLASSIFIED PROCESSING DATE--300C170  
TITLE--PREPARATION AND STUDY OF AROMATIC OILS , RUBBER, SOFTENERS FROM  
VOLGOGRAD PETROLEUMS -J-  
AUTHOR--(05)-ZMIYEVSKIY, P.K., SALNIKOV, D.D., KATS, KH.SH., FRENKEL,  
R.SH., KURYANOVA, I.S.  
COUNTRY OF INFO--USSR  
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 9-10  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--AROMATIC HYDROCARBON, PHENOL, SOLVENT EXTRACTION, THERMAL  
STABILITY, PETROLEUM PRODUCT, ELASTICITY, RUBBER CHEMICAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1996/1525 STEP NO--UR/0318/70/000/002/0009/0010  
CIRC ACCESSION NO--AP0118512  
UNCLASSIFIED



2/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118512

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PHENOLIC EXT. FROM ZHIRNOVSK AND KOROBKOVSK PETROLEUM DEASPHALTATE WAS AGAIN EXTD. WITH 2.5 PARTS BY VOL. PHOH AND 10PERCENT H SUB2 O, GIVING A HIGHLY AROMATIC EXT. AND A NAPHTHENIC AROMATIC DISTILLATE. THE 2 PRODUCTS WERE GOOD SOFTENERS FOR RUBBER, YIELDING VULCANIZATES WITH ELASTICITY AND THERMAL STABILITY HIGHER THAN THOSE OBTAINED WITH THE USUAL ONES.

UNCLASSIFIED

USSR

UDC 621.357.1:661.432.2

FEDOROVA, N. S., KUR'YANOVA, L. P., and KULESHOVA, N. M.

"Features of the Electrochemical Preparation of Sodium Hypochlorite on Titanomagnetite"

Nauch. tr. Mosk. inzh.-ekon. in-t (Collection of Works of the Moscow Engineering Economics Institute), Vyp 45, 1972, pp 116-119 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, No 23(II), 1972, Abstract No 231217 by G. Volker)

Translation: Chlorine bubbles have a tendency to remain for a longer time on the surface of the titanomagnetite anode and they are much larger, as compared with the graphite anode. Therefore, application of the titanomagnetite anode results in a higher yield (by 20-30%) hypochlorite, in comparison with the graphite anode.

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- 2 -

USSR

UDC 669.715:539.4.016.3

AFIZOV, E. A., ZOLOTOREVSKIY, YU. S., KURYASHKIN, I. V., REIDCHIKOV, V. S.  
"Some Problems of Applying Technological Heating when Manufacturing Structural Elements from High-Strength Aluminum Alloys"

V sb. Metallovedeniye (Physical Metallurgy -- collection of works), No 15, Leningrad, Sudostroyeniye Press, 1971, pp 137-148 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 41646)

Translation: Experimental data are presented which characterize the effect of the temperature and duration of heating on the strength and plastic properties of the metal of structural elements made of Al-alloys. It is demonstrated that the application of technological heating can promote a significant increase in the operating qualities of the structural elements. When designing structural elements and developing the process of manufacturing them it is necessary to increase the possible variation of the mechanical properties of the alloys as a result of heating. 4 illustrations, 1 table, and a 12-entry bibliography.

1/1

172 033

UNCLASSIFIED  
 TITLE--INVESTIGATION OF THE DESTRUCTION OF ALUMINO SILICATE REFRACTORIES  
 WHICH CONTAIN BORON NITRIDE -U-  
 AUTHOR-(04)-GOGOTSI, G.A., KURIAT, R.I., TEREKHOVSKIY, B.I., TRESVYATSKIY,  
 S.G.  
 COUNTRY OF INFO--USSR  
 SOURCE--KIEV, PROBLEMY PROCHNOSTI, NO 3, MAR 70, PP 47-50  
 DATE PUBLISHED---MAR 70

K

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
 TOPIC TAGS--CRACK PROPAGATION, STRESS LOAD, THERMAL STRESS, REFRACTORY  
 MATERIAL, ALUMINUM SILICATE, BORON NITRIDE, CORUNDUM, CLAY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRA--1995/0854

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

CIRC ACCESSION NO--AP0116366  
 UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--A0116366

