

2/2 026

CIRC ACCESSION NO--AP0106910
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT. THE ADHESIVE STRENGTH OF EPOXY RESIN ED-5 (I) (MODIFIED WITH DEG-1 AND HARDENED WITH POLYETHYLENEPOLYAMINE), STAINLESS STEEL (II) PAIRS WAS STUDIED AS A FUNCTION OF THE HARDENING TEMP. (T) AND WITH REF. TO INTERNAL STRESSES ARISING DUE TO THE FORMATION OF ADHESIVE BONDS. THE ADHESIVE STRENGTH WAS PROPORTIONAL TO T, REACHING A MAX. OF 360 KG-CM PRIME2, WHEN THE INTERNAL STRESSES BROUGHT ABOUT PRESSURE PERPENDICULAR TO THE I-II INTERFACE. A PLOT OF ADHESIVE STRENGTH VS. TEMP. FOR THE I "DISSOLVED" IN II SYSTEM REVEALED THAT THE ADHESIVE STRENGTH DECLINED, REACHING A MIN. AT 100DEGREES AND THEN SUDDENLY INCREASED. A POSSIBLE EXPLANATION FOR THE ANOMALOUS BEHAVIOR WAS GIVEN. MEASUREMENTS OF INTERNAL STRESSES INDICATED THAT EFFECTIVE ADHESION MARKEDLY INCREASED WITH T AT LARGER THAN 100-200DEGREES, PRESUMABLY DUE TO THE FORMATION OF STRONGER ADHESIVE, AND POSSIBLY, CHEM. BONDS. AT LOWER TEMPS. THE ADHESION WAS INDEPENDENT OF T. THE COMPONENT OF THE ADHESIVE STRENGTH RELATED TO FRICTION I.E., THE NORMAL PRESSURE DUE TO INTERNAL STRESSES IN THE POLYMER AND THE STATIC FRICTION COEFF. OF THE I-II PAIR WERE DETD.

UNCLASSIFIED

USSR

UDC: 621.396.96:681.32

SIMONGAUZ, V. I.

"Digital Signal Processing to Obtain an Estimate of the Phase of the Modulating Function When the Carrier Frequency is Unknown"

Tr. Mosk. aviats. in-ta (Works of the Moscow Aviation Institute), 1970, vyp. 201, pp 61-87 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G20)

Translation: In this paper, an earlier work by the author ("Radiotekhnika i elektronika", 1969, No 5) is extended to the case where the carrier frequency is unknown. The theory of digital processing of FM and AM signals is outlined. An algorithm is constructed for digital processing of readings of the phase of the carrier oscillation relative to a reference voltage. Four illustrations, two tables, bibliography of three titles. See also RZh-Kibernetika, 1969, 11G249. N. S.

1/1

- 122 -

USSR

UDC: None

MERMANISHVILI, L. L., TIGILAURO, G. A., SIMONISHVILI, T. G.,
KVANTALIANI, G. A., and KOVSHOV, L. F.

"Device for Recording Information on Electrochemical Paper"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obrastysy, tovarnyye znaki,
No 4, 1973, p 117, No 364003

Translation: The item contains number registers connected with decoders whose outputs are joined to shapers connected through AND circuits with the inputs of the recording unit, which is connected with scaling and synchronization units, distinguished in that, for the purpose of providing printed information in the form of combinations of points in two colors, it contains an automatic marking unit connected with the inputs of a nulling device for the number registers and with controlling inputs from each of the decoders.

The device of paragraph 1 above is distinguished in that the count input of the channel counter in the automatic marking unit is connected, through one of the delay lines, to one of the AND and OR circuits respectively, the outputs of which are connected through a decoder to the second inputs of the AND circuits, whose outputs are connected with the other inputs of the OR circuits.

1/1

ACCESSION NR: AP4036810

S/0286/64/000/009/0035/0035

AUTHOR: Tavadze, F. N.; Simonishvili, T. V.

TITLE: Heat-resistant steel ANG-15. Class 18, No. 161180

SOURCE: Byul. izobr. i tvar. znakov, no. 9, 1964, 35

TOPIC TAGS: heat resistant steel, ANG-15 steel, alloy steel

ABSTRACT: Heat-resistant steel ANG-15, containing chromium, nickel, manganese, niobium, vanadium, silicon, is distinguished by increased mechanical properties. Components are contained in the following percentages: carbon, 0.4-0.6; chromium, 14-16; nickel, 13-15; manganese, 8-10; niobium, 0.3-0.5; vanadium, 0.4-0.6; silicon, up to 0.5; tungsten, 4.5-5.5; aluminum, 0.4-0.6; sulphur, up to 0.03; nitrogen, up to 0.15; phosphorus, up to 0.03.

ASSOCIATION: none

SUBMITTED: 02Nov62

ENCL: 00

SUB CODE: MM

NO REF SOV: 000

OTHER: 000

Card 1/1

USSR

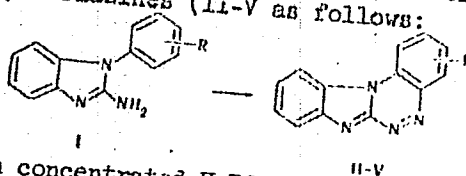
UDC 547.785.5.556.3

KOLODYAZHNAYA, S. N., SIMONOV, A. M., ZHELTIKOVA, N. N., and POZHARSKIY, A. F.,
Rostov State University, Rostov-on-Don

"Intramolecular Nitrogen Bonding in a Series of 1-Substituted 2-Aminobenzimidazoles"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, 5, May 1973, pp 714-715

Abstract: Compounds of the type 1-aryl-2-aminobenzimidazol (I) form, in addition to the intermolecular bonds, intramolecular nitrogen bonding which occurs in the o-position of N-aryl radical and leads to the formation of dibenz [a,g] imidazo [2,1-C][1,2,4,] triazines (II-V as follows:



The ring closure occurs smoothly in concentrated H_3PO_4 ; the presence of H_2SO_4 results in the formation of 5- and 6-azobenzimidazols. A methyl group in the m-position on the N-aryl radical facilitates the ring closure. Elemental analysis, IR data, physical constants, and molecular weights are given.

