

2/2 032

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125748

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. THE MAXIMUM VALUE OF THE TENSILE FORCE THAT CAN BE APPLIED TO A BRITTLE FIBRE STRAND BEFORE RUPTURE IS LESS THAN THE PRODUCT OF ARITHMETIC MEAN OF THE ULTIMATE STRENGTH OF A FIBRE AND THE CROSS SECTIONAL AREA OF THE ENTIRE STRAND. IT DEPENDS ON THE STATISTICAL DISTRIBUTION OF THE STRENGTH OF INDIVIDUAL FIBRES. THIS PAPER IS CONCERNED WITH THE EVALUATION OF THAT MAXIMUM FOR A KNOWN DISTRIBUTION OF FIBRE STRENGTH. THE MAXIMUM VALUE OF THE TENSILE FORCE IS FOUND IN FUNCTION OF THE STANDARD DEVIATION FOR A LINEAR AND GAUSSIAN DISTRIBUTION. THESE FUNCTIONS ARE PRESENTED IN FIG. 2 IN A NONDIMENSIONAL FORM. THEY ARE THE RATIO  $S$  OF THE STANDARD DEVIATION TO THE ARITHMETIC MEAN OF THE ULTIMATE STRENGTH OF A FIBRE AND THE RATIO  $Z$  SUBMAX OF THE MAXIMUM VALUE OF THE FORCE TO THE PRODUCT OF THE CROSS SECTIONAL AREA OF THE STRAND AND THE MEAN FIBRE STRENGTH. THE PROPORTION OF THE RUPTURED FIBRES IS FOUND AS WELLS AS THE TENSILE STRESS IN THE UNRUPTURED ONES WHEN THE TENSILE FORCE REACHES HIS MAXIMUM. IT IS STATED THAT THE FOLLOWING APPROXIMATE FORMULA CAN BE USED FOR ANY DISTRIBUTION THAT MAY BE MET WITH IN PRACTICE:  $\sigma_{SUBP}$  EQUALS  $\sigma_{SUBW}(1-1,7S)$  FOR  $S$  SMALLER THAN 0,3, AND  $\sigma_{SUBP}$  EQUALS 0,5  $\sigma_{SUBW}$  FOR  $S$  SMALLER THAN 0,3. WHERE  $\sigma_{SUBP}$  IS THE MAXIMUM VALUE OF THE TENSILE FORCE DIVIDED BY THE CROSS SECTIONAL AREA OF THE ENTIRE STRAND AND  $\sigma_{SUBW}$  IS THE ARITHMETIC MEAN OF THE ULTIMATE STRENGTH OF A FIBRE. FINALLY, THE DISTRIBUTIONS KNOWN FROM THE LITERATURE FOR GLASS FIBRES ARE QUOTED AND THE COEFFICIENT OF REDUCTION OF STRENGTH FOR ROVING OR FIBRE GLASS REINFORCED PLASTICS IS DETERMINED.

UNCLASSIFIED

Acc. Nr:

**0049956**

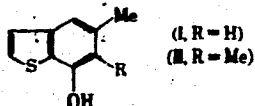
Abstracting Service:

CHEMICAL ABST.

Ref. Code:

**4170 UR 0409**

90170a Preparation of 7-hydroxy derivatives of thionaphthene. New means for synthesizing thionaphthene acid. Dulenko, V. I.; Katts, I. G.; Dulenko, L. V.; Dorofeenko, G. N. (Donets. Otd. Fiz.-Org. Khim., Donetsk, USSR). *Rhim. Geterotsikl. Soedin.* 1970, (1), 134 (Russ). Thieno[2,3-c]pyrylium salts prep'd. by acylation of 3-acetylthiophene opened the ring in alkali to form 2-acyl-3-acetylthiophenes which then



cyclized to 7-hydroxythianaphthenes. Thus, in aq. alc. NaOH was prep'd. 5-methyl-7-hydroxythianaphthene (I), m. 68°, and 5,6-dimethyl-7-hydroxythianaphthene (II), m. 99-100°.

G. M. Kosolapoff

REEL/FRAME  
**19801894**

7

USSR

UDC 547.739.3'812'821

DULENKO, V. I., ALEKSEYEV, N. N., and BARANOV, S. N., Donetsk Branch of Physical-Organic Chemistry, Institute of Physical Chemistry, Acad. Sc., UkrSSR, Donetsk

"Selenopheno [3,2-c]pyrylium Cation -- A new Heteroaromatic System"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 7, Jul 71, pp 997-998

Abstract: Acylation of 5-methyl-2-acetyl derivatives of selenophene (I) with carboxylic anhydrides (II) in presence of equimolar quantities of perchloric acid (III) yields selenopheno[3,2-c]pyrylium perchlorates (IV). The reaction is carried out at room temperature by adding (I) to a previously prepared mixture of an equivalent amount of (III) and excess (II). The structure of the products was supported by IR spectra. An intensive band at  $1620-1616\text{ cm}^{-1}$  was assigned to symmetric valence vibrations of the pyrylium cation. The product is a new heteroaromatic system capable of reactions typical of the pyrylium system: reaction of ammonia with selenopheno[3,2-c]pyrylium salts yields new selenopheno[3,2-c]pyridines: 2,3,4,6-tetraethylselenopheno[3,2-c]pyridine, m.p.  $81-82^{\circ}$  and 2,4,6-trimethylselenopheno[3,2-c]pyridine, m.p.  $59-60^{\circ}$ .

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--CYCLOPROPENYL, AND CYCLOHEPTATRIENYLPHOSPHONIUM SALTS -U-  
AUTHOR--(04)--DULENKO, V.I., SEMENOV, N.A., BARANOV, S.N., KRIVUN, S.V.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 701  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CYCLIC GROUP, ORGANIC PHOSPHORUS COMPOUND, POLYNUCLEAR  
HYDROCARBON, PERCHLORATE, BROMIDE, BORON FLUORIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/0885 STEP NO--UR/0079/70/040/003/0701/0701  
CIRC ACCESSION NO--AP0124548  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124548

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION PPH SUB3 WITH I (X EQUALS CLO SUB4, BF SUB4 OR BR) AFTER BRIEF HEATING IN A POLAR SOLVENT SUCH AS MEND SUB2, MECH, OR CHCL SUB3, GAVE 100PERCENT II. THE CHARGE TRANSFER TOWARD THE P ATOM IN II TENDS TO STABILIZE THE PERCHLORATE AND REDUCES HYGROSCOPICITY OF THE BROMIDE. USE OF THESE SALTS FOR VITTIG REACTIONS SHOULD AFFORD A ROUTE TO ALKYLIDENE DERIVS. OF CYCLOHEPTATRIENE AND CYCLOPROPENE, WHEN EITHER TROPYLIUM OR I IONS ARE USED IN THE ABOVE REACTION, RESP. FACILITY: DGNETS. OTD. INST. FIZ. KHIM. IM. PISARZHEVSKOGO, DONETSK, USSR.

UNCLASSIFIED

Acc. Nr:

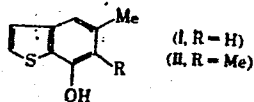
AP0049956

Abstracting Service:  
CHEMICAL ABST.

Ref. Code:

UR 0409

90170a Preparation of 7-hydroxy derivatives of thionaphthene. New means for synthesizing thionaphthenic acid. Dulenko, V. I.; Katts, I. G.; Dulenko, L. V.; Dorofeenko, G. N. (Donetsk. Otd. Fiz.-Org. Khim., Donetsk, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 134 (Russ). Thieno[2,3-c]pyrylium salts prepd. by acylation of 3-acetylthiophene opened the ring in alkali to form 2-acyl-3-acetylthiophenes which then




cyclized to 7-hydroxythianaphthenes. Thus, in aq. alc. NaOH was prepd. 5-methyl-7-hydroxythianaphthene (I), m. 68°, and 5,6-dimethyl-7-hydroxythianaphthene (II), m. 99-100°.

G. M. Kosolapoff

REEL/FRAME  
13801894

7

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--MULTIFUNCTIONAL SYMMETRIC SCHEMES -U-  
AUTHOR--DULEPOV, YE.G.   
COUNTRY OF INFO--USSR  
SOURCE--AVTOMATIKA I TELEMEXHANIKA, 1970, NR 5, PP 207-208  
DATE PUBLISHED-----70  
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., MATHEMATICAL SCIENCES  
TOPIC TAGS--CODING, LINEAR AUTOMATIC CONTROL SYSTEM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1993/0919 STEP NO--UR/0103/70/000/005/0207/0208  
CIRC ACCESSION NO--AP0113754  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0113754

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD OF LOCAL CODING SUGGESTED BY O. B. LUPANOV IS USED FOR THE CONSTRUCTION OF CONTROLLED SYMMETRIC SCHEMES. IT IS SHOWN THAT THE COMPLEXITY OF SUCH SCHEMES INCREASES IN ACCORDANCE WITH THE LINEAR LAW TOGETHER WITH THE INCREASE OF THE NUMBER OF ARGUMENTS.

UNCLASSIFIED



DULEPOV, Ye. V.

RAN / 1 K. 760 / 5-MX-173  
 15

IV. INTERACTION OF SHOCK WAVES WITH SOLIDS

Batsanov, S. S., Ye. V. Dulepov, E. M. Moroz, L. V. Lukina, and V. V. Romanov. Effect of explosions on materials. Shock compression of rare earth metal fluorides. FGIV, no. 2, 1971, 266-269.

Results of a study of shock compression of ten rare earth metal (REM) fluorides and yttrium fluoride are presented. It is shown that the great physical characteristics change occurs using 30-50 g hexogene charges, with the exception of  $\text{CeF}_3$  and  $\text{PrF}_3$  for which the most significant changes occur using 100-150 g charges. All the shock-compressed materials displayed optical anisotropy, since the initial materials were finely dispersed and therefore were pseudoisotropic. The new phase is normally inhomogeneous, and the properties change occurs (or accumulates) in different grains with varying intensity; the value of the effect is maximal only in a small number of crystalline particles. Table 1 shows refractivity indices of the new phases:

a	b		c	
	$n_D^{20}$	$n_D^{20}$	$n_D^{20}$	$n_D^{20}$
$\text{LaF}_3$	1.47	1.47	1.40	1.45
$\text{CeF}_3$	1.41	1.41	1.40	1.41
$\text{PrF}_3$	1.40	1.40	1.40	1.40
$\text{SmF}_3$	1.40	1.40	1.40	1.40
$\text{EuF}_3$	1.40	1.40	1.40	1.40
$\text{GdF}_3$	1.40	1.40	1.40	1.40
$\text{DyF}_3$	1.40	1.40	1.40	1.40
$\text{HoF}_3$	1.40	1.40	1.40	1.40
$\text{ErF}_3$	1.40	1.40	1.40	1.40
$\text{YbF}_3$	1.40	1.40	1.40	1.40
$\text{YF}_3$	1.40	1.40	1.40	1.40

Table 1. a - compound, b - initial material, c - compressed material

USSR

UDC 541.57

DULEPOV, Ye. V., Institute of Thermophysics, Siberian Department, Academy of  
~~Sciences USSR~~, Novosibirsk

"Study of the Chemical Bonding in LiF and CaF<sub>2</sub> Single Crystals during Heating"

Moscow, Zhurnal Strukturnoy Khimii, Vol 12, No. 1, Jan-Feb 71, pp 193-195

Abstract: The parameters of the Szigeti equation, used widely in studies of chemical bonds in ionic crystals, were studied as functions of the temperature. The goal was to study the behavior of the charge  $e^*$  in heating LiF and CaF<sub>2</sub> single crystals. It was determined that the charge  $e^*$  is practically constant in the temperature range 0 -- 600°K. It is suggested that a special theoretical analysis would have to be carried out to determine whether this phenomenon could be applicable to other crystals.