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

ABSTRACT. SPECIMENS OF COMPLEX ALUMINOSILICATES CONTAINING BORON NITRIDE WERE STUDIED UNDER THERMAL LOADING CONDITIONS UP TO 2,500 DEGREES C TO DETERMINE THE CHARACTERISTICS OF CRACK FORMATION AND DESTRUCTION OF THESE REFRACTORY MATERIALS. TO REGISTER THE TEMPERATURE DURING TESTING, SPECIAL THERMOMETRIC SPECIMENS WITH BUILT IN THERMOCOUPLES WERE MADE. THE TIMES OF FRACTURE WERE DETERMINED BY CURRENT CONDUCTING PICKUPS. IT WAS FOUND THAT COMPOSITIONS CONTAINING 40-50 PERCENT BORON NITRIDE ARE MOST RESISTANT TO THERMAL LOADING. WHEN THE BORON NITRIDE CONCENTRATION WAS HIGH (60 PERCENT OR MORE) THE FRACTURE OF THE CYLINDRICAL SPECIMENS WAS CHARACTERIZED BY BOTH RADIAL AND ANNULAR CRACKS. ANALYSIS OF THE FRACTURED SURFACES REVEALED THAT THE ABILITY OF THESE MATERIALS TO WITHSTAND THERMAL LOADING DEPENDS TO A CONSIDERABLE EXTENT ON THE DISTANCE BETWEEN CORUNDUM GRAINS AND THE UNIFORMITY OF THEIR DISTRIBUTION. IT WAS FOUND THAT A REFRACTORY MATERIAL WHICH WITHSTANDS EXTREME TEMPERATURE DIFFERENTIALS MAY BE PRODUCED BY PROPER SELECTION OF THE RATIO OF COMPONENTS REFRACTORY CLAY, CORUNDUM AND A CERTAIN AMOUNT OF BORON NITRIDE.

FACILITY: INSTITUTE OF PROBLEMS OF STRENGTH, ACADEMY OF SCIENCES OF THE UKRSSR; INSTITUTE OF PROBLEMS IN THE SCIENCE OF MATERIALS, ACADEMY OF SCIENCES OF THE UKRSSR, KIEV.

UNCLASSIFIED

AA0040778

KURYATNIKOV B.F.

UR 0482

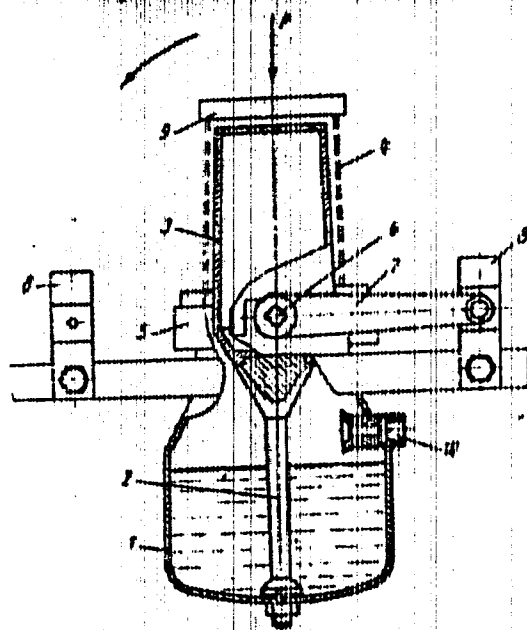
Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

240951 CASTINGS IMPREGNATOR comprises the tank (1) filled with the agent, a post (2) supporting an exchangeable insert (3) so as to leave a gap between it and wall of the casting (4). This casting is fixed to the flange (5) and can be handled (7) round the axis (6) down and locked onto the support (8) so as to keep the connection (10) above the fluid throughout. Fluid flows down into the casting cavity and then through the pores due to the arrival of compressed air from branch (10). The handle is reversed to release the now impregnated casting.

31.7.67 as 1176870/22-2. KHAMMATTI V. R. F. & KURYATNIKOV B.F. (20.8.69) Bul 13/1. Class 31. Int. Cl. B22d.

19750483

AA0040778



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19750484

1/3 . 020 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--PHOTOINDUCED TRIPLET SINGLET TRANSFER OF ELECTRONIC EXCITATION  
ENERGY IN THE LIQUID PHASE -U-  
AUTHOR--(05)--BERENFELD, V.M., CHUMAEVSKIY, YE.V., GRINEV, M.P.,  
KURYATNIKOV, YU.I., ARTEMYEV, E.T.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 678-82  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--EXCITATION ENERGY, FLUORESCENCE SPECTRUM, BROMINATED ORGANIC  
COMPOUND, ANTHRACENE, LIGHT EXCITATION, AROMATIC HYDROCARBON, ELECTRON  
SPIN  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1999/1895 STEP NO--UR/0048/70/034/008/0678/0682  
CIRC ACCESSION NO--AP0123682  
UNCLASSIFIED