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USSR

UDC 547.785.5'821.07

POZHARSKIY, A. F., KUZ'MENKO, V. V., KOLODYAZHNYI, YU. V., SIMONOV, A. M.,
Rostov State University, Rostov-na-Donu

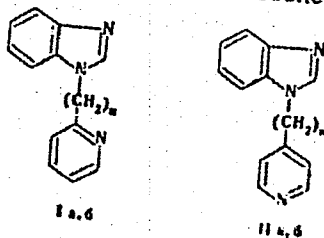
"Relative Reactivity of the Pyridine and Benzimidazole Systems in the
Chichibabin Reaction"

Riga, Khimiya Geterotsiklicheskikh Soedineniy, No 9, 1972, pp 1252-1263

Abstract: Some 1- α (or γ)-pyridiyl and 1- α (or γ)-pyridylethyl-
benzimidazoles were synthesized and their reactivity to methyl iodide and
sodamide was studied. The results are discussed from the point of view
of basicity, the magnitude of the dipole moments, the mutual effect of
heterorings and the distribution of electron density in them, calculated
or estimated from the relative position of the chemical shifts in the para-
magnetic resonance spectra. The benzimidazole system enters into the Chichi-
babin reaction appreciably more easily than the pyridine system. On the
basis of the paramagnetic resonance spectral data for bases and cations of
pyridine and benzimidazole it is proposed that this phenomenon arises from
the high degree of polarizability of the C=N bond of the benzimidazole by
comparison with the C=N bond of the pyridine on their coordination with
NaNH₂. The protonation point of compounds I and II
1/2

USSR

POZHARSKIY, A. F., et al., *Khimiya Geterotsiklicheskikh Soyedineniy*, No 9, 1972, pp 1252-1263



the nature of the interaction of the imidazole and pyridine rings in N-pyridylbenzimidazoles and the reaction of N-pyridylbenzimidazoles to sodium amide are discussed. The procedures for synthesizing a number of the indicated compounds, the method of measuring the ionization constants, taking the paramagnetic resonance spectra, performing the quantummechanical calculations and determining the dipole moments are described.

2/2

USSR

UDC 547.735.5'786.07

TSUPAK, Ye. B., CHUB, N. K., SIMONOV, A. M., and MIRCSEHNICEENKO, N. M.,
Rostov State University, Rostov-on-Don

"Studies in the Field of Benzimidazole Derivatives. XXVIII. Synthesis of Some
3-/2'-Benzimidazolyl/isoxazoles"

Riga, Khimiya Geterotsiklicheskih Soyedineniy, No 6, Jun 72, pp 812-815

Abstract: By the chlorination of the oximes of 1-methyl-2-formylbenzimidazole and of its 5-methyl and 5-nitro derivatives, the hydrochlorides of the corresponding 2-benzimidazolylmethylhydroxamoyl chlorides were synthesized. Nitration of the oximes gave benzimidazolylmethylnitrolic acids. The products of the two conversions reacted with acetyl- or benzoylacetone in the presence of bases, forming 1', 5'-substituted 3-/2-benzimidazolyl/-4-acyl-5-methylisoxazoles.

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- 35 -

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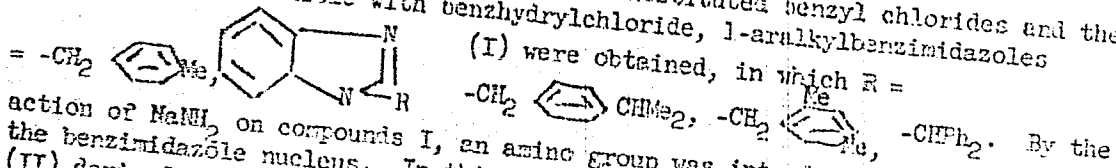
UDC 547.781.5.785.5

FILIPSKIKH, T. P., POZHARSKIY, A. F., KOROLEVA, V. N., SIMONOV, A. M., and ZVEZDIHA, E. A., Rostov State University, Rostov-on-Don

"Derivatives of Imidazole Containing Potentially Labile Groups at the N₁ Atom. VI. Some 2-Amino Derivatives of 1-Alkyl- and 1-Methoxymethylbenzimidazoles"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 72, pp 809-811

Abstract: By reacting benzimidazole with substituted benzyl chlorides and the Ag salt of benzimidazole with benzhydrylchloride, 1-alkylbenzimidazoles



By the action of NaNH_2 on compounds I, an azino group was introduced in position 2 of the benzimidazole nucleus. In this manner, the 1-alkyl-2-aminobenzimidazoles (II) derived from I were synthesized. By reacting the Na salt of 2-aminobenzimidazole with methoxymethyl chloride, 1-methoxymethyl-2-aminobenzimidazole (III) was prepared. Compounds II-III were required for the generation of highly reactive 2-aminobenzimidazole anions by the reductive cleavage of the N-R bond with Na in liquid NH_3 .

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Polymers and Polymerization

USSR

UDC 678.649.9

VASILENOK, YU. I., KONOPLEV, B. A., LAGUNOVA, V. N., SIMONOV, A. N.,
POSHARSKIY, A. F., AVEZDINA, E. A., and ADREYCHIKOV, YU. P.

"Novel Antistatic Agents for Plastic"

Moscow, Plasticheskiye Massy, No 10, 1971, pp 11-13

Abstract: Results are reported of a study of the antistatic efficiency of imidazolinium bromohydrates, sodium salts of imidazolinium hydroxides, and adipic salts of imidazolinium and pyridinium after deposition on the surface of low density polyethylene, high density polyethylene, block polyethylene, and polymethylmethacrylate as well as with introduction of these agents directly into the polymer mass. It has been determined that deposition of these substances on the surfaces of polymers decreases the specific surface resistance at $20 \pm 2^\circ\text{C}$ and relative humidity $65 \pm 3\%$. The sodium salts of the substituted imidazolium hydroxides are especially effective in lowering the surface resistance. Addition of 1-4 weight-% of the investigated antistatic agent directly into the polymer mass has practically no effect on the mechanical properties of low density polyethylene; high density polyethylene shows a lower relative elongation at the tearing point after addition of the antistatic agents.