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USSR

UDC 621.396.6-181.5

GUBAREV, L. M., ~~DULIN, V. N.~~ STRUKOV, A. Z.

"Homogeneous Computer Media and Problems of Microelectronic Realization"

Kiev, IVUZ Radioelektronika, Vol 14, No 11, Nov 71, pp 1265-1281

Abstract: The authors discuss the possibilities of increasing the reliability, stability and flexibility of computer devices with the use of homogeneous computer facilities. A homogeneous computer facility is defined as a regular structure consisting of a set of identical interconnected elements -- functional cells which are geometrically located precisely in space -- and capable of performing a given logical function after adjustment of the elements. A functional cell is defined in turn as an automaton which can be adjusted to perform some logic function. Problems of constructing homogeneous computer facilities are discussed as well as the structure of their functional cells and methods of controlling homogeneous facilities. The possibilities of microelectronic realization of homogeneous computer facilities on the basis of potential and radio pulse elements are evaluated. Examples are given of construc-

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USSR

GUBAREV, L. M. et al., IVUZ Radioelektronika, Vol 14, No 11, Nov 71,  
pp 1265-1281

tion of homogeneous computer facilities based on metal-oxide-semiconductor structures, bipolar transistors, and also the results of modeling such facilities on the basis of Soviet "TROMA-3" microcircuits. Facilities based on radio pulse elements have a power drain 1-2 orders less than that of facilities based on potential elements, and also realize high speeds reaching 500-700 MHz with respect to the cadence frequency. Twelve figures, bibliography of twenty-three titles.

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USSR

UDC 539.23+539.103

BARIT, I. YA., BALASHKO, YU. G., DUL'KOVA, L. S., and ZAVARZINA, V. P.

"Using Fine Organic Films in Nuclear Physics Experiments"

Moscow, Probory i Tekhnika Eksperimenta, No 1, Jan-Feb 71,  
pp 57-60

Abstract: The experimental work described in this paper was done in connection with measurements of deuteron polarization in  $^4\text{He}$  elastic dispersion in the energy range of 1 to 2 Mev. Such organic materials as nitrocellulose, polycaprolactam resin and fiber, and nylon, were subjected to tests for mechanical rigidity and imperviousness to the gas. The most satisfactory materials proved to be polycyromellitimide. Windows of this material were made to enclose helium at a pressure of 140 atmospheres and had to separate this high-pressure gas region from a space with a pressure of less than  $10^{-2}$  atmospheres. The article describes the preparation and testing of the windows and the process of measuring the film thicknesses. There were two such processes: one by passing alpha particles through the film, the other through the shift in maximum  $(p, \alpha \gamma)$  reaction  
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USSR

BARIT, I. YA., et al., Pribory i Tekhnika Eksperimenta, No 1,  
Jan-Feb 71, pp 57-60

of  $^{19}\text{F}$ . A table is given of the change in film thickness, as  
measured by both these methods, under proton bombardment.  
There is also a second table comparing the characteristics of  
films made of various organic substances.

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- 71 -

USSR

UDC: 536.221:537.312.5

DUL'NEV, G. N., ZARICHNYAK, Yu. P., Leningrad Institute of Precision  
Mechanics and Optics

"On Calculating the Thermal and Electrical Conductivity of Melts of Some  
Metals"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 4, Jul/Aug 72, pp  
771-777

Abstract: Formulas are presented for calculating the thermal and electrical conductivity of a binary melt based on a model which assumes that components which are practically insoluble in the solid state should retain independent regions filled with homogeneous atoms or molecules at temperatures above the melting point but considerably below the boiling point, i. e. there should be regions displaying short-range order even in a molten binary alloy comprised of such components. The proposed formulas give the coefficients of thermal and electrical conductivity in terms of the known coefficients of the components and their concentration. Comparison with experimental data shows certain discrepancies which can be attributed to measurement error, differences between the chemical com-

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USSR

DUL'NEV, G. N., ZARICHNYAK, Yu. F., *Teplofizika Vysokikh Temperatur*, Vol 10, No 4, Jul/Aug 72, pp 771-777

position of the components in the solid and molten states, or the presence of regions with short-range order having a solid-solution structure. On the whole, coincidence between theory and experiment is better for the proposed model than for models in the form of structures with closed inclusions.

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USSR

UDC: 536.2.01

AKAYEV, A. and DUL'NEV, G. N.

"Improving the Accuracy of the L. V. Kantorovich Method as Applied to Boundary Value Problems of Stationary Heat Conductivity"

Moscow, Izvestiya AN SSSR—Energetika i transport, No 1, 1972, pp 154-159

Abstract: Of the methods available for solving boundary value problems of thermal conductivity, that of Kantorovich is preferable for two-dimensional and three-dimensional problems. Earlier attempts to use the Kantorovich method in this application suffered from defects which the method proposed in this brief communication avoids. It is quite simple, and permits obtaining coordinate functions in the Kantorovich method which satisfy the differential equation resulting from that method and the boundary conditions. Application of the demonstrated procedure is explained via the example of the problem of finding the stationary temperature field of a finite, hollow, thermally conducting cylinder.

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USSR

UDC 621.377.622.322.4 621.377. 622.25  
181.48. 621.3.017.7 536.582

DUL'NEV, G. N., KAYDANOV, A. I., et al.

"Experimental Study of Thermal Modes of Accumulator Using Multiple-Aperture Ferrite Plates (MFP)"

Elektron. Tekhnika. Nauch. - Tekhn. Sb. Mikroelektronika [Electronic Technology. Scientific-Technical Collection. Microelectronics], No. 5 (26), 1970, pp 133-142. (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 5, 1971, Abstract No. 5B122 by TR).

Translation: An analysis is presented of the thermal mode of a diode assembly, and its permissible temperature is determined: it is established that the temperature field is practically even and that the reliability of operation of the diode is characterized, not by the permissible temperature of the surrounding medium, but rather by the temperature of the assembly itself. A description is presented of the experimental installation, along with the results of measurement of the temperature field of the accumulator in various operating modes. Recommendations are given for improvement of the thermal mode of the accumulator. 5 figs, 5 biblio refs.

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1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--CALCULATION OF THE THERMAL CONDUCTIVITY OF MULTICOMPONENT SOLUTIONS  
OF NORMAL AND ASSOCIATED LIQUIDS -U-  
AUTHOR-(03)-AGA, O.B., DULNEV, G.N., ZARICHNYAK, YU.P.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(3), 79-82  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--THERMAL CONDUCTIVITY, MULTICOMPONENT SYSTEM, SOLUTION  
PROPERTY, CALCULATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1126 STEP. NO--UR/0152/70/013/003/0079/0082  
CIRC ACCESSION NO--AP0124781  
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124781

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMAL COND. WAS CALCD. ACCORDING TO THE METHOD OF G. N. DUL'NEV AND YU. P. ZARICHNYAK (1966, 1967) AND CORRESPONDED TO THE EXPTL. DATA. THE METHOD WAS RECOMMENDED FOR CALCG. THE COND. OF SOLNS. OF NON REACTING LIQS., INCLUDING AQ. AND NONAQ. COMPONENTS. FACILITY: LENINGRAD. INST. TOCHNOI MEKH. OPT., LENINGRAD. USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--MECHANISM UNDERLYING THE EXTRACTION OF PALLADIUM WITH  
TRI,N,OCTYL,PHOSPHINE SULPHIDE -U-  
AUTHOR--(04)-BLEDNOV, B.P., PAVLENKO, A.F., KONOVALOVA, L.A., DULNEVA,  
V.YE.  
COUNTRY OF INFO--USSR  
SOURCE--IZVEST. V.U.Z., TSVETNAYA MET., 1970, (1), 60-64  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--PALLADIUM, CHLORIDE, EXTRACTIVE METALLURGY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FKAME--2000/0552 STEP NO--UR/0149/70/000/001/0060/0064  
CIRC ACCESSION NO--AP0124247  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124247

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXTRACTION OF PD FROM CHLORIDE SOLUTIONS BY MEANS OF TRI,N,OCTYL PHOSPHINE SULPHIDE, (C SUB6 H SUB17) SUB3 PS, WAS STUDIED, USING A GRAPHICAL METHOD. THE SOLVATION COEFF. THUS DETERMINED EQUALLED UNITY. WITH INCREASING CONCENTRATION OF CL PRIME NEGATIVE IONS IN THE ORIGINAL AQUEOUS SOLUTION THE EXTRACTION OF PD BY THE REAGENT DIMINISHED. ANALYSIS OF THESE RESULTS SUGGESTED THAT THE EXTRACTION OF PD BY TRI,N,OCTYL PHOSPHINE SULPHIDE TOOK PLACE BY WAY OF AN INTERNAL SUBSTITUTION MECHANISM WITH THE FORMATION OF THE MONOSULVATE IN THE ORGANIC PHASE.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--CALCULATION OF THE THERMAL CONDUCTIVITY OF BINARY GAS MIXTURES -U-  
AUTHOR--(03)-DULNEY, G.N., ZARICHNYAK, YU.P., MURATOVA, B.L.  
COUNTRY OF INFO--USSR D  
SOURCE--INZH.--FIZ. ZH. 1970, 18(5), 849-55  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--THERMAL CONDUCTIVITY, GAS STATE, CALCULATION  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/1131 STEP NO--UR/0170/70/013/005/0849/0855  
CIRC ACCESSION NO--AP0136551  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136551

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. CALCNS. OF THE THERMAL CONDOS.,  
LAMBDA, OF BINARY GASEOUS MIXTS. BASED ON THE EQUATION DEVELOPED BY D.,  
ET AL. (1968) ARE COMPARED WITH EXPTL. DATA. LAMBDA WAS MEASURED OVER  
THE WHOLE RANGE OF CONCNS. IN THE TEMP. INTERVAL 273-1100DEGREESK.  
VALUES OF LAMBDA CALCD. FOR MIXTS. CONTG. H WERE 10PERCENT LOWER THAN  
EMPIRICAL DATA, WHILE THE DEVIATION FOR SYSTEMS WITHOUT H DID NOT EXCEED  
PLUS OR MINUS 4PERCENT. FACILITY: INST. TOCHNOI MEKH. OPT.,  
LENINGRAD, USSR.

UNCLASSIFIED



1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--CATALYSTS FOR DEHYDROCYCLIZATION OF N PARAFFINS -U-

AUTHOR--(05)-KAZANSKIY, B.A., SLINKIN, A.A., POLININ, V.L., ROZENGART,  
M.I., DULOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,076

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

DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CYCLIZATION, ALKANE, HIGH TEMPERATURE HEAT TREATMENT, POLYMER,  
ALIPHATIC KETONE, CHROMIUM OXIDE, CATALYST, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/1745

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

CIRC ACCESSION NO--AA0136985

UNCLASSIFIED

\* 2/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136985

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRODUCT OF THERMAL TREATMENT (400-600DEGREES) OF A POLYMER BASED ON PURE METHYL BETA,CHLOROVINYL KETONE OR WITH AN ADDITIVE CONSISTING OF 0.1-5 WT. PERCENT CR SUB2 O SUB3 IS USED AS A CATALYST FOR DEHYDROCYCLIZATION OF N PARAFFINS. FACILITY: INSTITUT ORGANICHESKOY KHIMI I IM. N. D. ZELINSKOGO.

USSR

UDC 621.315.592

DULOV, A.A., SLINKIN, A.A.