2/3 . 020

UNCLASSIFIED

PROCESSING DATE--30JCT70

CIRC ACCESSION NO--AP0123682

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE LIQ. PHASE TRIPLET, SINGLET ENERGY TRANSFER IS AN INTERMOL. RADIATIONLESS TRANSFER OF ELECTRONIC EXCITATION ENERGY FROM THE TRIPLET LEVEL OF THE DONOR MOL. TO THE SINGLET EXCITATION LEVEL OF THE ACCEPTOR MOL. THIS WAS STUDIED IN THE FLUORESCENCE SPECTRUM OF 9,10-DIBROMDANTHRACENE IN BENZENE, SENSITIZED WITH ACPH, EXCITED WITH LIGHT OF 313 NM AT 20 DEGREES. THE CONCN. RANGES OF THE ACCEPTOR AND DONOR WERE 2 TIMES 10 PRIME NEGATIVE 5 MINUS 5 TIMES 10 PRIME NEGATIVE 3, AND 0.1, 0.5 MOLE-1, RESP. THE CONCN. EFFECT ON THE QUANTUM YIELD AND ON THE DECAY TIME OF THE FLUORESCENCE WITH PULSED PHOTOEXCITATIONS WERE STUDIED UNDER STEADY STATE AND NON STEADY STATE CONDITIONS, RESP. WITH INCREASED CONCN. OF THE ACCEPTOR, THE QUENCHING RATE OF THE AFTERGLOW BECOMES HIGHER. THE QUANTUM YIELD RATIO INCREASES WITH THE ACCEPTOR CONCN. APPROACHING A LIMITING VALUE EQUIVALENT; SIMILAR 0.3 FOR C IS GREATER THAN 3 TIMES 10 PRIME NEGATIVE 3 MOLE-1. BELOW THAT CONCN. THE ENERGY TRANSFER IS COMPETITIVE WITH THE SPONTANEOUS DEACTIVATION PROCESS OF THE TRIPLET ACPH MOL. THE PROCESSES OCCURRING IN THE SOLN. UNDER THE ACTION OF LIGHT ARE DISCUSSED. THE RELATIONS FOR THE INTENSITY OF THE FLUORESCENCE VS. TIME ARE DERIVED IN TERMS OF THE LIFETIME OF THE DONOR TRIPLET MOL.,  $\tau_{D0}$ ,  $\tau_{D1}$  AS  $(3 \pm 1)$  PLUS OR MINUS 10 PERCENT) TIMES 10 NEGATIVE PRIME 7 SEC. THE VALUE OF THE ENERGY TRANSFER CONST.,  $\kappa_{SD}$  EQUALS  $(5 \pm 0.5)$  TIMES 10 PRIME 10 L.-MOLE SEC IS CLOSE TO THAT OF THE DIFFUSION CONST. INDICATING THAT THE PROCESS IS A DIFFUSION CONTROLLED ONE. THE STUDY OF THE CONCN.

UNCLASSIFIED

3/3 020

UNCLASSIFIED

PROCESSING DATE--300170

CIRC ACCESSION NO--AP0123682

ABSTRACT/EXTRACT--DEPENDENCE OF THE QUANTUM YIELD FOR THE SENSITIZED  
FLUORESCENCE UNDER STEADY STATE ILLUMINATION GAVE THE RATE CONST. FOR  
THE TRIPLET SINGLET ENERGY TRANSFER,  $k_{PRIMETS\ SUBDA}$  EQUALS 1.5 TIMES  $10^9$   
PRIME9 1.- MOLE SEC. THE RATIO  $k_{PRIMETS\ SUBDA}/k_{PRIMET\ T\ SUBDA}$  IS  
APPROXIMATELY EQUAL TO 0.5 INDICATES A HIGH DEGREE OF SPIN ORBITAL  
INTERACTION DUE TO THE HALOGEN ATOMS PRESENT IN THE AROMATIC HYDROCARBON  
MOL.

UNCLASSIFIED

USSR

UDC 577.1:615.7/9

MAKAROV, K. S., and KURYGIN, G. V.

"Effect of Urea on the Toxicity of Casein Plasteln"

Nauchn. dokl. vyssh. shkoly. Biol. n. (Scientific Reports of Higher Schools. Biological Sciences), 1970, No 12, pp 35-37 (from RZh-Biologicheskaya Khimiya, No 10, May 71, Abstract No 10 F1696 from the resumé)

Translation: The protein-like substance casein plasteln (I) which has a molecular weight of about 5000 when treated with a solution of 8 M urea loses much of its toxicity for rats after intravenous injection of a solution of native I. This appears to be the result of conformational changes in the structure of I and it suggests that I, which contains all the amino acids of the original protein, has a secondary structure.