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USSR

UDC 547.859.7'785.5:543.4.6

POZHARSKIY, A. F., KASHPAROV, I. S., ANDREICHIKOV, YU. P., BURYAK, A. I.,
KONSTANTINCHENKO, A. A., and SIMONOV, A. M., Rostov-on-Don State University

"Heterocyclic Analogs of Pleiadiana. VII. Tautomerism of 2-Amino-derivatives
of Perimidine, Acaperimidine, and Their Imidazole Analogs"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 807-813

Abstract: Analysis of the ionization constants, infrared and ultraviolet
spectral data and of quantum mechanical calculations showed that 2-aminoperi-
midines and 2-aminoacaperimidines show a greater tendency toward a tautomeric
equilibrium shift in the direction of the imino form than the 2-aminoderivatives
of 4,5-dihydroimidazole, benzimidazole, and angular or linear naphthimidazoles.
This tendency is believed to be connected with their π -electron structure.

1/1

USSR

UDC 547.831'781.1

KHRISTICH, B. I., KRUCHININ, V. A., POZHARSKIY, A. F., and SIMONOV, A. M.,
Rostov-on-Don State University

"Effect of the Basicity of Aza-groups on the Course of Nucleophilic
Substitution in Imidazo [4,5-f] quinolines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 814-817.

Abstract: Imidazo [4,5-f] quinoline was selected as a model compound because it contains two potentially active centers with respect to the nucleophilic reagents such as phenyllithium, sodamide, - namely positions 2 and 7. It was established that the quinoline nucleus is more reactive towards these reagents than the imidazole nucleus. An assumption was stated that the course of nucleophilic attacks is principally determined by the relative basicity of the aza group. The nucleophilic attack occurs at the carbon atom adjacent to the more basic nitrogen atom. This assumption was supported by molecular orbital calculations and pK_a values. The positive charge or the energy of anionic localization on C_2 - and C_7 - atoms in a neutral molecule appear to be of no consequence to the course of nucleophilic attack.

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1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CHELATE COMPOUNDS OF ARENEAZO,2,IMIDAZOLES. NEW EXAMPLE OF
COMPLEXES WITH A METAL CHELATE JUNCTION POINT OF THE M PLUS 4N TYPE -U-
AUTHOR--(05)-GARNOVSKIY, A.D., KUZNETSOVA, L.I., ANDREYCHIKOV, YU.P.,
OSIPOV, O.A., SIMONOV, A.M.
COUNTRY OF INFO--USSR
SOURCE--ZH. DSSH. KHIM. 1970, 40(3), 710-11
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC AZOLE COMPOUND, ORGANIC COMPLEX COMPOUND, ACETATE,
DIPOLE MOMENT, BROMINATED ORGANIC COMPOUND, HETEROCYCLIC OXYGEN
COMPOUND, BENZENE DERIVATIVE, MOLECULAR STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/2022 STEP NO--UR/0079/70/040/003/0710/0711
CIRC ACCESSION NO--AP0132282
UNCLASSIFIED

CIRC

PROCESSING DATE--13NOV70

UNCLASSIFIED

2/2 011
CIRC ACCESSION NO--A0132282
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A 2:1 MIXT. (MOLAR) OF
ARENFAZ₂, 2, IMIDAZOLES AND APPROPRIATE METAL ACETATES IN MEQH GAVE I (M,
COLOR, AND DIPOLE MOMENT GIVEN): NI PRIME POSITIVE POSITIVE, BROWN,
3.18; CO PRIME POSITIVE POSITIVE, GREEN, 4.40; AND II: CU PRIME
POSITIVE POSITIVE, YELLOW BROWN, 2.04; NI PRIME POSITIVE POSITIVE, RED
BROWN, 3.43; CO PRIME POSITIVE POSITIVE, BROWN, 4.78. IN THE SOLID
STATE, EVIDENTLY THE STRUCTURE OF I IS A TETRAHEORAL ARRANGEMENT, IN
WHICH HALF OF THE MOL. IS ROTATED AT RIGHT ANGLES TO THE OTHER ABOUT THE
HORIZONTAL AXIS. POSSIBILITY OF POLYMERIC OCTAHEDRAL STRUCTURE FROM
FURTHER COORDINATION OF THE METAL WITH THE N PRIMES ATOM OF IMIDAZOLE IS
ALSO POSSIBLE, HOWEVER.
ROSTOV-JH-DON, USSR.
FACILITY: ROSTOV.-NA-DONJ GOS. UNIV.,

1/2 010 UNCLASSIFIED PROCESSING DATE--11-1-70
 TITLE--SYNTHESIS OF 5, METHYLTHIO, AND 5, MERCAPTO DERIVATIVES OF
 2, AMINO BENZIMIDAZOLE -U-
 AUTHOR--(03)-SIMONOV, A.M., SAYAPIN, V.G., SIDEMAN, V.I.
 COUNTRY OF INFO--USSR
 SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(2), 232-3
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--ORGANIC SYNTHESIS, MERCAPTAN, SULFUR, AMINE, BENZIMIDAZOLE,
 ANISOLE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3008/1496
 STEP NO--UR/0063/70/015/002/0232/0233
 INT--AP0138497 UNCLASSIFIED

PROCESSING DATE--11DEC 70

UNCLASSIFIED

2/2 010
 CIRC ACCESSION NO--AP0138497
 ABSTRACT/EXTRACT--(U) GP-0-
 SUB2 NHC SUB6 H SUB4 SME-P IN ACOH AT 12-14DEGREES WITH A 2-3PERCENT
 DEFICIENT AMT. HNO SUB3 GAVE 70-5PERCENT 3,NITRO,4,(P,TOLYL SULFONAMIDO)
 THIOANISOLE (II), M. 117DEGREES, ALONG WITH BUT 10-15PERCENT ME
 P,(P,TOLYL SULFONAMIDO)PHENYL SULFOXIDE, M. 180DEGREES, WHICH WAS MORE
 SUL. IN ETH. WITH THE THEORETICAL AMT. HNO SUB3 THE REACTION GAVE
 25-30PERCENT LATTER PRODUCT. METHYLATION OF I WITH MEI IN ALC. NaOH
 GAVE THE N,ME,DERIV., M. 126DEGREES, WHICH DISSOLVED IN CONCD. H SUB2 SO
 SUB4 GAVE 86PERCENT 3,NITRO,4,METHYLAMINOTHIOANISOLE, M. 63.5DEGREES,
 WHICH HEATED WITH POWD. SN IN CONCD. HCL-HCO SUB2 H 3 HR GAVE AFTER
 TREATMENT WITH NH SUB4 OH AND EXTN. WITH C SUB6 H SUB6 53PERCENT
 5,METHYLTHIO,1,METHYLBENZIMIDAZOLE (III), M. 78.5DEGREES. THIS AND A
 THREEFOLD AMT. NANH SUB2 AT 100DEGREES, THEN 2 HR AT
 140DEGREES, GAVE 87PERCENT 2,AMINO,5,METHYLTHIO,1,METHYLBENZIMIDAZOLE,
 M. 181-2DEGREES, WHICH IN LIQ. NH SUB3 WITH NA GAVE 70PERCENT
 WARM P. SUB2 C (TO EFFECT HYDROLYSIS OF THE NA SALT). II SIMILARLY
 TREATED WITH NA IN LIQ. NH SUB3 GAVE AN OIL THAT WAS INSOL. IN ALKALIES
 AND WHOSE STRUCTURE WAS NOT DETD.
 GOS. UNIV., ROSTOV-CN-DCN, USSR.