"Organic Semiconductors. Polymers With Conjugate Bonds"

Organicheskiye poluprovodniki. Polimery s sopryazhennymi svyazyami (cf. English above), Moscow, "Nauka," 1970, 127 pp, ill., 58 k (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4320K)

Translation: Polymers with conjugate bonds pertain in particular to organic semiconductors. These compounds give rise to the greatest interest, both in theoretical and practical respects. The characteristics and regularities of behavior of organic semiconductors and the principles of their synthesis and examples of use are described, contemporary theoretical opinions on the nature of these substances are considered, as well as prospects for development -- in particular the possibility of obtaining superconductors maintaining superconductivity at normal temperatures. Summary.

1/1

1/2 070 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--THERMAL TRANSFORMATIONS OF SOME AROMATIC POLYAMIDE AND  
POLYAMINOAMIDO ACIDS -U-  
AUTHOR--(04)--SHAMRAYEV, G.M., DULOV, A.A., LIUGONKIY, B.I., BERLIN, A.A.  
COUNTRY OF INFO--USSR  
SOURCE--VVSOKOMUL. SOEDIN., SER. A 1970, 12(2), 401-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--PYROLYSIS, POLYMER, BENZIMIDAZOLE, IR SPECTRUM, EPR SPECTRUM,  
X RAY DIFFRACTION, ELECTRON MICROSCOPY, CONJUGATED POLYMER, THERMAL  
DEGRADATION, HIGH TEMPERATURE MATERIAL, HETEROCYCLIC NITROGEN COMPOUND,  
POLYNUCLEAR HYDROCARBON  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PRUXY REEL/FRAME--1992/0763 STEP NO--UR/0459/70/012/002/0401/0408  
CIRC ACCESSION NO--AP0111955  
UNCLASSIFIED

2/2 070

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0111955

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF PYROLYSIS TEMP. WAS STUDIED ON I (R IS A DIRECT BOND, D, CH SUB2, OR POLY(NAPHTHOYLENEBISBENZIMIDAZOLE)) OR II (R IS A DIRECT BOND OR O), THE PREPN. OF WHICH WAS REPORTED BY A. A. BERLIN, ET AL. (1966-8). IR SPECTROSCOPY, X RAY DIFFRACTION, ELECTRON MICROSCOPY, AND EPR SPECTROSCOPY WERE USED TO ESTABLISH THAT THE ORDERING OF I OR II PROCEEDS AT SMALLER THAN OR EQUAL TO 400DEGREES. THIS IS DUE TO FORMATION OF THE CONJUGATED HETEROCYCLIC POLYMERS, SUCH AS III OR IV. AT 500DEGREES AND SMALLER THAN OR EQUAL TO 800DEGREES, THE STRUCTURE ORDERING OF III AND IV DECREASES OWING TO THERMAL DEGRADATION. FACILITY: INST. KHIM. FIX., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr.

AP 0048826

Abstracting Service:  
CHEMICAL ABST.

D  
5-76

Ref. Code

UR0457

90938a Electrical conductivity of polyquinones and its dependence on the chemical structure of the polymer molecules. Dulov, A. A.; Gurov, A. A.; Liogon'kii, B. I.; Berlin, A. A. (Inst. Khim. Fiz., Moscow, USSR). Vysokomol. Soedin., Ser. A 1970, 12(1), 74-80 (Russ). The elec. cond. of poly(quinone oxide) (I), poly(quinonedioxin) (II), poly(quinonethioxin) (III), poly(quinoneamine) (IV), poly(quinonethiazine) (V), poly(quinonequinoxalinediimine) (VI), poly(quinonenaphthoquinone - 1,4-diimine) (VII), and poly(quinonephenothiazine) (VIII) was measured at 20-200°/10<sup>-5</sup> mm. Introduction of O bridges (and to a lesser extent NH groups) led to a marked decline in elec. cond. A transition to ladderlike polymers was accompanied by an increase in elec. cond.; the increase was most significant in VI vs. VIII. The activation energy increased and the sp. elec. cond. decreased on transition from the oxidized to the hydroquinone form. Ladderlike polymers contained a higher concn. of unpaired spins, suggesting that introduction of O bridges hindered the formation of paramagnetic centers considerably stronger than either -S- or NH-.

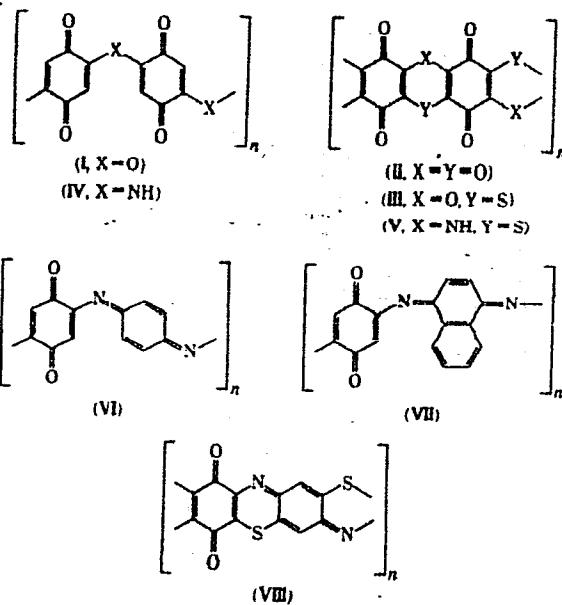
CKJR

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REEL/FRAME  
19800589

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AP0048826



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19800590

40

. USSR

UDC: 533.697

GOLUBKOV, A. G., DULOV, V. G., Institute of Theoretical and Applied Mechanics, Siberian Department of the Academy of Sciences of the USSR, Novosibirsk

"Interaction Between Supersonic Jets and Obstacles (Axisymmetric Problem)"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, No 13(208), Issue 3, Oct 73, pp 29-32

Abstract: An analytical solution is constructed on the basis of a linear approximation of the dependence of velocity on pressure, which enables determination of the position of the central jump in the jet, and reduces the problem of flow of an uncalculated jet against an obstacle to the problem of flow of a nonuniform stream around some body with attached compression shock. The analysis is done within the framework of a model of an inviscid and thermally nonconductive gas, assuming axial symmetry for the entire stream. The obstacle is located within the range of the initial gasdynamic section of the nonstandard jet, and its transverse dimensions are of the same order, or are great in comparison with the transverse dimensions of the oncoming jet. The proposed method can be used for a rough estimate of

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USSR

GOLUBKOV, A. G., DULOV, V. G., Izv. SO AN SSSR, Ser. Tekhn. Nauk, No 13(208), Issue 3, Oct 72, pp 29-32

the coordinates of the central compression shock. Such estimates can be used for "ranging" in computer calculations of the entire flow field when a jet strikes an obstacle.

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- 9 -

USSR

UDC 533.601.15

DULOV, V. G., RUDAKOV, A. I., Novosibirsk

"Supersonic Flows Propagated to Long Distances from a Body of Finite Volume"

Moscow, Zhurnal Prikladnoy mekhaniki i tekhnicheskoy fiziki, No 3, 1972, pp 77-83

Abstract: The equations of gas dynamics converted to independent pressure variables — two functions of current — are simplified under the assumption that the zone of disturbed motion is narrow and the variations of the flow parameters are small. In physical space, simplifications of this type are usually used to describe flows of the "short wave" type [A. A. Grib, et al., Zhurnal Prikladnoy mekhaniki i tekhnicheskoy fiziki, No 1, 1960]. The general solution of the approximate equations is constructed in the form convenient for studying the disturbed flow at sufficiently large distances from a streamlined body of three-dimensional configuration. Planes exist in each of which the motion can be described quasitwo-dimensionally by the relations for currents with axial symmetry. A study was made of the effect of the curvature of the current surface of the asymptotic state of the motion. The limiting transitions to the investigated cases of axisymmetric flows [G. B. Whitham, "The Flow Pattern of a Supersonic Projectile," Commun. Pure and Appl. Math., Vol 5, No 3, 1962] are checked.

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USSR

UDC 533.6.011

BELOLIPETSKIY, V. M., and DULOV, V. G., Institute of Theoretical and Applied Mechanics, Siberian Department, USSR Academy of Sciences, Novosibirsk

"A Thin Shock Layer in the Problem of Hypersonic Flow-Around"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, Issue 1, No 3, 1973, pp 40-44

Abstract: The flow of a hypersonic, nonviscous, non-heat-conducting gas around planar, thin, axisymmetric bodies is considered, with search for an approximate solution, on the assumption that the perturbed area is small.

Several variables (geometrical parameters based on body shape, curvature of line of flow, curvature of body surface, velocity vector, entropy, temperature, density, pressure, enthalpy, specific heat for constant pressure, etc.) are combined as the elements of approximation formulas.

Calculations based on these formulas, with comparison of results from other approximation methods and with numerical solutions, show that the position of the shock wave can be determined reasonably accurately with this method; the value of the coefficient of pressure, however, is rather too low.

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USSR

BELOLIPETSKIY, V. M., and DULOV, V. G., Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, Issue 1, No 3, 1973, pp 40-44

Two of the formulas derived are readily extendable to the three-dimensional case by translation to a semigeodetic coordinate system, and assumption of nearness of the lines of flow lines on the body to the geodetic value.

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Acc. Nr: **AP0038118**

Ref. Code: UR 0326

• PRIMARY SOURCE: *Fiziologiya Rasteniy*, 1970, Vol 17, Nr 1,  
pp **169-173**

**DISTRIBUTION OF CHLORINE AND IODINE IN PLANTS**

Portyanko, V. F.; Kostina, A. Ye.; Dulova, M. K.;

Portyanko, V. V.

P. D. Osipenko Pedagogical Institute, Berdyansk

The distribution of chlorine and iodine among organs of elaeagnus, grape, quince, poppy, sunflower and other plants was studied. Chlorine is found to be located primarily in the cortex, mature and old leaves and peduncle. Lowest amounts of chlorine are observed in young leaves, seeds and wood and other organs. On the contrary iodine is mainly concentrated in young organs such as the stamens, pistils, young leaves and seeds. In many organs an antagonism can be observed between the distribution of iodine and chlorine. Chlorine is distributed in leaves of various tiers in the basipetal direction whereas iodine is distributed in the acropetal direction.

REEL/FRAME

**19731171**

1/2 007 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--ELECTRON DIFFRACTION STUDY OF THE STRUCTURE OF MOLECULES OF  
ORGANOGERMANIUM COMPOUNDS WITH EMPIRICAL FORMULA C SUB2 H SUB2 GEX SUB2  
AUTHOR--VILKOV, L.V., MASTRYUKOV, V.S., SHCHERBIK, L.K., DULOVA, V.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1) 3-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRON DIFFRACTION ANALYSIS, MOLECULAR STRUCTURE,  
ORGANOGERMANIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0312

STEP NO--UR/0192/70/011/001/0003/0007

CIRC ACCESSION NO--AP0103967

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103967

ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. ELECTRON DIFFRACTION STUDY OF IC  
SUB2 H SUB2 GEX SUB2) SUBN (I), WHERE X EQUALS ME, CL, AND I, IN VAPOR  
PHASE, SHOWED THAT WHEN X EQUALS ME, N EQUALS 1 AND WHEN X EQUALS CL, N  
EQUALS 2. FOR X EQUALS IODINE TWO SETS OF DIFFRACTION DATA WERE  
OBTAINED, DEPENDING ON THE VAPORIZATION TEMP. OF THE SAMPLE,  
CORRESPONDING TO ELECTRON DIFFRACTION CURVES CALCD. FOR N EQUALS 1 AND N  
EQUALS 2, RESP. A 3 MEMBERED RING STRUCTURE II IS FOUND FOR I, N EQUALS  
1 AND A 6 MEMBERED RING STRUCTURE III IS FOUND FOR I, N EQUALS 2. THE  
PARAMETERS DETD. BY ASSUMING RING MODELS II OR III ARE GIVEN. THE  
CONTROVERSY CONCERNING THE STRUCTURE OF I IS NOT FULLY SOLVED AND NEEDS  
FURTHER INVESTIGATION.