1/1

Polymers and Polymerization

USSR

UDC 678.742-13

KURYLENKO, A. I., and YAKINTSOV, V. P., Belorussian State University Imeni  
V. I. Lenin

"Inhibited Radiation Grafting Polymerization of Acrylonitrile in Polyethylene Films"

Minsk, Doklady Akademii Nauk BSSR, Vol 16, No 10, Oct. 72, pp 901-904

Abstract: The effect of hydroquinone on graft polymerization of acrylonitrile in polyethylene films was studied. It was shown that addition of such an inhibitor does not lower the effectiveness of the influence of graft polymer on the properties of the materials, that it does counteract the formation of homopolymer and acids in regulating the distribution of the graft polymer throughout the entire material. This polymerization inhibition method may be used with various initiators. The inhibitor makes it possible to select optimal chain length of the graft materials as well as gradients of the polymerization rates in microregions differing by their densities and properties.

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Absorption

USSR

LESHCHENKO, V. P., HRYCIENKO, O. D., and FEDOSEYCHUK, G. M., Kiev

Technological Institute of Food Industry

"Cation Exchange in Dioxane-Water Solutions on Weakly Acidic Cation Exchange Resin KE-4P2"

Kiev, Ukrainskiy Khimicheskii Zhurnal, Vol 33, No 2, Feb 20, pp 247-250

Abstract: A statistical method was used to study the exchange of  $K^+$  ions for  $Li^+$ ,  $Cs^+$  and  $Ca^{2+}$  ions on a carboxyl cation exchange resin KE-4P2 in dioxane-water solutions. The  $K^+ \rightarrow Ca^{2+}$  exchange is accompanied by an increase in the selectivity coefficient with increasing concentration of calcium, while in the case of the  $K^+ \rightarrow Li^+$  and  $K^+ \rightarrow Cs^+$  exchange, the coefficient is lowered. The distribution of the exchanging ions between the weakly acidic cation exchange phase in  $K^+$  form and the phase of external solution is affected by the solvolytic process of the resin's salt form in dioxane-water mixtures; this process reaches a maximum when the concentration of dioxane in the mixture is 30%.

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Ion Exchange

USSR

UDC 536.664 + 541.183.12

NEKRYACH, YE. F., GOROKHOVATSKAYA, N. V., SAMCHENKO, Z. A., and KURYLENKO, O. D., Institute of Colloidal Chemistry and Chemistry of Water, Academy of Sciences, UkrSSR

"Hydration Thermodynamics of a Strong Acidic Cation Exchange Resin KU-5"

Kiev, Ukrainskiy Khimicheskii Zhurnal, Vol 38, No 10, Oct 71, pp 1013-1017

Abstract: Results of sorption-thermochemical determinations and analysis of thermodynamical functions of water adsorbed by the cation exchange resin KU-5 are reported. The  $K^+$ ,  $Na^+$ ,  $Li^+$ ,  $Ca^{2+}$ ,  $Mg^{2+}$ , and  $Al^{3+}$  forms of the resin were studied and the data were calculated from sorption and thermochemical determinations carried out at  $20^\circ$ . It has been established that the graphs of function magnitudes related to the quantity of the adsorbed water reflect the hydration process laws which are connected with the nature of fixed and exchange ions. Analogously to other investigated cation exchange resins, the most informative are the functions  $E_c = f(x)$ ; from them it is possible to get qualitative estimates on the input of various types of interactions to the total hydration energy.

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USSR

UDC 539.214;539.374

KURYLEV, V. F., BABANSKIY, V. D.

"On the Problem of the Elastic-Plastic Deformation of a Cylindrical Shell"

Tr. Vses. n.-i. i konstrukt. in-t khim. mashinostr. (Works of the All-Union Scientific Research and Design Institute of Chemical Machine Building), 1972, No. 56, pp 39-42 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V45C)

Translation: The solution of A. A. Il'yushin is generalized for the axisymmetric problem of the elastic-plastic deformation of a cylindrical shell to the case of the presence of an axisymmetric load. The results of the paper are of interest in developing a technique for calculating the strength of vessels and equipment in the presence of their local plastic deformations. Authors' abstract.

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USSR

UDC 629.7.036.54-66:536.46

MAL'TSEV, V. M., KURYLEV, V. V., and SELEZNEV, V. A.