UNCLASSIFIED

1/2 009

TITLE--REACTION OF BENZIMIDAZOLE DERIVATIVES WITH CHLOROSULFONIC ACID -U-

PROCESSING DATE--13NOV70

AUTHOR--(03)-SAYAPIN, V.G., SIMONOV, A.M., KUZMENKO, V.V.

COUNTRY OF INFO--USSR

SOURCE--KHM. GETEROTSIKL. SOEDIN. 1970, (5), 681-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZIMIDAZOLE, CHLORINATED AROMATIC COMPOUND, SULFONIC ACID, CHEMICAL SUBSTITUENT, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1018

STEP NO--UR/0409/70/000/005/0681/0683

AP0134730 UNCLASSIFIED

CIRK

PROCESSING DATE--13NOV70

UNCLASSIFIED

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009

CIRC ACCESSION NO--AP0134730
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE TITLE REACTION GAVE BENZIMIDAZOLE, 5, SULFONYL CHLORIDES WITH BENZIMIDAZOLES HAVING ELECTROPHILIC SUBSTITUENTS AT THE 2 POSITION; OTHER BENZIMIDAZOLES YIELDED 5, SULFONIC ACIDS. THUS, TO 4 ML OF FRESHLY DISTO. MSD SUB3 CL WAS ADDED OVER 30 MIN 1.18 G BENZIMIDAZOLE, AND THE MIXT., STIRRED 30 MIN AT 105-100DEGREES TO GIVE 1.65 G I (R EQUALS H, X EQUALS SO SUB3 H), M. 365DEGREES. SIMILARLY OBTAINED WAS I (R EQUALS ME, X EQUALS SO SUB3 H), M. IS SIMILAR TO 380DEGREES. 2, PHENYLBENZIMIDAZOLE SIMILARLY GAVE 80PERCENT I.HCL (R EQUALS PH, X EQUALS SO SUB2 CL), M. 363DEGREES, WHICH GAVE I (R EQUALS PH, X EQUALS SO SUB3 H), M. 265DEGREES; ALSO OBTAINED AS A BY PRODUCT WAS 14PERCENT I (R EQUALS SO SUB2 CL), M. 390DEGREES. STRUCTURE PROOFS WERE DESCRIBED. NA-DONU GOS. UNIV., ROSTOV ON DON, USSR. FACILITY: ROSTOV.