UNCLASSIFIED

USSR

UDC 521.122 + 546.732'131 + 547.496.3

ALEKSENKO, V. A., DULOVA, V. I., and KREMLEV, M. M., Dnepropetrovsk  
Chemical-Technological Institute imeni F. E. Dzerzhinskiy

"Complex Formation of  $\text{CoCl}_2$  With N-Aryl-N'-diphenoxythiophosphonothioureas"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 10, Oct 73, pp 2211-2216

Abstract: A series of novel N-aryl-N'-diphenoxythiophosphonothioureas has been synthesized and their ionization constants have been determined. The complex formation of these phosphonothioureas with  $\text{CoCl}_2$  in acetone has been investigated spectrophotometrically. It has been shown that the graduated instability constants of these complexes are correlated with Hammett's constants. Some of the complexes formed have been isolated; their structure and properties have been studied, the IR spectra were reported.

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USSR

UDC 541.8+532.77

MOLCHANOVA, N. R., ~~DUJOVA, V. I.~~, ZHURAVLEVA, L. P., and PAVLIN, A. T.,  
Dnepropetrovsk Chemical-Technological Institute imeni F. E. Dzerzhinskiy  
and the Institute of Organic Chemistry, Ukrainian Academy of Sciences

"The Strength of Phosphonic Acids in Certain Nonaqueous Solvents"

Leningrad, Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, pp 2631-2634

Abstract: In inert solvents phosphonic acids are dimerized, or may yield more complex aggregates; in solvents capable of forming hydrogen bonds, there is decomposition of these associates with subsequent dissociation of the acid molecules.

The present research was aimed at determining the strength of phosphonic acids and  $\beta$ -naphthylphosphonic acid in alcohols, ketones and ether. The bufferless indicator method was used, with a photocolormeter, at  $25 \pm 3^\circ$ .

Constants  $\sigma_\phi$  were determined for 12 substituents, from the dissociation of the acids. In agreement with the Hammett equation the indexes of the dissociation constants of phosphonic acids correlate linearly with the constants  $\sigma_\phi$ .

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1/2 006 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--SOLVENT EFFECT ON THE COMPLEXING PROPERTIES OF LIGANDS OF COBALTII  
WITH HETEROCYCLIC AMINES -U-  
AUTHOR-(02)-LOGACHEV, V.A., DULOVA, V.I.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1033-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--SOLVENT ACTION, COBALT COMPLEX, PYRIDINE, QUINOLINE, ACRIDINE,  
ACETONITRILE, ETHYLENE GLYCOL, CYCLOHEXANONE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/1167 STEP NO--UR/0078/70/015/004/1033/1036  
CIRC ACCESSION NO--AP0128589  
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128589

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEXING OF COX SUB2 (X EQUALS CL OR BR) WITH PYRIDINE, QUINOLINE, AND ACRIDINE (L PRIME) WAS STUDIED IN CYCLOHEXANONE (I), MEQN, ETHYLENE CHLOROHYDRIN (II), AND ETHYLENE GLYCOL (III). STABILITY OF THE COMPLEXES DECREASED WITH THE SOLVENT IN THE ORDER: I LARGER THAN MEQN LARGER THAN II APPROXIMATELY EQUAL TO III. INSTABILITY OF COMPLEXES IN III IS EXPLAINED BY THE ACIDITY OF THIS SOLVENT AND STRONG INTERACTION WITH THE AMINES. OCTAHEDRAL COMPLEXES OF QUINOLINE AND ACRIDINE WERE VERY UNSTABLE DUE TO STERIC HINDRANCES OF THESE LIGANDS. DESPITE THE SIMILAR PERMITTIVITY VALUES OF III AND MEQN, COX SUB2 FORMS OCTAHEDRAL COMPLEXES IN III AND TETRAHEDRAL COMPLEXES IN MEQN. APPARENTLY, THE PERMITTIVITY OF THESE COMPLEXES DEPENDS NOT ONLY ON THE CONFIGURATION BUT ALSO ON THE CHEM. NATURE OF THE SOLVENTS.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--STRENGTH OF PHOSPHORIC ACIDS IN NONAQUEOUS SOLVENTS -U-  
AUTHOR--(02)-MOLCHANOVA, N.R., DULOVA, V.I.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(6), 1542-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--PHOSPHORIC ACID, HYDROGEN ION CONCENTRATION, NONAQUEOUS  
SOLUTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605012/F04 STEP NO--UR/0076/70/044/006/1542/1544  
CIRC ACCESSION NO--AP0140332  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140332

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRENGTH OF H SUB3 PO SUB4 AND OF (RO) SUB2 PO SUB2 H (R EQUALS PH, CYCLOHEXYL, ISO-C SUB5 H SUB11, C SUB8 H SUB17, AND SU) WERE REPORTED IN TERMS OF PKA IN BUOH, ISO-BUOH, TERT BUOH, CYCLOHEXANOL, CYCLOHEXANONE, AND ACME, AND AS PK OF CONVERSION TO ION PAIRS IN PHOME, 4:1 PHOME,BU SUB2 O, BUOAC, AND (BUO) SUB3 PO. THE ACIDS WERE STRONGEST IN ISO-BUOH AND WEAKEST IN PHOME. OF THE ACIDS STUDIED, THE STRONGEST WAS H SUB3 PO SUB4 AND THE WEAKEST.

FACILITY: DNEPROPETROVSK. KHIM.-TEKHNOL. IM. DZERZHINSKOGO, DNEPROPETROVSK, USSR.

UNCLASSIFIED

Acc. Nr:

AP0034230

Abstracting Service:

CHEMICAL ABST. 4 70

Ref. Code:

UR 0078

D

71247h Reaction of cobalt(II) chloride with aromatic amines in nonaqueous solutions. Zhurba, T. V.; Dulova, V. I. (Dnepropetrovsk. Khim.-Tekhnol. Inst. im. Dzerzhinskogo, Dnepropetrovsk, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 269-71 (Russ). Equil. complexing of  $\text{CoCl}_2$  with  $\text{PhNH}_2$  and its derivs. (*o*-toluidine,  $\text{Me}_2\text{NPh}$ ,  $\text{Et}_2\text{NPh}$ , *o*-anisidine, *p*-anisidine, *p*-phenetidine, and 2,6-xylydine) was studied spectrophotometrically. Instability consts. of  $\text{CoCl}_2$ -aromatic amine complexes in  $\text{Me}_2\text{CO}$ , cyclohexanone (I), and BuOH are tabulated. Stability of the complexes in  $\text{Me}_2\text{CO}$  and I is approx. the same and it is lower in BuOH. This is attributed to higher basicity of BuOH than that of  $\text{Me}_2\text{CO}$  or I. In general, exptl. results show that interaction of Co(II) with aromatic amines is not limited to the formation of donor-acceptor bonds HMJR

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REEL/FAME

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1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--THE STUDY OF MYELOFIBROSIS -U-  
AUTHOR--DULTSIN, M.S. D  
COUNTRY OF INFO--USSR  
SOURCE--PROBL GEMATOL PERELIV KROVI 15(1), 9-17. 1970  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--MUSCULAR DISORDER, LEUKEMIA, DIAGNOSTIC MEDICINE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1996/0250 STEP NO--UR/9080/70/015/001/0009/0017  
CIRC ACCESSION NO--AP0117502  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117502

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IDIOPATHIC MYELOFIBROSIS IS  
CONSIDERED 1 OF THE VARIANTS OF NEOPLASTIC DISEASES OF THE BLOOD SYSTEM.  
FROM THIS ASPECT THE FOLLOWING CONCEPTION IS WELL GROUNDED: APART FROM  
MYELO AND LYMPHOPROLIFERATIVE PROCESSES DETERMINING THE NATURE OF  
CLASSIC FORMS OF THESE DISEASES, THERE EXISTS A FIBROPROLIFERATIVE  
PROCESS, TO WHICH IDIOPATHIC MYELOFIBROSIS MAY BE LOGICALLY REFERRED.  
AS TO SECONDARY MYELOFIBROSIS, ITS DEVELOPMENT SHOULD, IN ALL  
PROBABILITY, BE REGARDED FROM THE ASPECT OF A REACTIVE PROCESS. SOME  
CLINICAL ASPECTS OF IDIOPATHIC MYELOFIBROSIS AND ITS TREATMENT ARE  
DISCUSSED. FACILITY: CENT. INST. HEMATOL. BLOOD TRANSFUS., MIN.  
HEALTH USSR, MOSCOW, USSR.

UNCLASSIFIED



1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--VITAMIN B SUB12 CONTENT IN THE HUMAN MILK -U-  
AUTHOR--(05)-DUMA, KH., VASKOV, B., PETKOV, G., PESHEVA, V., PETKOV, K.  
COUNTRY OF INFO--USSR D  
SOURCE--VOPROSY PITANIYA, 1970, NR 2, PP 54-57  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--VITAMIN B COMPLEX, ESCHERICHIA COLI, FOOD CHEMISTRY  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1985/1640 STEP NO--UR/0244/70/000/002/0054/0057  
CIRC ACCESSION NO--AP0101695  
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101695

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MILK OF 22 PARTURIENT WOMEN WAS ANALYZED STARTING FROM THE FIRST TILL THE SEVENTH LACTATION DAY. THE MILK WAS TAKEN EVERY DAY AT 9 A. M. N. V. BAKUNIN'S MICROBIOLOGICAL METHOD, AS MODIFIED BY LOGANOVSKY WAS USED TO DETERMINE THE VITAMIN B SUB12 CONTENT WITH THE AID OF ESCHERIHIA COLI, 113-3. AT THE TIME OF INVESTIGATION THE VITAMIN B SUB12 CONCENTRATION LEVEL TENDED TO DECLINE FROM 0.515 MUG. THE FIRST DOWN TO 0.252 MUG ON THE SEVENTH DAY. INDIVIDUAL FLUCTUATIONS OF THE VITAMIN CONCENTRATION WERE RECORDED. IT WAS LOW IN THE MILK OF PARTURIENT WOMEN WHOSE NUTRITION HAPPENED TO BE PROTEIN DEFICIENT AT THE TIME OF GESTATION.

UNCLASSIFIED

DUMACHEV, A.A.

Sgt. Capt.  
Leningrad  
Division

ECONOMIC AND SOCIAL DEVELOPMENT IN THE USSR  
Article by A. Dumachev, Leningrad Division, USSR  
CPSC Committee on the Interpretation of the USSR, and the  
City of Tallin, November 1972, p. 21

The nature of production and the economic level;  
their interaction, working conditions, and so on. On the  
other hand, the worker collective and individual workers  
influence the level and state of technology and technology,  
the organization of labor, and the economy of the enterprise.  
And this influence and the economy of the enterprise  
and skills training and education of the people from  
as they take a more conscientious and interested attitude  
in the work. That is, the more conscientiously the social  
problems of the collective are resolved, the higher produc-  
tion efficiency will be and, in its turn, the more efficient  
the worker collective will have to further resolve social  
problems.