"The Ignition of Individual Metal Particles"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Gorennya i Gaz. Dinamiki Dispersn. Sistem, 1972--Sbornik (11th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972--Collection of Works), 1972, p 33 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 1, 1973, Abstract No 1.34.165. Resume)

Translation: The authors discuss the influence of various factors upon the ignition of particles of zirconium, titanium, magnesium, and zirconium hydride. The investigation was conducted by means of microphotographing the particles during heating in an atmosphere of air. The maximum temperature of the heater was 1900°K, the heating rate was from 2.5 to 120 degrees/sec. Particles 100 to 500 microns in size were investigated. The influence of the type of metal, particle size, heating rate, and porosity upon the ignition temperature was established. Zirconium, titanium, and zirconium hydride ignite in two stages. The first stage is smoldering, which is characterized by elevation of the particle temperature to a red glow. The second stage is a flare-up, characterized by the formation of a bright nucleus of light. Zirconium and

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USSR

MAL'TSEV, V. M., et al., 11-ya Vses. Konf. po Vopr. Isparen'lya, Goren'lya i Gaz. Dinamiki Dispersn. Sistem, 1972--Sbornik, 1972, p. 33

titanium are characterized by the earlier ignition of larger particles. The converse pattern is observed for magnesium. As the heating rate increases, the  $T_{\text{ignit}}$  of the particles decreases. The ignition temperature of the less dense particles is lower because of the greater specific surface.

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- 19 -

USSR

UDC 547.759.3.07:543.422.4.25

SHEVEDOV, V. I., KURYLO, G. N., and GRINEV, A. N., All Union Scientific Chemical-Pharmaceutical Research Institute Imeni S. Ordzhonikidze, Moscow

"Methyl Ester of  $\gamma$ -Phenylacetoacetic Acid in Fisher Indole Synthesis"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 8, Aug 72, pp 1079-1082

Abstract: Methyl esters of  $\gamma$ -phenyl- $\beta$ -hydrazinocrotonic acids substituted at the nitrogen atom form methyl esters of 3-phenylindolyl-2-acetic acids in presence of sulfuric acid, the reaction being carried out at room temperature. 2-benzylindole-3-carboxylic acid esters form only in very small amounts under these conditions. When the indolization is carried out at 190-200°, without catalyst, the direction is reversed, benzylindole-3-carboxylic acid esters forming predominantly. When reacted with polyphosphoric acid, these compounds yield derivatives of benzo[*b*]carbazole, which upon oxidation produce 6,11-dioxobenzo[*b*]carbazoles.

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USSR

UDC 621.385.6

GINOVER, A.S., GYZEV, A.A., KON'KOV, V.P., KURYSHEV, B.L., KISELEV, A.I.,  
SINITSA, S.P., TEPMAN, B.G.

"Integrated Circuit With Programmed Structure Using MIS Memory Transistors"

Radiotekhnika i elektronika, Vol XVII, No 7, July 1972, pp 1591-1592

**Abstract:** The integrated circuit is described of an all-purpose element filled with conventional MIS [metal-insulator-semiconductor] transistors and MIS transistors with a memory (memory transistors). The integrated circuit realizes the following logical function:

$$z(t + \delta) = \bar{v}a_i x_i \quad (i = 1, 2, 5, 0).$$

where  $x_i$  is the input logical variables;  $a_i$  is the state characterizing the  $i$ -th memory transistor;  $z$  is the output variable; and  $\delta$  is the delay. The circuit can be used for construction of a specialized array for fulfillment of logical, switching, and memory functions and also for construction of algebraically-structurally-uniform logical nets, which makes it possible for each problem to organize a specialized computing device by a programmed adjustment of its elements. 1 fig. 5 ref. Received by editors, 16 June 1971.

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USSR

UDC 616.24-003.668.4-092.9-008.939.6

PAVLOVA, I. V., KHARLAMOVA, S. F., and KURYSHNEVA, N. G., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR

"Protein Metabolism in Experimental Berylliosis"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 5, 1970, pp 56-57

Abstract: Single injections of rats with BeO (intratracheally) or BeSO<sub>4</sub> (intramuscularly) decreased the albumin content, while increasing the content of alpha- and gamma-globulins in serum. Injections also decreased the content of SH groups in liver mitochondria. Radioisotope studies (1-C<sup>14</sup>-lysine and 1-C<sup>14</sup>-glycine) revealed a high rate of incorporation of the isotope into soluble and insoluble proteins in both liver and lung tissue after the rats were poisoned with BeO. Thus, protein metabolism is significantly affected by beryllium. Shifts were noted primarily in the organs for which the element has an affinity. Shifts involved protein synthesis and lysis as well as protein structure (electrophoretic mobility, lowered level of SH groups).