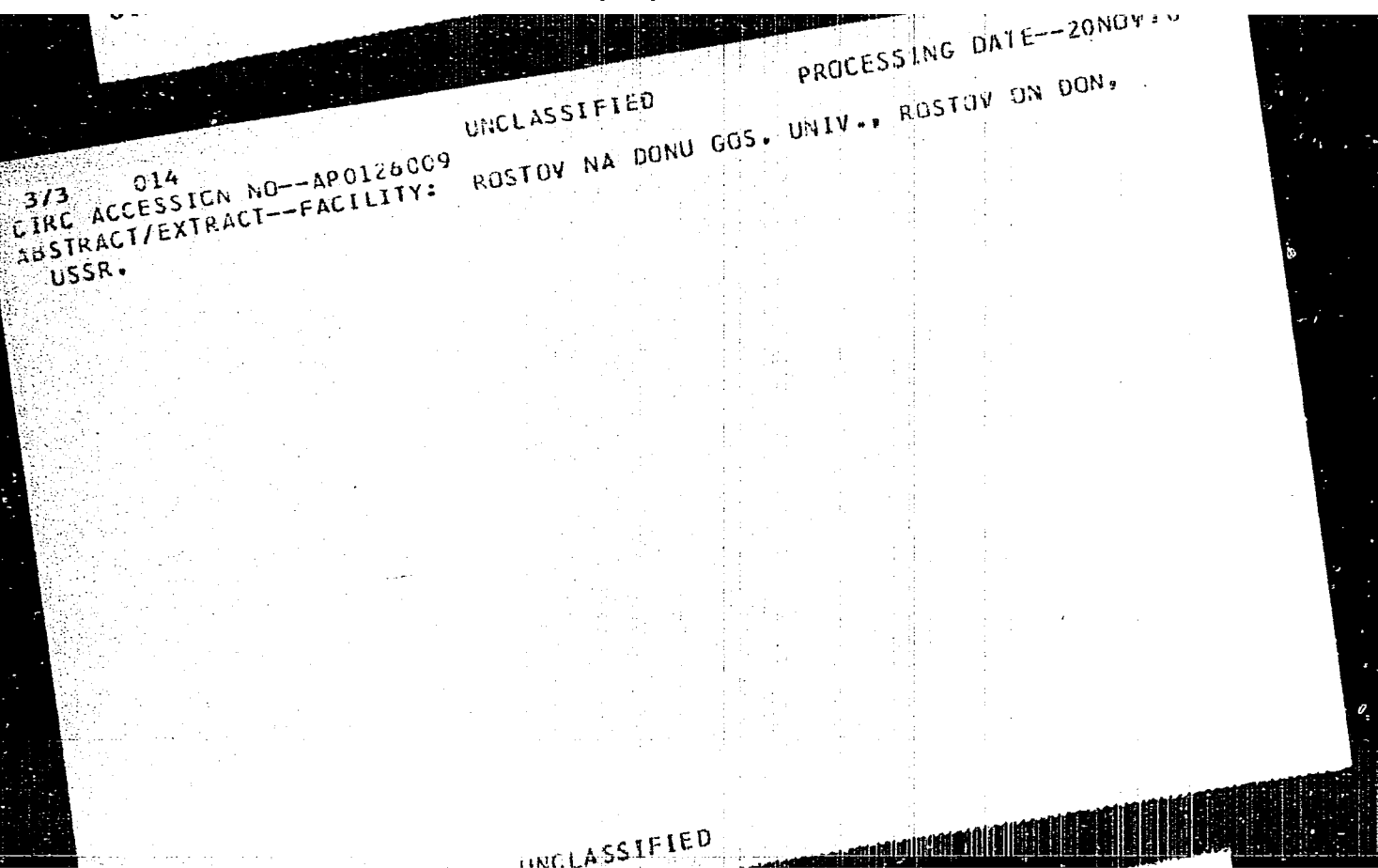
SECRETED

1/3 014
 TITLE--SYNTHESIS OF SOME 2 SUBSTITUTED 1-PHENYLMIDAZOLES -U-
 UNCLASSIFIED
 AUTHGR--(02)--SITKINA, L.M., SLYOMOV, A.M. 5
 COUNTRY OF INFO--USSR
 SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (3), 410-11
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--ORGANIC SYNTHESIS, BENZENE DERIVATIVE, IMIDAZOLE, NITROMETHANE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 REEL/FRAME--3001/0224
 STEP NO--UR/0409/70/000/003/0410/0411
 12609 FILED

PROCESSING DATE--20NOV70

UNCLASSIFIED

2/3 014
 CIRC ACCESSION NO--AP0126009
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO A SOLN. OF 0.06 G MEND SUB2 IN
 1 ML ETOH WERE ADDED DROPWISE AT 0DEGREES, 1 ML 10PERCENT AQ. NAOH, THEN
 A SOLN. OF 01.7 G I (R. EQUALS CHD) (II) IN ALC., AND THE WHOLE WAS KEPT
 30 MIN AT 0DEGREES TO YIELD 0.15 G I (R EQUALS CHD) (II) IN ALC., AND THE WHOLE WAS KEPT
 (III), M. 115-18.5DEGREES. III WAS DISSOLVED IN A SMALL AMT. AC SUB2 G
 ON BOILING WATER BATH AND DILD. WITH 3-5 ML H SUB2 O TO YIELD 36PERCENT
 YELLOW I (R EQUALS CH:CHNO SUB2), M. 147DEGREES (ETOH), A MIXT. OF 0.17
 G II AND 0.1 G CH SUB2(CO SUB2 H) SUB2 IN 1.5 ML ANHYD. C SUB5 H SUB 5 N
 WAS HEATED 1 HR ON A BOILING WATER BATH WITH A CATALYTIC AMT. PIPERDINE
 TO YIELD 52PERCENT I (R EQUALS CH:CHCO SUB2 H), M. 218-19DEGREES (H SUB2
 O); PICRATE M. 225-7DEGREES (ETOH). TO A SOLN. OF 0.17 G II AND 0.12 G
 PHAC IN 1 ML ETOH WAS ADDED DROPWISE AT 0DEGREES 0.25 ML 2PERCENT NAOH,
 TO YIELD 89PERCENT YELLOW I (R EQUALS CH:CHCOPH), M. 109-10DEGREES
 (PETROLEUM ETHER). A SOLN. OF 0.17 G II AND 0.24 G PHAC IN 1 ML ETOH
 WAS HEATED 1 HR ON A BOILING WATER BATH WITH 0.2 ML 20PERCENT KOH TO
 YIELD AFTER 2 DAYS 72PERCENT I (R EQUALS CH:CBZ SUB2), M. 133-4DEGREES.
 TO AN EMULSION OF PHC:CMGBR (FROM 0.96 G MG, 5.45 G ETBR, AND 5.1 G
 PHC:CH) IN 50 ML ETOH WAS ADDED WITH STIRRING AT 15-20DEGREES A SOLN. OF
 4.3 G II IN 80 ML ANHYD. ETHER, AND THE WHOLE REFLUXED 3-4 HR TO YIELD
 42PERCENT I (R EQUALS CH:CHIC:CPH) (IV), M. 121-20DEGREES (HEXANE). TO A
 SOLN. OF 1.37 G IV IN 20 ML ANHYD. DIOXANE UNDER REFLUX WAS ADDED WITH
 STIRRING 0.3 G SEC SUB2 (FRESHLY SUBLIMED) AND REFLUX CONTINUED 30 MIN
 TO YIELD 40PERCENT I (R EQUALS COC:CPH), M. 123-4.5DEGREES (HEXANE); 2,4
 DIPHENYLHYDRAZONE M. 155-7DEGREES (ETOH).



1/3 .019 UNCLASSIFIED PROCESSING DATE--0900

TITLE--NITROGEN CONTAINING BISHETEROCYCLIC SYSTEMS. II. NATURE OF THE

INFLUENCE OF THE 2-BENZIMIDAZOLYL RADICAL -U-

AUTHOR--(OSI)-KCLUDYAZHNAYA, S.N., SIMONOV, A.M., KOLODYAZHNYI, YU.V.,

OSIPOV, O.A., BREN, V.A.

COUNTRY OF INFO--USSR

SOURCE--KHM. GETEROTSIKL. SOEDIN. 1970, (2), 238-44

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, UV SPECTRUM, HETEROCYCLIC NITROGEN COMPOUND,
BENZIMIDAZOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1983/1169