However, until recently these relationships and  
not been thoroughly analyzed, the social processes and  
worker collectives and not been studied in the necessary  
manner. There has been no scientific generalization, and  
they found only partial reflection in the collective and  
interests of workers with the administration and during the  
course of increasing scientific organization and during the  
raising production sophistication, and setting of labor.  
That planning gap between development of production and  
development of worker collectives led to the appearance  
of negative social phenomena and substantial production losses.

Life itself demanded that all aspects of the activity  
of the production collective be analyzed, generalized, and  
taken into account in planning production. The first such  
attempt was made, as we know, at the start of 1966 at the

- 24 -

TPAS 50051  
27 MAR 73

1/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--RESONANCE CHARGE EXCHANGE OF IONS IN ATOMS WITH UNFILLED ELECTRON  
SHELLS -U-  
AUTHOR--(02)-DUMAN, YE.L., SMIRNOV, B.M.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. TEKH. FIZ. 1970, 40(1), 91-6  
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CHARGE EXCHANGE, ELECTRON SHELL STRUCTURE, CHEMICAL VALENCE,  
ION INTERACTION, ELECTRON RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1989/1087

STEP NO--UR/0057/70/040/001/0091/0096

CIRC ACCESSION NO--AP0107596

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107596

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXCHANGE INTERACTION OF IONS WITH ATOMS OF AN ELEMENT WAS CALCD. (BY MEANS OF A 1 ELECTRON APPROXN.), GREAT DISTANCES BETWEEN THEM BEING ASSUMED, FOR THE CASE OF ELECTRON VALENCE SHELLS OF BOTH THE ATOM AND ION BEING UNFILLED. THE EXCHANGE INTERACTION COULD BE REGARDED AS A TRANSFER OF EITHER THE VALENCE ELECTRON OR VALENCE VACANCY; THE RESULT WAS INDEPENDENT OF IT. THE CROSS SECTION OF THE ION RESONANCE CHARGE EXCHANGE WAS CALCD. BY MEANS OF THE RESULT OBTAINED.

UNCLASSIFIED

USSR



UDC 621.382.333.34

DUMANEVICH, A. N., SMOLYANSKIY, R. Ye., CHELNOKOV, V. Ye.

"Some Characteristics of the Temperature Change of the Static Switching Current of Thyristors"

V sb. Fiz. elektronno-dyrochn. perekhodov i poluprovodn. priborov (Zh. fiz. i tekhn. poluprovodnikov) (Physics of Electron-Hole Junctions and Semiconductor Devices -- Collection of Works [Journal of Physics and Technology of Semiconductors]), Leningrad, "Nauka," pp 120-124 (from RZh--Elektronika i yeye primeneniye, No 3, Mar 70, Abstract No 3B258)

Translation: The operation of a thyristor with shunted emitter p-n junctions is considered when switching takes place at the minimum temperature in the interval investigated, with voltage values equal or close to voltage breakdown of the collector p-n junction. It is shown that the dependencies of the effective transfer constant of the current and the switching current, on temperature characteristic extremes. The results obtained, as a counterbalance to known literature data, indicate the existence of a correlation between the switching current and temperature and clear up several experimental facts. 2 ill. 6 ref. V. S.

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- 130 -

USSR

UDC [537.226+537.311.33]:[537+535]

PONOMARENKO, V. N., KONONOV, A. N., SOROKIN, E. I., ROMANOV, M. YU.,  
REYFMAN, M. B.

"Determining Certain Parameters of n-Type Silicon Carbide Crystals"

Sb. nauch. tr. Mosk. inzh.-fiz. in-t. Vech. otb. (Collection of Scientific  
Works of Moscow Engineering Physics Institute. Evening Division), Chelyabinsk,  
1971, pp 23-36 (from RZh Fizika, No 12, Dec 71, Abstract No 12Yel303)

Translation: It was observed from measurements of the Hall effect and electrical conductivity that the electron concentration in the crystals studied varied at room temperature from  $3 \cdot 10^{16}$  to  $5 \cdot 10^{17} \text{ cm}^{-3}$  and the mobility  $\mu$  varied from 270 to  $170 \text{ cm}^2/\text{sec} \cdot \text{v}$ . Scattering by thermal oscillations of the lattice makes the basic contribution to the mobility. The concentration of carriers  $n$ , as determined on the basis of the value of  $\mu$ , differs from the corresponding values obtained on the basis of the Hall temperature curves by not more than 20-25%. An explicit dependence of  $n$  and  $\mu$  on the dislocation density was not observed. Resume.

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DUMANSKIY, I. A.

INVESTIGATION OF SUPRAMOLECULAR STRUCTURES OF WATER-SOLUBLE POLYMERS AND THEIR ADSORPTION ACTIVITY

Article by K. E. Lyashuk and I. A. Dumanskiy, Kiev, Kiev, Monika, Russian, No 5, 1971, Izd-vo Naukova Dumka, pp 95-100

JPRS 559872  
15 May 72

One of the methods for decreasing turbulent friction drag is the introduction of insignificant quantities of polymers (high-molecular polyacrylamide, carboxymethyl cellulose, polyethylene oxide, and others) into the boundary layer zone. Some authors [8, 10, 13, 15, 16] attempt to attribute the effect of a decrease in frictional drag to the viscoelastic properties of solutions of polymers. In this case the mechanism is as follows: under the influence of front shear stresses the macromolecules, being deformed, store elastic energy and transform it into the potential energy of laminar expansion and deformation.

The opinion also prevails that the extinction of small-scale turbulence at the expense of the viscoelastic characteristics of the solution can occur only at an essentially supramolecular level, that is, with the presence of supramolecular formations in the boundary layer [1-3].

Since there is still no definite point of view concerning the mechanism of the influence of addition of polymers on the structure of a turbulent boundary layer, it was desirable to investigate in what region of concentrations the macromolecules are capable of structure formation in aqueous solutions of polymers used as anti-turbulent admixtures.

For detecting associates in aqueous solutions of polymers it is common to employ the same methods as in the colloidal chemistry of surface-active substances with a colloid-chemical structure [7].



USSR

DUMAREVSKIY, YU. D., DUL'DIYER, C. N., and PETRUSEVICH, V. A.

"An Optical-Electronic Adder"

Otkrytiya Izobretmeniya Promyshlennye Obraztsy Tovarnyye Znaki, No 35, 1972,  
Patent No 359651

Translation: 1. An optical-electronic adder for optical signals, containing a light-controlled source of a voltage of variable amplitude, differing in that in order to simplify the adder and increase reliability and speed, it contains a device for linear scanning of the light beam which is connected to the source of variable-amplitude voltage and beneath which are three photosensors, the second of which is partially covered by the third photosensor connected parallel to the first.

2. An adder conforming to Para 1, differing in that the source of variable-amplitude voltage consists of a film with a photoelectric effect.

1/1

USSR

UDC 681.325.65

DUMAREVSKIY, YU. D., DJL'DIYER, V. N., and PETRUSEVICH, V. A.

"Light Beam Control Device"

USSR Authors' Certificate No 309339, Cl. G 02 f 3/00; H 01 j 3/26, filed 6 Jan 70, published 8 Sep 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B152P)

Translation: The device can be used for data processing in computer input and output units, in optoelectronic circuits, as well as for the construction of devices to convert electric signals to light signals. Light beam scanners are known which are made in the form of a capacitor, between whose electrodes is enclosed a layer of a substance which changes transparency under the action of an electric field: for example, a substance possessing the Franz-Keldysh effect. However, the operation of these devices requires external dc and ac voltage sources with an amplitude of  $\sim 500$  v. Despite the small size of the device itself, this results in a large system as a whole (mainly because of the size of the power sources). In addition, such devices cannot provide direct conversion of light amplitude to light beam coordinates, which process is especially important in purely optical data processing devices. To provide the capability of variation in light beam coordinates induced by the action

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USSR

DUMAREVSKIY, YU. D., et al., USSR Authors' Certificate No 309339

of a light signal, as well as to eliminate external power sources, reduce the size, and provide high reliability, it is suggested that one of the capacitor electrodes be made of a material possessing the photovoltaic effect and that it be connected to the other electrode through the photovoltage source, which is coupled with the element controlling the photovoltage amplitude. This element can be a light source of variable intensity or a negative-resistance element connected to a control source, which is illuminated in this case by a light of constant intensity.

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- 37 -

AA 0043569- DUMAREVSKIY Yu D 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

243095 PHOTOELECTRIC IMAGE CONVERTER TUBE is built up  
from a matrix of photoresistors with a photo-  
sensitive layer between two systems of conductive bars  
at right angles to each other. The horizontal system  
is connected through a shift register to a voltage  
source and through another register to earth. The  
vertical system is passed to a register and an output  
resistor, from which a video signal is picked up, to  
earth. The earthed register of the horizontal system  
carries away any parasitic signal produced by non-  
illuminated elements.

26.2.68 as 1220586/18-24. YU.D.DUMAREVSKIY & V.F.  
ZOLOTAREV (16.9.69) Bul 16/5.5.69. Class 21g, 21a<sup>1</sup>.  
Int.Cl. H 01 1, H 04n.

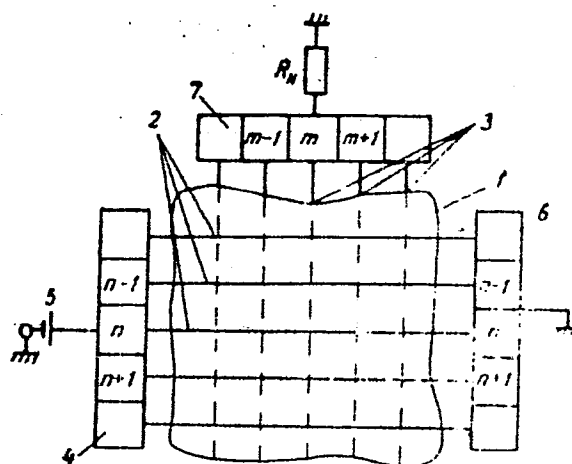
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19762029

AA0043569



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**19762030**

9

USSR

UDC 621.371.029.55 0

VSEKHOSVIATSKAYA, I. S., GLADYSHEVA, M. V., GORSHEKOVA, E. Z.,  
DUMBRAVA, Z. F., YEROFEYEV, N. M., ZOLOTAREV, A. Ye., KIYANOVSKIY,  
M. P., MAL'SHAKOV, V. N., NOVIKOVA, L. N., PEZHEMSKAYA, M. D.,  
PODDEL'SKIY, N. P., and RUDYKA, L. V.