1/1

Theoretical Physics

USSR

UDC 530.145

KURYSHKIN, V. V.

"Is It Possible to Reduce Quantum Mechanics to Probability Statistical Theory?"

Sb. nauch. rabot aspirantov. Un-t druzhby narodov im Patrisa Lumumby. Fak. Fiz.-matem. i estestv. n. (Collected Scientific Works of Postgraduates. University of Friendship of Peoples imeni Patrice Lumumba. Physics-Mathematical and Natural Sciences Department), 1970, vyp. 7, pp 211-215 (from RZh-Fizika, No 2, Feb 71, Abstract No 2B37)

Translation: A new version of the correspondence rule between classical variables and quantum operators proposed by the author (RZh-Fizika, 1970, 4B41) is used to construct a "quantum distribution function"  $F(q, p, t)$  defined by the property that for the arbitrary classical variable  $A(q, p)$  the integral over the phase space  $(q, p)$  of the product  $A(q, p)F(q, p, t)$  is always equal to the mean value of  $A$  in quantum mechanics. It is shown that in contrast to the earlier proposed expression, the expression for the quantum distribution function assumes only positive real values and is 1-normalized. The given result is interpreted as complete equivalence of

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USSR

KURYSHKIN, V. V., Sb. nauch. rabot aspirantov. Un-t družby narodov im  
Patrisa Lumumby. Fak. Fiz.-matem. i estestv. n. (Collected Scientific Works  
of Postgraduates. University of Friendship of Peoples imeni Patrice Lumumba.  
Physics-Mathematical and Natural Sciences Department), 1970, vyp. 7, pp  
211-215 (from RZh-Fizika, No 2, Feb 71, Abstract No 2B37)

of the version of quantum mechanics with the new correspondence rules and  
classical statistical theory. The equation is also derived for the quantum  
distribution function  $F(q, p, t)$ .

2/2

USSR

UDN: 530.145

KURYSHKIN, V. V.

"Possible Quantum Theory Variation"

Sb. nauch. rabot aspirantov. Un-t družby narodov im Patrisa Lumumby. Fak. fiz.-matem. i estestv. n. (Collected Scientific Works of Postgraduates. University of Friendship of Peoples imeni Patrice Lumumba. Physics-Mathematical and Natural Sciences Department), 1970, vyp. 7, pp 204-210 (from RZh-Fizika, No 2, Feb 71, Abstract No 2B36)

Translation: A new version of the one-to-one rule of correspondence between classical variables and quantum mechanical operators is proposed. The indicated variation assumes that all physical quantities are given by functions in a phase space. It has the property that the quantum mechanics version generated by it is a theory with latent parameters. It is shown that in the defined limiting case the given theory becomes ordinary quantum mechanics.

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USSR

UDC: 621.373:535(206.3)

BELOUSOVA, I. M., KISELEV, V. M., KURZENKOV, V. N.

"Spectrum of Stimulated Emission of Atomic Iodine on the Hyperfine Structure of the Transition  $2P_{1/2} - 2P_{3/2}$  (7603  $\text{cm}^{-1}$ )"

Leningrad, Optika i Spektroskopiya, Vol 33, No 2, Aug 72, pp 203-209

Abstract: An experimental study is made of the emission spectrum of atomic iodine-127 on the hyperfine structure of the transition  $2P_{1/2} - 2P_{3/2}$  in the free emission mode. The emission spectrum from a photodissociation laser was registered in the experiment. A diagram of the experimental installation is given and its operation is described. The results of the measurements showed that of the six components of the hyperfine structure of the spontaneous transition  $5p^2P_{1/2} - 5p^2P_{3/2}$  of atomic iodine, three are realized in stimulated emission: the components 3-3, 3-4, and one of the components 2-1 or 2-2. It is shown that the spectrum is multicomponent in the presence of a magnetic field; the number of components being realized in emission is determined by the amplification factor. By compensating the magnetic fields of the pumping currents, stable single-mode

1/2



USSR

BELOUSOVA, I. M., et al., Optika i Spektroskopiya, Aug 72, pp 203-209

emission can be achieved without any power loss as compared with multi-component emission. The other components of the hyperfine structure are not realized in emission in the absence of a magnetic field, regardless of the amplification factor, which fact is apparently due to the strong competition between them under these conditions.

2/2

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BELOUSOVA, I. M., BOBROV, B. D., KISELEV, V. M., KURZINKOV, V. N., KREPOSTNOV, P. I.