STEP NO--UR/0409/10/000/002/0238/0244

AP0054070 UNCLASSIFIED

PROCESSING DATE--09OCT70

UNCLASSIFIED

2/3 .019

CIRC ACCESSION NO--A0054070
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE QUATERNARY SALTS ESP. OF
1,ARYL, 3,(BENZIMIDAZOL,2,YL)BENZIMIDAZOLIUM UNDERGO RING OPENING
REACTIONS WITH WEAK BASES (SUCH AS NH SUB3 IN PYRIDINE) AT ROOM TEMP.
THE SALTS WITH A FREE NH GROUP (I.E., WITHOUT THE 1,ARYL SUBSTITUENT)
REACT SIMILARLY. NO YLIDE FORMATION WAS FOUND. THE RING OPENING
PRODUCTS DEFORMYLATED BY HEATING. THE UV AND IR SPECTRA OF VARIOUS
STARTING COMPS., PRODUCTS, AND INTERMEDIATES WERE RECORDED. A CH SUB2
GROUP BETWEEN THE TWO IMIDAZOLE RINGS INCREASES STABILITY. THE RINGS
ARE THEN OPENED ONLY IN THE PRESENCE OF STRONG BASES AT ROOM TEMP.; THE
PRODUCTS ARE RECYCLED IN ACID MEDIUM. THE PROTONIZATION CONSTS. OF PK
SUBA 1 AND PK SUBA2 OF MODEL COMPS. WERE MEASURED IN MECH. THE
FOLLOWING VALUES (7-7.5 HIGHER THAN THOSE MEASURED IN WATER) (COMP.;
OBTAINED FOR N,(1,METHYLBENZIMIDAZOL,2,YL)SUBSTITUTED COMPS.:
PK SUBA1, PK SUBA2, AND M.P. GIVEN): IMIDAZOLE, 11.46, 5.34,-;
BENZIMIDAZOLE, 9.91, 5.01,-; PYRAZOLE, 9.59, -91-2DEGREES; INDIAZOLE,
8.80, -, 171-2DEGREES; FOR N,(1,METHYLBENZIMIDAZOL,2,YL,METHYLENE
SUBSTITUTED COMPS.: IMIDAZOLE, 13.73, 9.25, 150DEGREES; BENZIMIDAZOLE,
12.58, 9.21, 165-6DEGREES; PYRAZOLE, 12.27, 4.29, 109.5-10.0DEGREES;
INDIAZOLE, 12.03, 4.72, 167-8DEGREES; FOR SUBSTITUTED BENZIMIDAZOLES:
N,ET, 13.22,-,-; N,PR, 13.22,-,-. THE QUATERNARY SALTS WERE PREPD. BY
MELTING AT 140-50DEGREES EQUIMOLAR AMTS. OF N,ALKYLBENZIMIDAZOLE WITH
2,CHLORO OR 2, (CHLOROMETHYL)BENZIMIDAZOLE.

UNCLASSIFIED

3/3 019
 CIRC ACCESSION NO--A0054070 UNCLASSIFIED PROCESSING DATE--0700
 ABSTRACT/EXTRACT--THUS, THE FOLLOWING DERIVS. OF
 N, (BENZIMIDAZOL, 2, YL), O, PHENYLENEDIAMINE WERE PREPD. (M.P. GIVEN):
 N, ME, N, FORMYL, 207-8DEGREES; N, ME, 226-7DEGREES; N, PH, 268-9DEGREES;
 SIMILARLY, N, PH AND N, ET, N PRIME, (1, METHYLBENZIMIDAZOL,
 2, YL, O, PHENYLENEDIAMINES, M. 183-4DEGREES AND 222-3DEGREES, RESP., WERE
 OBTAINED. N, METHYL, N, FORMYL, N PRIME, (1, METHYLBENZIMIDAZOL, 2, YL,
 METHYLENE), O, PEHNYLENEDIAMINE, M. 164-5DEGREES WAS PREPD.

UNCLASSIFIED

1/2 018

TITLE--IMIDAZO(4,5 F) QUINOLINE. II. UV ABSORPTION AND LUMINESCENCE OF
IMIDAZO(4,5 F) QUINOLINE AND ITS QUATERNARY SALTS -U-
AUTHOR--(05)-KHRISTICH, B.I., KNYAZHANSKIY, M.I., OSIPOV, D.A., ASMAYEV,
O.T., SIMONOV, A.M.
COUNTRY OF INFO--USSR

PROCESSING DATE--18SEP 70

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 234-7
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--UV SPECTRUM, ABSORPTION SPECTRUM, LUMINESCENCE, IMIDAZOLE,
QUINOLINE, QUATERNARY SALT, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/1109

STEP NO--UR/0409/70/000/002/0234/0237

NO--AP0104507 UNCLASSIFIED

PROCESSING DATE--18--

UNCLASSIFIED

2/2 018

CIRC ACCESSION NO--AP0104507
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE UV ABSORPTION SPECTRUM OF THE
TITLE COMPD. IS VERY SIMILAR TO THAT OF NAPHTHO(1,2-D)IMIDAZOLE AND
INDICATES THAT PROTONATION OCCURS ON THE QUINOLINE N ATOM. LUMINESCENCE
SPECTRA WAS STUDIED IN THE 17,000-24,000 CM PRIME NEGATIVE REGION AND A
MAX. WAS FOUND AT 458-96 NM. A POLAR MEDIUM FACILITATES THE TRANSITION
OF THE EXCITED MOLS. IN THE POLAR FORM WITH HIGHER PROTON ACCEPTOR
PROPERTIES. THE EXCITATION ENERGY FOR THE IMIDAZO-QUINOLINIUM SALT IS
REDUCED DUE TO THE POSITIVELY CHARGED N ATOM WHICH SHIFTS THE ELECTRON
CHARGE IN THE SAME SENSE AS THE ABSORPTION OF A PHOTON DOES. THE
IRRADN. OF THE QUATERNARY SALT DOES NOT INVOLVE ENERGY ABSORPTION
CONNECTED WITH THE CHANGE OF N HETEROATOM HYBRIDIZATION.

UNCLASSIFIED

1/2 016
 TITLE--IMIDAZOLE DERIVATIVES CONTAINING POTENTIALLY LABILE GROUPS AT THE N
 ATOMS. IV. NEW METHOD FOR OBTAINING 1,6-DISUBSTITUTED BENZIMIDAZOLE -U
 AUTHOR--MARYANOVSKIY, V.M., POZHARSKIY, A.F., SIMONOV, A.M.
 COUNTRY OF INFO--USSR
 SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 216-18
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--BENZIMIDAZOLE, AMINE DERIVATIVE, ALKYLATION, ORGANIC NITRO
 COMPOUND, CHEMICAL SYNTHESIS
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1984/1801
 STEP NO--UR/0409/70/000/002/0216/0218
 CIRC ACCESSION NO--A00100375
 UNCLASSIFIED