"Some Results of Investigations Into Tilted Short-Pulse Sounding  
in Ranges up to 400 km Long"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.  
Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio  
Waves; Report Theses; Section 1--collection of works) "Nauka,"  
1972, pp 347-348 (from RZh--Radiotekhnika, No 10, 1972, Abstract  
No 10A333)

Translation: Results are given of the selection of optimal operat-  
ing frequencies for ranges of varying extent, the identification  
of propaganda modes, and the determination of the spectral char-  
acteristics of the fluctuations in signal level. A. L.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--ISOTOPIC RELATIONS FOR PARTICLES OF THE SAME ISOMULTIPLY -U-  
AUTHOR-(02)-DUMBRAYS, D.V., POOGODORETSKIY, M.I.  
COUNTRY OF INFO--USSR  
SOURCE--YAD. FIZ. 1970, 11(1), 223-228  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY  
TOPIC TAGS--ISOTOPE, ELEMENTARY PARTICLE, SCATTERING, CROSS SECTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1980/0382 STEP NO--UR/0367/70/011/001/0223/0228  
CIRC ACCESSION NO--AP0048654  
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0048654

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONCEPT OF "GEOMETRICAL TESTING" OF ISOTOPIC INVARIANCE IS EXTENDED TO THE CASE WHEN THE ISOTOPIC SPIN OF A SYSTEM OF 2 PARTICLES WHICH BELONG TO THE SAME ISOTOPIC MULTIPLY HAS NO DEFINITE PARITY. IN SUCH A CASE THE CROSS SECTIONS FOR THE ANGLES  $\theta$  AND  $\pi - \theta$  CONTAIN THE SAME INTERFERENCE TERMS WHICH ARE CANCELLED DURING SUBTRACTION OR ADDN. THIS IS THE BASIS FOR THE DERIVATION OF A SERIES OF NEW ISOTOPIC RELATIONS FOR WEAK, ELECTROMAGNETIC, AND STRONG PROCESSES. RELATIONS ARE OBTAINED FOR THE CROSS SECTIONS OR DECAY PROBABILITIES WITH CONFIGURATIONS RELATED BY INTERCHANGE OF MOMENTA OF THE PARTICLES. ADDNL. RELATIONS ARISE IN CASES WHEN SOME ISOTOPIC AMPLITUDES ARE SMALL AS COMPARED WITH OTHERS. ALSO THE I. M. SHMUSHKEVICH METHOD (1955; G. PINSKI, ET AL., 1965) IS APPLIED WITH SOME MODIFICATIONS. THE RESULTS MAY PROVE USEFUL FOR TESTING THE SELECTION RULES, AS WELL AS FOR AN INVESTIGATION OF THE REACTIONS FOR WHICH IT IS DIFFICULT TO MEASURE DIRECTLY THE CROSS SECTIONS. FACILITY: OB'EDIN. INST. YAD. ISSLED., DUBNA, USSR.

UNCLASSIFIED



USSR

DUMChENKO, Yu. V.

"An Apparatus for Processing Requests and Monitoring Sequence"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrazesy, Tovarnyye Znaki,  
No 26, 4 Sep 72, p 116

Translation: (11) 350005 (21) 1444078/18-24 (22) 25.05.70 (51) G 06f 15/46 (53)  
681.323 (72)

(54) An apparatus for processing requests and monitoring sequence, containing a memory unit, recording and counting circular registers, a pulse shaper connected with a coder, initial "AND" circuits with their primary inputs from the coder and their secondary inputs taken from the outputs of the recording counter, "OR" circuits connected to the inputs of a decoder, secondary "AND" circuits with primary inputs connected to the outputs of the memory cells and secondary inputs from the outputs of the counting register, and with their outputs connected to the corresponding inputs of "OR" circuits, is distinguished by the fact that the speed of the apparatus is improved by including a service termination sensor, a unit for synchronizing the circular registers, tertiary "AND" circuits, inhibiting circuits, and a unit for monitoring the presence of information, whose inputs are connected to the outputs of memory cells, and whose outputs are connected to the primary

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USSR

DUMChENKO, Yu. V., Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrazesy, Tovarnyye Znaki, No. 26, 4 Sep 72, p 116

inputs of the inhibition circuit and the tertiary "AND" circuits and to the inputs of the synchronization unit, whose primary and secondary outputs are connected to the inputs of the appropriate registers, with the secondary inputs of the tertiary "AND" circuits connected to the outputs of the recording register and the secondary inputs of the inhibition circuit, while the outputs of the tertiary "AND" circuits are connected through the "OR" circuits to the counting input of the recording register, and the counting input of the counting register is connected to the output of the service termination sensor and to the tertiary inputs of the secondary "AND" circuits.

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USSR

UDC 669.187.26

BUSHMELEV, V. M., TYURIN, YE. I., DUMCHEV, YA. P., KATAYEV, V. M., VOLKOV, S. YE., PUPYNINA, S. M., ~~SHARAPOV~~, A. A., BAGLAY, V. M., MEDOVAR, B. I., LATASH, YU. V., Krasnyy Oktyabr' Plant, Central Scientific Research Institute of Ferrous Metallurgy and Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences Ukrainian SSR

"Production of 4-Ton Ingots in a Bifilar Electroslag Remelting Furnace"

Moscow, Stal', No 3, Mar 70, pp 236-238

Abstract: The article describes a bifilar electroslag remelting scheme developed at the Institute of Electric Welding imeni Ye. O. Paton, which provides for the melting in one crystallizer of two electrodes, isolated from each other, which are attached to one electrode holder and connected to the ends of the secondary winding of a single-phase transformer with the same power as in a single-electrode furnace. In order to obtain rectangular 640X460 ingots weighing 4 tons, one of the electroslag remelting furnaces of the Krasnyy Oktyabr' Plant, designed for

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USSR

BUSHMELEV, V. M., et al, Stal', No 3, Mar 70, pp 236-238

the production of 2-ton ingots according to the single-electrode scheme and equipped with a single-phase 1000-kva transformer, was remodeled for melting according to the bifilar scheme. Only the mechanical part of the furnace underwent alteration. Slag systems used for the melting included  $\text{CaF}_2\text{-Al}_2\text{O}_3$ ,  $\text{CaF}_2\text{-CaF}_2\text{-CaO-Al}_2\text{O}_3$ , and  $\text{CaF}_2\text{-CaO-Al}_2\text{O}_3\text{-MgO}$ . It was found that the production of metal of satisfactory quality in the bifilar furnace requires the same degree of submersion of the electrodes in the slag bath, as well as keeping the electrode spacing unchanged during the melting. This was accomplished with the use of simple devices. The bifilar scheme approximately doubles furnace productivity and reduces electric energy consumption by 25-29 percent. Data are presented on the quality of 4-ton ingots of ball-bearing steel ShKh 15, structural steel 40KhNMA and stainless sheet steels 10Kh12NVMFA (EI962) and Kh23N18 obtained on the bifilar furnace.

2/2

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USSR

UDC: 621.384.326.22

DUMLER, G. Ya., Candidate of Sciences, and KONYASIN, B. A.

"Stabilizing the Sensitivity of Pulsed Optical-Electronic Instruments"

Leningrad, Optikomekhanicheskaya promyshlennost', No 4, 1972, pp 10-12

Abstract: To improve the stability of the signal sensitivity of optical-electronic devices, the authors propose the insertion of an automatic gain control system into the electronic tract to vary the transfer factor of the tract in accordance with the change in signal sensitivity of the receiver device. Two methods of effecting this arrangement are considered: the first, by pulse keying; the second, by continuous control. The defect of the first is that it does not take into account changes in the sensitivity in the time the field of view is observed; the second type eliminates this defect but requires continuous calibration of the receiver. A schematic diagram of the continuous control type for optical-electronic devices with pulse modulation is shown and its operation discussed.

1/1

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Pulse Technique

USSR

UDC 621.391.883.2

DUMLER, G. Ya., Candidate of Sciences, and KOLYASIN, B. A.

"Efficiency of a Combined System of Pulse Signal Detection in Noise"

Leningrad, Optikomekhanicheskaya promyshlennost', No. 6, 1971, pp 15-18

Abstract: The method and results of an experimental investigation into equipment for the combined detection of pulse signals in noise are given. A block diagram of the combined system is presented and the functions of the various blocks explained. The purpose of this investigation is to obtain the detection characteristics and threshold specifications of the system, and to compare its sensitivity with that of other detection arrangements. As defined here, the threshold specification is the signal/noise ratio at the input to the first threshold stage, at a fixed correct detection probability and an average period of false alarms without a signal, as a function of the number of pulses in the packet. A description is given of the method for plotting the detection characteristic. The authors conclude that the algorithm on which the system is based can be used in systems in which a binary accumulator, applied with advantage in the present system, cannot be included.

Biochemistry

USSR

UDC 577.153+577.150.5+612.843

DUMLER, I. L., and ETINGOF, R. N., Institute of the Physiology and Biochemistry of Evolution imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

"A Protein Inhibitor of Phosphodiesterase"

Moscow, Doklady Akademii Nauk SSSR, Vol 213, No 5, 1973, pp 1197-1200

Abstract: A protein inhibitor of phosphodiesterase (PDE; 3',5'-phosphohydrolase) was isolated from the tissue of the outer segments of the bovine retina. This tissue also contained a protein activator of PDE which was similar to that contained in other tissues and corresponded in its properties to that isolated in the present study from rat brain tissue. The inhibitor had a molecular weight of approximately 38,000 and the activator of approximately 15,000. When amounts of the inhibitor and activator that separately exerted equal but opposite effects on PDE were added together to PDE, the inhibitor effect was sharply increased. This indicated that the activator was a subunit of a single protein complex which as a whole exerts an inhibiting action. The assumption to that effect was supported by data obtained in the electrophoresis of the inhibitor fraction. Some results indicate that the cyclic nucleotide 3',5'-AMP participates in

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USSR

DUMLER, I. L., and ETINGOF, R. N., Doklady Akademii Nauk SSSR, Vol 213,  
No 5, 1973, pp 1197-1200

the first stages of the photoreceptor effect. From this standpoint, the  
presence in the retina of an inhibitor of PDE, an enzyme that brings about  
the decomposition of 3',5'-AMP, is of definite interest.

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1/2 068 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--AGING OF A FLAME RESISTANT GLASS REINFORCED PLASTIC PNFA -U-  
AUTHOR--(03)-VORUBYEV, V.A., ANDRIANOV, R.A., DUMOV, S.N.  
COUNTRY OF INFO--USSR  
SOURCE--STROIT. MATER. 1970, (3), 35-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--FIRE RESISTANT MATERIAL, GLASS FIBER, POLYESTER RESIN,  
REINFORCED PLASTIC, SEASONAL VARIATION, WEATHERING, PLASTIC MECHANICAL  
PROPERTY, TENSILE STRENGTH, POLYMER BINDER, RADIATION EFFECT/(U)PNFA  
GLASS REINFORCED PLASTIC, (U)FOSFACRYLAT POLYMER BINDER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/1242 STEP NO--UR/0228/70/000/003/0035/0036  
CIRC ACCESSION NO--AP0128658  
UNCLASSIFIED

2/2 068

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128658

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE AGING OF FLAME RESISTANT PNFA PLASTIC, CONTG. FOSFACRYLAT AS 1 OF THE BINDERS (U.S.S.R. 220,494), IN BOILING WATER, OPEN AIR, OR AT 100DEGREES UNDER ARTIFICIAL IRRADN. WAS APPROX. THE SAME AS THAT OF A PLASTIC (GLASS FIBER POLYESTER LAMINATE) CONTG. THE SAME COMPONENTS EXCEPT FOR FOSFACRYLAT. THE PROPERTIES (BENDING STRENGTH, TENSILE STRENGTH AT BREAK, IMPACT STRENGTH, WATER ABSORPTION, FLAME RESISTANCE) OF PNFA SHOWED CONSIDERABLE SEASONAL VARIATIONS, BUT LITTLE OVERALL CHANGE AFTER 3 YEARS' STORAGE IN THE OPEN.

UNCLASSIFIED

Acc. Nr.: **AP0029572**

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 1, pp 76-81

EFFECT OF AMPHOTERICIN B ON ELECTROCARDIOGRAM SHOWING IN DOGS

A. M. Dumong, M. V. Mushkin

Leningrad Institute for Antibiotics, Leningrad Post Graduate Medical Institute

Showing of electrocardiograms in 4 dogs (2 male and 2 female) treated with intravenous water soluble amphotericin B in sodium desoxycholate in doses of 500 to 1000 Units/kg was studied. Variability in the individual sensitivity of the animals to the antibiotic was observed. Pronounced changes in the electrocardiograms in the form of sinusoid arrhythmia with rare systoles, higher P pick and displacement of PQ interval down from the isoline, slower atrioventricular conductivity, sinoauricular block, presence of "gigantic" positive or negative T picks and high thin Q pick were recorded. The changes in the electrocardiograms must be indicative of electrolyte impairment combination with dystrophic changes in the myocardium.