"Photodissociative I<sup>127</sup> Laser in a Magnetic Field"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy fiziki, Vol 65, No 2 (8), 1973, pp 524-536

Abstract: A study was made of the effect of a magnetic field and also a number of other factors on the kinetics of the radiation spectrum of a photodissociative I<sup>127</sup> laser in the  $2P_{1/2} - 2P_{3/2}$  transition. The behavior of the spectrum of the induced radiation was investigated in the presence and absence of a magnetic field, and the superthin splitting constant of the upper operating level of the iodine atom  $A_{1/2}$  was determined experimentally. A broadening of the luminescence line in the operating transition of the iodine atom during collisions with C<sub>2</sub>F<sub>7</sub>I molecules and also with argon and xenon atoms found. Then the corresponding broadening cross sections and the Van der Waals constants were determined for the interaction of the iodine atom with these gases. The calculated values of the frequencies and amplification factors for the most intense groups of Zeeman components were obtained with a varia-

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USSR

BELOUSOVA, I. M., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 65, No 2 (8), 1973, pp 524-536

tion explaining the behavior of the induced radiation spectrum with the variation of the magnetic field. The magnitude of the relaxation between sublevels with different  $F$  of the upper operating state  $^2P_{1/2}$  was evaluated.

The study of the spectral composition of the induced radiation in the  $^2P_{1/2} - ^2P_{3/2}$  transition of the iodine atom showed that the radiation kinetics of the given laser, which is a complex spectral system, depends on a number of factors such as the magnitude of the magnetic field, the gas pressure in the cell, and the magnitude of the pumping energy. The characteristics of the output radiation of the laser are determined not only by the kinetics of the chemical reactions but also by the structure of the upper and lower transition states, which varies even during the oscillation pulse time. This factor must be considered when constructing various kinetic models of the photodissociative iodine laser. In turn, for a more detailed study of the behavior of the oscillation spectrum in a magnetic field the population kinetics on all sublevels of the investigated transition must be considered.

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- 40 -

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BELOUSOVA, I. M.; KISELEV, V. M., KURZENKOV, V. N.

"Line Width of Stimulated Emission of Atomic Iodine on the Transition  
 $^2P_{1/2} - ^2P_{3/2}$ "

Leningrad, Optika i Spektroskopiya, Vol 33, No 2, Aug 72, pp 210-213

Abstract: An experimental study is made of the width of the line and the mode structure of stimulated emission of atomic iodine-127 on the spontaneous transition  $^2P_{1/2} - ^2P_{3/2}$  in a photodissociation laser. It was found that only one of the many possible longitudinal emission modes is realized, regardless of the amplification factor, the presence of a magnetic field, distance between mirrors, or the addition of an inert gas. The emission line width is less than 0.002 Å (35 MHz). The emission line width does not exceed 0.002 Å with addition of an inert gas over a broad range of variation in pressure and amplification factor.

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104032q Coefficients of tetrafluoroisobutane and heptafluoroiodopropane diffusion in inert gases. Bolousova, L. M.; Kiselev, V. M.; Kurzenkov, V. N. (USSR). *Zh. Fiz. Khim.* 1970, 40(2), 402-403. The diffusion coeffs. of the following binary mixts. were studied: He-C<sub>4</sub>F<sub>10</sub>, He-C<sub>7</sub>F<sub>13</sub>, Ne-C<sub>4</sub>F<sub>10</sub>, Ne-C<sub>7</sub>F<sub>13</sub>, Ar-C<sub>4</sub>F<sub>10</sub>, Ar-C<sub>7</sub>F<sub>13</sub>, Xe-C<sub>4</sub>F<sub>10</sub>, and Xe-C<sub>7</sub>F<sub>13</sub>. The diffusion, as a function of time, was described by the J. Crank (1956) equation. It was assumed that the diffusion coeff. does not depend on the concn. of the mixts.; however, there is a weak dependence. The diffusion coeffs. are of interest for characterizing the diams. of the iodide ions, the potentials of interaction, and the bond types. L. Holl