PROCESSING DATE--11SEP70

UNCLASSIFIED

2/2

016

CIRC ACCESSION NO--AP0100375

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

ABSTRACT. THE QUATERNIZATION OF 5-ALKYL AND 5-ALKOXY DERIVS. OF 1-BENZIMIDAZOLE (I) TAKES PLACE IN TOLUENE, BUT THE REACTION INVOLVING 5-AMINO DERIVS. IS CARRIED OUT IN ACETONE. DEBENZYLTATION WITH NA IN LIQ. NH SUB3 YIELDS UP TO 80PERCENT 6, ALKYL OR 6, ALKOXY, 1, BENZIMIDAZOLE. REACTION WITH NA-HG GIVES POORER YIELDS AND THE METHOD CANNOT BE USED FOR THY SYNTHESIS OF 6-BR AND 6-NITRO DERIVS. BENZIMIDAZOLINIUM SALTS WERE PREPD. FROM 5-SUBSTITUTED I (5-SUBSTITUENT, ALKYL HALIDE, AND N.P. GIVEN): -, ETI, 173-4DEGREES; ME, ETI, 173-4DEGREES; MEQ, ETBR, 172-3DEGREES; MEQ, ETI, 151-2DEGREES; MEQ, MEI, 240-1DEGREES, NH SUB2, MEI, 166-7DEGREES; NO, ETI, 169-9.5DEGREES; BR, ETI, 201-2DEGREES. DECOMP. OF THE SALTS WITH NA GAVE BANZIMIDAZOLES (SUBSTITUENTS, PERCENT YIELD, M.P., B.P., AND M.P. PICRATE GIVEN): 1, ME, 6, MEQ, 60, 66-7DEGREES, 195-90DEGREES-15 MM, MINUS; 1, ET, 6, MEQ, 62, MINUS, 180-85DEGREES-13 MM OR 162-7DEGREES-9 MM, 215-16DEGRFES; 1, ET, 6, ME, 53, MINUS, 205-10DEGREES-2, 256-7DEGREES; 1, ME, 6, NH SUB2, 70, MINUS, 180-85DEGREES-4 MM, 225-70DEGREES. THE 5-AMINO DERIV. OF I M. 155-6DEGREES WAS PREPD. IN 67PERCENT YIELD FROM THE CORRESPONDING NITRO COMPD. BY REDN. WITH SNCL SUB2-HCL. THE DECOMP. OF THE SALT FROM ETI AND 3, ET, 5, BR DERIV. OF I WITH NA GAVE ONLY 1 ETHYLBENZIMIDAZOLE.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--11SEPTO
 TITLE--NATURE OF THE INTERACTION OF PHENYL AND IMIDAZOLE RINGS IN
 N,ARYLIMIDAZOLES. IV. DERIVATIVES OF 1,PHENYLIMIDAZOLE WITH SUBSTITUENTS
 AUTHOR--POZHARSKIY, A.F., SITKINA, L.M., SIMONOV, A.M., CHEGOLYA, T.N.
 COUNTRY OF INFO--USSR
 SOURCE--KHIM. GETEROTSIKL. SOEDIN 1970, (2), 209-13
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--BENZENE DERIVATIVE, IMIDAZOLE, ELECTRON ACCEPTOR, ELECTRON
 DONOR, DIPOLE MOMENT, IONIZATION CONSTANT, UV SPECTRUM, MOLECULAR
 INTERACTION

CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1984/1803
 CIRC ACCESSION NO--AP0100377
 UNCLASSIFIED
 STEP NO--UR/0409/70/000/002/0209/0213

UNCLASSIFIED

PROCESSING DATE--11SEP70

2/2 019

CIRC ACCESSION NO--AP0100377
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE UV ABSORPTION SPECTRA OF
SUBSTITUTED 1-PHENYLIMIDAZOLES WERE RECORDED. THE INTRODUCTION OF
ELECTRON ACCEPTOR GROUPS INTO THE BENZENE RING EXERTS A BATHOCHROMIC
SHIFT WHILE THE ELECTRON DONOR GROUPS HAVE LITTLE EFFECT. THE DIPOLE
MOMENTS μ (IN D), IONIZATION CONSTS. (PK SUBA), AND THE RATE CONST. K
OF THE REACTION WITH ETI (10 PRIME NEGATIVE 6 L. MOLE PRIME NEGATIVE 1 SEC
PRIME NEGATIVE 1) FOR I WERE (R μ , PK SUBA, AND K GIVEN): H, 3.50,
5.10, 15.7; P-ME, 3.90, 5.24, 19.0; M-ME, 3.73, 5.24, 16.9; OMICRON-ME,
3.79, -, -; P-BR, 2.20, 4.91, 11.0; P-OH, 5.48, 5.35, 22.6; P-AC, 2.39,
4.54, 10.8; P-O SUB2 N, 1.55, 3.96, U.8; M-O SUB2 N, 3.63, -, -; P-MED,
-, 5.23, 19.6. THE IMIDAZOLE GROUP IN I BEHAVES AS AN ELECTRON DONOR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--11SEP70
 TITLE--REACTION OF 2, AMINOMETHYLBENZIMIDAZOLE WITH NITROUS ACID -U-
 AUTHOR--CHUB, N.K., TSUPAK, YE.B., SIMONOV, A.M. S
 COUNTRY OF INFO--USSR
 SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 127
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--CHEMICAL SYNTHESIS, CHLORINATED ORGANIC COMPOUND, BROMINATED ORGANIC COMPOUND, BENZENE DERIVATIVE, ORGANIC AZOLE COMPOUND, AMINE DERIVATIVE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1984/1782 STEP NO--UR/0409/70/000/001/0127/0127
 CIRC ACCESSION NO--AP0100362
 UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0100362

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF I (R PRIME1 EQUALS CH
SUB2 NH SUB2, R PRIME2 EQUALS H) WITH 1 MOLE HNO SUB2 IN HCL OR HBR
SGLN. (3 MOLES) GAVE I (R PRIME1 EQUALS CH SUB2 CL OR CH SUB2 BR, R
PRIME2 EQUALS H) IN 81 AND 90PERCENT YIELDS, RESP. WITH EXCESS HNO SUB2
(2 MOLES) THERE WERE FORMED I (R PRIME1, R PRIME2, PERCENT YIELD, M.P.,
AND CRYSTN. SOLVENT GIVEN): CH SUB2 CL, NO, 17, 178DEGREES, MEDH; CH
SUB2 OH, H, 35, 171-2DEGREES; H SUB2 O; HON:CNO SUB2, H, 39, 108DEGREES
(DECOMPN.), BAR.