1/1 REEL/FAME

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1/2 026 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--ON DIFFERENTIAL DIAGNOSIS OF THE PAGET, SCHROETTER DISEASE -U-  
AUTHOR--(03)--DUMPE, E.P., GRINBERG, A.A., PRIKUPETS, V.L.  
COUNTRY OF INFO--USSR  
SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 5, PP  
46-51  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--THROMBOSIS, VEIN, DIAGNOSTIC METHODS, TUMOR, CANCER,  
METASTASIS, RHEUMATIC DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1017

STEP NO--UR/0599/70/104/005/0046/0051

CIRC ACCESSION NO--AP0109168

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109168

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INCIDENCES OF ACUTE THROMBOSES OF SUBCLAVICULAR AND AXILLARY VEINS RANGED FROM 10 TO 14 PER CENT TO A TOTAL NUMBER OF PATIENTS WITH THROMBOSIS OF CAVAL VEINS AND THEIR DUCTS. THE CAUSE OF OCCLUSION OF THE UPPER EXTREMITIES VEINS IS VARIED. THE CLINIC OF ACUTE THROMBOSIS OF SUBCLAVICULAR AND AXILLARY VEINS IS OBSERVED IN THE PAGET SCHROETTER DISEASE, AFFECTIONS RESULTING IN OUTSIDE COMPRESSION OF THE SUBCLAVICULAR AND AXILLARY VEINS; DISEASES NOT RELATED WITH IMPAIRMENT OF THE VENOUS BLOOD OUTFLOW FROM THE UPPER EXTREMITY. THE DIAGNOSIS OF THE PAGET SCHROETTER DISEASE IS BASED ON A CHARACTERISTIC CLINICAL PICTURE AND DATA OF ACCESSORY METHODS OF INVESTIGATION, AMONG WHICH PHLEBOGRAPHY AND PHLEBOTONOMY ARE OF SPECIAL IMPORTANCE. IN DIFFERENTIAL DIAGNOSIS IT IS NECESSARY TO EXCLUDE MALIGNANT TUMORS AND METASTASES COMPRESSING VEINS, INFLAMMATORY INFILTRATIONS IN THE SUBCLAVICULAR AND AXILLARY REGIONS, HEMATOMAS, SCARRING PROCESSES, THE PECULIAR FORMS OF NONSPECIFIC POLYARTHRITIS.

FACILITY: FAKUL'TETSKOY KHIRURGICHESKOY KLINIKI IM. S. I. SPASOKUKOTSKOGO AND GOSPITAL'NOY KHIRURGICHESKOY KLINIKI 2-GO MUSKOVSKOGO ORDENA LENINA MEDITSINSKOGO INSTITUTA IM. N. I. PIROGOVA.

UNCLASSIFIED

AA0044237

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243096 IMAGE CONVERTER TUBE has between a collector and a screen a concentric arrangement of channel multipliers coaxially with the cylindrical surface of the shell. Their ends are cut to a chamfer of 45° with the centre line of the tube where they face the screen disc which has an anisotropic conductivity. The beneficial effect is that the electrons from the electron gun are prevented from describing a straight-through transit across the multiplier.

8.8.67 as 1177867/26-25. L.M. DUN et al. (16.9.69)

Bul 16/5.5.69. Class 21g. Int.Cl. H 01 j.

AUTHORS: Dun, L. M., Oshchepkov, P. K., Karadzhali, R. M.,  
Rozin, N. S.

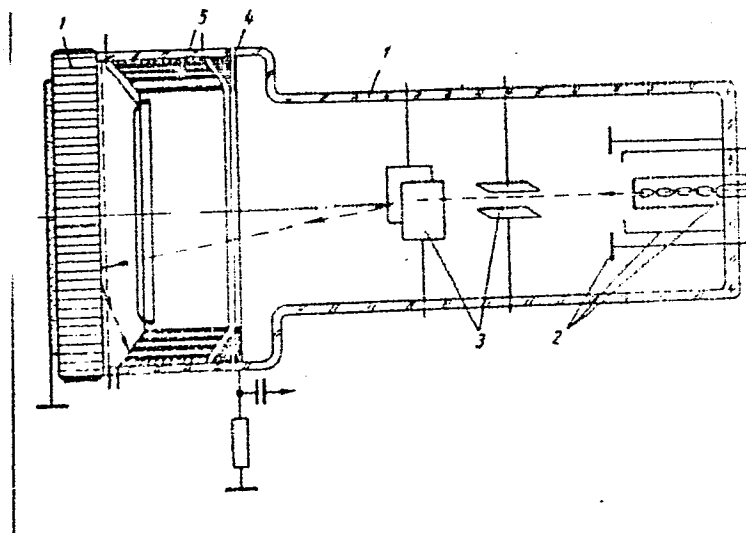
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AA0044237



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19770740

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USSR

UDC 621.791.76.011:621.7.044.2:621.791.03:

539.4

TRUTNEV, V. V., Candidate of Technical Sciences, YAKUSHIN, A. F., LUKAYEV, A.A.,  
and MISHIN, N. I., Engineers, and GODIN, V. M., Candidate of Technical Sciences

"Comparative Evaluation of Joint Quality From Explosive Welding of Aluminum  
With Titanium, Steel and Nickel"

Moscow, Svarochnoye Proizvodstvo, No 7, Jul 73, pp 19-21

Abstract: Results of a comparative evaluation of the weldability of Al with Ti, steel, and Ni by explosion welding under identical conditions is presented. Plates of AMg6 alloy measuring 6x 65 x 130 mm were clad with hot rolled A31 aluminum and plates of VT6 titanium alloy, Kh18Ni10T steel, and electrolytic nickel measuring 5 x 60 x 120 mm. From shear tests it was found that Al + Ti had the best weldability. Shear strength also increased when the distance between the metal being welded was increased from 3 to 5 to 8 mm with the highest test values noted for the distance of 5 mm. The shear strength of Al + Ni joints was better than that of Al + Kh18Ni10T steel. It was noted that the coefficient of impact energy utilization is one of the important parameters in the explosive welding process that affects the weldability of dissimilar materials. 3 figures, 2 tables, 6 bibliographic references.

1/1

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Composite Materials

1

USSR

UDC 669.715

KOLPASHNIKOV, A. I., MANUYLOV, V. F., TRUTNEV, V. V., ~~ANTONOV~~ DUNAYEV, A. A. and SHIRYAYEV, YE. V.

"Reinforced Material Based on Aluminum and Weldable Aluminum Alloys"

Moscow, Tsvetnyye metally, No 2, Feb 72, pp 56-57

Abstract: This study concerns the mechanical properties of composites, the structure of transition zones, and the metal flow in rolling prefabricated blanks designed for service under high work loads in assemblies and structures. Composite sheet metal blanks based on AMg6 alloy reinforced with Kh18N9T and EP322 steel wire fibers show a tensile strength of 53.6 and 69.2 kg/mm<sup>2</sup> and a bend angle of 55.7 and 36.5° at a specific weight of 3.46 g/cm<sup>3</sup>. Reinforcement with EP322 steel fibers produces composites with a strength exceeding that of Kh18N9T steel-wire reinforced composites by 29.1%. The amount of wire reinforcement is 15% in both materials. Tables in the original article show the relationship between the percentage of fibers and the strength of the composite material. (3 illustrations, 4 tables, 3 bibliographic references).

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1/2 039 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--INTERFERENCE KILLING FEATURE OF AN AUTOCORRELATION RECEIVER IN  
CORRELATED AND UNCORRELATED INTERFERENCE -U-  
AUTHOR--(03)-VOKONIN, V.I., DUNAYEV, A.S., MUKHAMEDYAROV, R.D.

COUNTRY OF INFO--USSR

SOURCE--LNINGRAD, OPTIKO MEKHANICHESKAYA PROMYSHLENNOST', NO 1, 1970, PP  
20-24  
DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., NAVIGATION

TOPIC TAGS--INTERFERENCE REDUCTION, AUTOCORRELATION FUNCTION, SIGNAL  
PROCESSING, DATA TRANSMISSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1346

STEP NO--UR/0237/70/000/001/0020/0024

CIRC ACCESSION NO--AP0123304

UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123304

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPARATIVE EVALUATION WAS MADE OF THE INTERFERENCE KILLING FEATURE OF TWO METHODS FOR PROCESSING ELECTRONIC SIGNAL COMING FROM A PHOTO DATA UNIT IN AN ADDITIVE MIXTURE OF CORRELATED AND UNCORRELATED INTERFERENCE.

UNCLASSIFIED

USSR

UDC 528.711.11.039.6

ZIMAN, YA. L., KRASIKOV, V. A., DUNAYEV, B. S., and SIL'VA-BEGA, A. A.

"Photogrammetric Calibration of Photographic Systems by Means of a Progressively Movable Theodolite"

Moscow, Geodeziya i Kartografiya, No 5, May 1973, pp 54-60

Abstract: A procedure is described, by means of which compensation is provided for distortion introduced into the photographic image by the passage of rays through the porthole in the sealed bays of camera carriers conducting aerial and space photography. In this procedure, conducted when the cameras are being mounted in the carriers, the photographic system is calibrated with respect to the corresponding porthole by measuring, with a progressively movable theodolite, the directions to the points of a standardized grid situated in the focal plane of the calibrated camera. Measurements are conducted through the porthole of the carrier and the camera lens. The theodolite is placed in front of the lens of the calibrated camera, and by means of a special support is moved progressively from station to station, in parallel to the focal plane of the camera. A geometric diagram of the solution of the problem is presented, as well as practical data of calibration of the stellar camera of the "Salyut" orbital station. 2 tables. 4 figures. 5 references.

1/1

Magnesium

3

USSR

UDC 669.721.046.4(088.8)

REZNIKOV, I. L., POLYAKOV, Yu. A., KHASIN, L. B., PONYATENKO, V. V.,  
KOROTKOV, Yu. A., RUDAKOV, V. A., and DUNAYEV, D. V.

"Method of Dehydration of Magnesium Chloride"

USSR Author's Certificate No 272569, Filed 30/04/68, Published 27/08/70  
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract  
No 2 G181 P)

Translation: A method is suggested for dehydration of  $MgCl_2$  by fusion. To increase the productivity of the apparatus and improve the sanitary conditions, the initial salt is pressed into a strip under a pressure of over 600 kg/cm<sup>2</sup>, ground, and classified, then the fraction of ground salt over 1 mm in size is melted. The salt melt thus produced is agitated by air.

1/1

USSR

UDC 538.245

KALININ, V. M., MARGARYAN, A. V. and ~~DUNAYEV, E. N.~~ Ural State University  
imeni A. M. Gor'kiy

"Magnetization and Magnetostriction of Iron-Nickel Alloys in Strong Magnetic Fields"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 6, Jun 72, pp 1175-1181

Abstract: An experimental investigation was made of mathematical dependences describing the behavior of magnetization and magnetostriction of ferro-nickel alloys in strong magnetic fields. The anisotropy constant  $K_1$  and the magnetostriction constants  $\lambda_{100}$  and  $\lambda_{111}$  were determined for Fe-Ni alloys with body-centered cubic lattice and for Invar alloys. The constants of magnetic and magnetostrictive susceptibility of the para-process were specified for alloys with 10-60 % Ni. The magnetization saturation is characterized in the differential form

$$k = \frac{A}{H^2} + \frac{B}{H^3} + \frac{C}{H^4} + \dots + k_p,$$

where  $k$ =magnetic susceptibility,  $k_p$ =susceptibility of the para-process, and A, B, C are coefficients characterizing different magnetization mechanisms in a magnetic field. An anomaly of the concentration dependence of the coefficient  $1/2$

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KALININ, V. M., et al., Fizika Metallov i Metallovedeniye, Vol 33, No 6, Jun 72, pp 1175-1181

A was disclosed. It is supposed that the nature of the member  $A/H^2$ , according to the rule of the magnetization approach to saturation, is not related to the presence of nonuniform stresses, but to the presence of a heterogeneous magnetic structure dependent on the composite interaction. Two figures, one table, eleven formulas, seventeen bibliographic references.