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TITLE--PROCESSING OF STILL RESIDUES OF FURFURAL PRODUCTION -U-

AUTHOR--BADOVSKAYA, L.A., KULNEVICH, V.G., FIRSOVA, L.I., SHAPIRO, YU.N.,  
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 2 METHODS PRESENTLY USED FOR PROCESSING RESIDUES FROM FURFURAL RECTIFICATION ARE THE RECOVERY OF FURFURAL (I) AND METHYLFURFURAL (II) AND DECARBOXYLATION TO SYLVAN (ALPHA METHYL-FURAN). THE METHOD PROPOSED CONSISTS IN OXID. OF THE RESIDUES WITH H SUB2 O SUB2 TO YIELD ORG. ACIDS. ALSO DEVELOPED WAS A NEW METHOD FOR CHEM. ANAL. OF THE RESIDUE, BETTER SUITED FOR INDUSTRIAL CONTROL THAN EITHER POLAROGRAPHY OR GAS CHROMATOGR. THE METHOD, WHICH HAS BEEN DESCRIBED ELSEWHERE (SHAPIRO AND KUL'NEVICH, 1969), IS BASED ON UV SPECTROMETRY AND CALCNS. OF I CONC. FROM THAT OF A STD. SOLN. AND THE OPTICAL DS. OF THE TEST SAMPLE AND THE STD. SOLN. THE AMT. OF IMPURITIES ARE DETD. FROM DIFFERENTIAL SPECTRA. THE ACCURATE METHOD MAKES POSSIBLE SEP. I AND II DETNS. EVEN IN STRONGLY RESINIFIED MATERIAL. COM. RESIDUES ANALYZED CONTAINED 22-95PERCENT FURALDEHYDES, DEPENDING ON THE RAW MATERIAL AND THE I PRODN. METHOD. THEY WERE OXIDIZED WITH 30PERCENT H SUB2 O SUB2 AT A MOLAR RATIO OF FURALDEHYDES-H SUB2 O SUB2 OF 1:3, A TEMP. OF 64 PLUS OR MINUS 10DEGREE, WITH INTENSE MIXING FOR 4 HR. THE QUAL. AND QUANT. COMP. OF THE OXIDN. PRODUCTS WERE ANALYZED BY PAPER, COLUMN, AND THIN LAYER CHROMATOGR. OXIDN. CONVERTED I TO A MIXT. OF CRYST. ACIDS (MALEIC, FUMARIC, AND SUCCINIC). II WAS CONVERTED TO BETA ACETYLACRYLIC (III) AND LEVULINIC ACID (IV). THE RESIDUAL PEROXIDES WERE DECOMPO. BY TREATMENT WITH THIOUREA (1PERCENT BASED ON THE VOL. OF REACTION PRODUCTS). THE CRYST. ACIDS WERE SEPD. BY RECRYSTN. FROM HOT WATER, AND IV BY DISTN. (70DEGREES-5 MM). IV IS RECOVERED BY EVAPN. OF THE SOLVENT AFTER EXTN.

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ABSTRACT/EXTRACT--THE OVERALL YIELD OF THE ACID WAS 85PERCENT, AND THE PERCENT COMPN. OF THE ACIDS WAS SUCCINIC 28, IV 24, III 26, MALEIC 18, AND FUMARIC 3. HIGHER YIELDS WERE OBTAINED FROM RESIDUES WITH A HIGH INITIAL CONTENT OF ALDEHYDES. SAMPLES WITH LOW ALDEHYDE CONTENT GAVE POOR YIELDS (AT CONTENT 22PERCENT, THE YIELD OF TOTAL ACID WAS 21.6PERCENT.

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KURZNER, A. B., SINEL'NIKOV, A. YE., CHELPANOV, I. B., Leningrad

"Systematic Errors of Pendulum Accelerometers for Random Vibration of the Base"

Novosibirsk, Avtometriya, No 3, 1971, pp 22-26

Abstract: During operation of a pendulum on a vibrating base its angle of deflection from the vertical contains along with the variable component, a constant component (drift) defined both by the nature and the parameters of the vibrations and the characteristics of the pendulum itself. The appearance of drift implies additional errors estimated here in the example of a pendulum compensation accelerometer. An approximate method of considering the dynamic properties of the pendulum is described, and the general expression for the drift angle is obtained. A number of limiting and specific cases are considered. The error expressions for two standard autocorrelation functions are presented as an example. The results obtained can be used to estimate the errors and efficiently select the accelerometer parameters for operation under defined vibration conditions.

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KURZON, A. G.

"The Progress of Gas-Turbine Engineering and Prospects for Use of the Gas Turbine in Maritime Transport"

Moscow, Energetika i Transport, No 2, 1972, pp 180-187

Abstract: A survey of gas-turbine propulsion facilities for water-displacement vessels, primarily freighters, developed outside the USSR, is presented, together with information on the Soviet freighter Pechel'skaya Komuna, propelled by the GTU-20 gas-turbine engine produced by the Leningrad Kirov Plant. The outlook for the forthcoming construction of gas-turbine vessels is presented.

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- 187 -