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Superalloys

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USSR

UDC 539.67

VLADIMIROVA, N. N., GLOTOVA, L. S., GORFINKEL', V. B., DUNAYEV, F. N.,  
LOBANOVA, N. B., and YAKOVLEV, G. P.

"Effect of Magnetic Structure on Internal Friction of Nickel and Ferronickel Alloys"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 187-191

Abstract: The effect of tensile stresses and heat treatment on the ferromagnetic internal friction of nickel, permalloy-66, and permalloy-50 is studied.

It is shown that the effect of external static tensile stresses on internal friction and vibration period depends on both the magnitude and sign of saturation magnetostriction of a given material. Hysteresis of the logarithmic decrement  $\delta$  and of vibration period  $T$  was experimentally revealed from the magnitude of tensile stresses.

The effect of heat treatment for 66%Fe, 80%Ni alloys was determined. The magnetic structure obtained as a result of heat treatment affects the internal friction. 4 figures, 3 references.

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USSR

UDC 539.67

DUNAYEV, F. N., LOBANOVA, N. B., MAN'KO, L. M., and YAKOVLEV, G. P.

"Kinetics of Local Directional Order-Disorder Transformation in Permalloy-66"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 175-178

Abstract: The effect of holding time at various temperatures on the logarithmic decrement of damping and period of low-frequency torsional vibrations of Fe-66% Ni alloy samples, preliminarily annealed and cooled at different rates in the presence and absence of a magnetic field is investigated.

It is shown that curves of temperature dependence  $\delta(t)$  and  $T(t)$  reflect the kinetics of local directional order-disorder transformation. Relaxation times of this transformation depend weakly or not at all on the initial pattern of pair distribution of identical atoms. The activation energy of local directional order-disorder transformation is close to or coincides with the activation energy of the opposite process, i.e., the thermomagnetic treatment effect. 2 figures, 6 references.

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USSR

DUMAYEV, F. N., Ural State University Inst: A. M. Gorkiy

"Energy losses in the remagnetization of ferromagnets. II"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 3, 1975, 311-314, 10 refs.

Abstract: Part I demonstrated that in addition to the generally accepted mechanism of low-frequency energy losses by macro- and micro-vortex currents, these losses can be produced by magnetostriction deformation in the acyclic structure as it moves. These losses per cycle per unit of remagnetized volume are determined by the friction constant  $\beta$  and the rate of movement of the walls. The present work analyzes other mechanisms of losses, as well as general problems of the static and dynamic losses involved in remagnetization of ferromagnets.

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USSR

UDC 669.162.267.4:669.046.521

KUKHTIN, T. I., and DUNAYEV, N. YE.

"Effectiveness of Injection of Slag-Forming and Desulfurizing Solid Reagents to the Hearth of a Blast Furnace"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 28-40

Translation: The decrease in the yield of slag related to the development of enrichment of ores increases the requirement for stability of the slag mode and worsens the desulfuration conditions in a blast furnace. Injection of fluxing and desulfurizing reagents directly to the hearth of the furnace allows these problems to be solved and also decreases the basicity of the sinter and thereby increases its quality.

Calculations based on the melting conditions of the Karagandinskiy Metallurgical Plant have shown that when fluxes are introduced to the hearth of the furnace, a savings of coke can be achieved (up to 4%) with more rapid performance of the process. 3 figures; 4 tables; 30 biblio. refs.

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USSR

UDC 612.6.03:612.844.1-06:612.014.481

DUNAYEV, P. V., and AGARKOV, V. A., Chair of Histology and Embryology,  
~~Tyumen~~ Medical Institute

"Growth and Transformation of Epithelium Implants from the Crystalline Lens  
After Whole-Body X-Ray Irradiation of the Donor With a Sublethal Dose"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 71, No 3,  
Mar 71, pp 91-94

Abstract: Crystalline lens epithelium of mature white rats was implanted by the Lazarenko method 24 hours after whole-body x-ray irradiation of donors with 800 r. In a parallel control series, the donors were not irradiated. Histological and chemical analyses were performed on the implants on each successive day for three months. The control implants developed in the regular manner until they began to decompose on the 18th day after transplantation. The irradiated implants went through an initial period of depression and destructive changes, evidently as a result of the direct effects of the x-rays on the nuclear and cytoplasmatic components of the cells. Histologically, this was manifested by impaired glycogen synthesis. Growth and differentiation of the surviving cells began on the 9th day, reached maximum 1/2

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USSR

DUNAYEV, P. V., and AGARKOV, V. A., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 71, No 3, Mar 71, pp 91-94

intensity on the 12-15th days, and continued throughout the period of observation. However, differentiation was poor, and the microorgan structures which developed were atypical. The equatorial and preequatorial zones of the crystalline lens epithelium appeared most susceptible to the injurious effects of x-rays.

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1/2 022

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--EFFECT OF ADRENOCORTICOTROPIN ON THE SYNTHESIS OF COENZYME A AND ON  
THE ACETYLATED CAPACITY IN RATS -U-  
AUTHOR--(02)-KRYLOV, YU.F, DUNAYEV, V.V.

D

COUNTRY OF INFO--USSR

SOURCE--FARMAKOL. TOKSIKOL (MOSCOW) 1970, 33(1), 82-4

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ACTH, RAT, SULFA DRUG, LIVER, CALCIUM COMPOUND, ADRENAL GLAND,  
THYMUS GLAND, VITAMIN B COMPLEX, VITAMIN DEFICIENCY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1180

STEP NO--UR/0390/70/033/001/0082/0084

CIRC ACCESSION NO--AP0115199

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115199

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACTH (30 UNITS-KG, S.C.) INCREASED THE ACETYLATION OF SULFA PYRIDAZINE BY RAT LIVER AND INCREASED THE SYNTHESIS OF COA. COMBINED ADMINISTRATION OF CA PANTOTHENATE (30 MG-KG, S.C.) PREVENTED THE CHANGES IN THE WT. OF THE ADRENALS, HYPOPHYSIS, AND THYMUS BY ACTH, SUGGESTING THAT LONG TERM ADMINISTRATION OF THE HORMONE INDUCES PANTOTHENATE DEFICIENCY. FACILITY: RYAZAN. MED. INST. IM. PAVLOVA, RYAZAN USSR.

UNCLASSIFIED

1/2 031

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--EXPERIMENTAL STUDY OF THE WIDTH OF THE NEAR ANODE LAYER IN A  
KNUDSEN SYSTEM FOR A THERMIONIC ENERGY CONVERTER -U-

AUTHOR--(OSI)-BABANIN, V.I., BARABASH, M.B., GAIDO, G.K., DUNAYEV, YU.A.,  
KRAVINSKIY, YU.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. TEKH. FIZ. 1970, 40(4), 833-8

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRODE PROPERTY, THERMIONIC ENERGY CONVERSION, VOLT AMPERE  
CHARACTERISTIC, BARIUM, CESIUM, TRANSVERSE MAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/1196

STEP NO--UR/0057/70/040/004/0333/0833

CIRC ACCESSION NO--AP0124850

UNCLASSIFIED



2/2 031

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124850

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WIDTH OF THE NEAR ANODE LAYER IN A THERMIONIC ENERGY CONVERTER FILLED WITH BA,CS IN A TRANSVERSE MAGNETIC FIELD WAS INVESTIGATED EXPTL. VOLT AMPERE (V,A) CHARACTERISTICS ARE SHOWN FOR CATHODE, BA, AND CS TEMPS. OF 1893, 936, AND 373DEGREESK, RESP. A SMALL CURRENT INCREASE IN THE SATN. REGION IS EXPLAINED BY WIDENING OF THE NEAR ANODE LAYER. THE VALUES OF THIS WIDTH CALCD. BY V. I. KUZNETSOV, ET AL. (1970) WERE CONFIRMED EXPTL. BY ANAL. OF THE V,A CHARACTERISTICS. THE COMPENSATION DEGREE MAY BE DETD. IF THE WIDENING OF THE NEAR ANODE LAYER IS TAKEN INTO ACCOUNT.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--EXPERIMENTAL STUDY OF THE EFFECT OF A TRANSVERSE MAGNETIC FIELD ON  
THE VOLT AMPERE CHARACTERISTICS OF THE THERMIONIC CONVERTER IN A KNUDSEN  
AUTHOR--(05)-BADANIN, V.I., BARABASH, M.B., GAYDO, G.K., DUNAYEV, YU.A.,  
KRAVINSKIY, YU.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. TEKH. FIZ. 1970, 40(3), 561-6.

DATE PUBLISHED-----70

SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE), PHYSICS

TOPIC TAGS--VOLT AMPERE CHARACTERISTIC, CATHODE, ANODE, BARIUM, CESIUM,  
MAGNETIC FIELD EFFECT, THERMIONIC ENERGY CONVERSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/2259

STEP NO--UR/0057/70/040/003/0561/0566

GIRC ACCESSION NO--AP0125837

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--27NOV70


CIRC ACCESSION NO--AP0125837

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OVER A WIDE RANGE OF CATHODE TEMPS. AND OF BA AND BA PLUS CS PRESSURES, THE INCREASE IN THE FIELD STRENGTH RESULTS IN A DECREASE IN THE SATN. CURRENT FOR THE CONVERTER. THIS IS IN GOOD QUAL. AGREEMENT WITH THE THEORETICAL CONCLUSIONS. IN A TRANSVERSE MAGNETIC FIELD THE CURRENT DOES NOT ACHIEVE SATN. WITH AN INCREASE IN THE POS. POTENTIAL ON THE ANODE BUT CONTINUES TO INCREASE, THE EFFECT BEING MORE PRONOUNCED FOR LOW CURRENT VALUES. THE INCREASE IN THE CURRENT MAY BE DUE TO A NO. OF REASONS, ONE OF WHICH IS THE WIDENING OF THE PREANODE ZONE.

UNCLASSIFIED

USSR

UDC 621.373:623.543

BEREZKIN, A. N.,  DUNAYEV, YU. A., KAMACH, YU. E., KOZLOVSKIY, YE. N., and OVCHINNIKOV, V. M., Physical Engineering Institute imeni A. F. Ioffe

"Use of Monopulse Optical Laser for Photographing Models During Ballistic Investigations"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, Vol 15, No 1, Jan-Feb 70, pp 21-25

Translation: The article investigates the possibilities of application of optical lasers for the illumination of moving objects in shadow photography. A diagram of the experimental apparatus is presented and a description is made of the optical laser, telescopic system which forms the illumination beam for the moving object, and a system of synchronization of illumination pulse with the moment of arrival of the investigated object at a given point in the field of photograph taking. The presented photographs clearly show the boundries of flying solids, shock waves, and discontinuities in solid's track. The article shows the possibility of application of a monopulse ruby laser as a source of illumination in the photography of moving objects during aeroballistic investigations.

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