UNCLASSIFIED

USSR

2
YANAYT, Yu. A., ABAKUMOV, G. A., KROMSKIY, G. I., ~~STERNOV, A. P.~~, FADEYEV, V. V.,
and KHOKHLOV, R. V., Moscow State University imeni M. V. Lomonosov and The
Physico-Chemical Institute imeni L. Ya. Karpov

"Generation in the Ultraviolet Band With Frequency Tuning in a Paraterphenyl
Solution Excited by a Flash Bulb"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 13,
No 11, 5 Jun 71, pp 616-619

Abstract: This article discusses generation with fine tuning in the wavelength
of 330-350 nm in a paraterphenyl solution excited by a flash bulb. One of the
real problems in quantum electronics is the design of a frequency-tunable la-
ser in the ultraviolet band of the spectrum. The authors show the broad pos-
sibilities here of using organic compounds as the active media especially
paraterphenyl, which is found to be the best compound for producing tunable
lasers in the ultraviolet band pumped by flash bulbs. The experimental pro-
cedures are discussed and the results are given in the form of an oscillogram
and a table, which gives the threshold values and the limits of frequency tun-
ing. The low values of the threshold energies for exciting the solutions shown
in this table indicate that this pumping system is also effective for exciting
a large number of other organic compounds. 1 figure, 1 table, bibliography of
3 titles.

1/1

1/2 049 UNCLASSIFIED PROCESSING DATE--30OCT70
 TITLE--MEASUREMENT OF TRIPLET TRIPLET ABSORPTION SPECTRA OF MOLECULES OF
 ORGANIC COMPOUNDS IN LIQUID SOLUTIONS BY USING A LASER -U-
 AUTHOR--(04)-TSURIKOV, YU.L., ABAKUMOV, G.A., TRUSHANOV, A.A., SIMONOV,
 A.P.
 COUNTRY OF INFO--USSR
 SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2), 336-8
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS
 TOPIC TAGS--ABSORPTION SPECTRUM, NAPHTHALENE, RUBY LASER, AROMATIC KETONE,
 BENZENE, PULSE EXCITATION, LASER RADIATION, SECOND HARMONIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1995/1241

STEP NO--UR/0368/70/012/002/0336/0338

CIRC ACCESSION NO--AP0116703

UNCLASSIFIED

2/2 049

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116703

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRA OF TRIPLET TRIPLET (T-T) ABSORPTION OF PH SUB2 CO AND NAPHTHALENE IN BENZENE SOLN. WERE MEASURED AT ROOM TEMP. BY USING A RUBY LASER 2ND HARMONICS RADIATION (LAMBDA EQUALS 347 NM; POWER 0.3-0.5 MW, AND PULSE DURATION SIMILAR TO 30 NSEC) AS THE EXCITATION SOURCE. THE 2ND HARMONICS WAS OBTAINED WITH A KH SUB2 PO SUB4 SINGLE CRYSTAL (25 MM LONG). SOLNS. OF FLUORESCHEIN IN HOAC WATER MIXT. AND OF PHENYLACRIDONE IN ETOH WERE USED AS SOURCES OF VISIBLE REGION RADIATION. THE POSITIONS OF MAX. IN PH SUB2 CO AND NAPHTHALENE AT 350 AND 420 NM, RESP., IN THE T-T SPECTRUM, ARE IN GOOD AGREEMENT WITH LITERATURE DATA. THE ADVANTAGES OF THE USE OF LASER RADIATION FOR THE EXCITATION OF ORG. MOLLS. IN SOLNS. ARE DISCUSSED.

UNCLASSIFIED

1/2 040 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--REACTION OF TRITIUM RECOIL ATOMS WITH SOME ALANINE DERIVATIVES :U-

AUTHOR--SIMONOV, E.F.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(2) 171

DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ALANINE, TRITIUM, COPPER COMPLEX, RADIATION EFFECT, PAPER CHROMATOGRAPHY, GAS CHROMATOGRAPHY, AMINO ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/0194

STEP NO--UR/0456/70/004/002/0171/0171

CIRC ACCESSION NO--AP0106R50

UNCLASSIFIED

2/2 040 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0106850
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS STUDIED OF STERIC
FACTORS, AND THE ABILITY OF PARENT COMPS. TO SCATTER THE EXCESS ENERGY,
ON THE PRIMARY INTERACTIONS OF T RECOIL ATOMS WITH AMINO ACIDS IN THE
CRYST. STATE. CU COMPLEXES AND PHTHALOYL DERIVATIVES OF ALPHA AND
BETA, ALANINE WERE MIXED WITH LI SUB2 CO SUB3 AND IRRADIATED FOR 1 HR BY
A FLUX OF 1.2 TIMES 10 PRIME13 N-CM PRIME2 SEC. THE IRRADIATED SAMPLES
WERE ANALYZED BY GAS LIQ. AND PAPER CHROMATOG.

UNCLASSIFIED

USSR

SIMONOV, I. V., Moscow

UDC 532.593

"Diffraction of a Strong Shockwave on a Weakly Expressed Wedge"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 6, 1971, pp 107-114.

ABSTRACT: The diffraction of a strong shockwave on a wedge is studied, assuming a slight difference in the properties of the material of the medium and the wedge. The angle of the wedge and the placement of the wedge in relationship to the leading edge of the wave are arbitrary. Under conditions of high pressures and temperatures developed at the leading edge of the strong shockwave ($P \sim 10^6$ atm), naturally, in many cases the theoretical calculations ignore the strength of the material and utilize comparatively simple medium models for description of the state of the matter, for example the model of an ideal fluid. Comparison of the results of this theoretical approach with the results of experiments indicate the boundaries of applicability of this model and indirectly indicate the degree of influence of factors not considered. The problem in hand is reduced to the problem of Hilbert. It is found that the condition of existence of a solution of the Hilbert problem in the class of functions with no null below second order at infinity is identical to the condition of stability of the shockwave in a homogeneous medium.

1/1

- 14 -

USSR

UDC 621.385.623.4 (088.8)

ZUSMANOVSKIY, S. A., ZIMIN, S. F., SIMONOV, K. G.

"Two-Gap Resonator"

USSR Author's Certificate No 253854, filed 11 Mar 68, published 29 Jun 70 (from *RZh-Elektronika i yeye primeneniye*, No 2, Feb 71, Abstract No 2A1729)

Translation: A two-gap resonator for microwave devices is patented, with two interaction regions, bounded by each end of the drift tube and by the intervening wall with apertures, perpendicular to the direction of the electrons, and which differs in the fact that with the object of matching the velocity modulation of the electron stream with respect to its cross section and increasing the efficiency, the distance between the ends of the drift tube forming the overall interaction space is selected so as to exceed by not less than 1.5 times the diameter of the apertures for passage of the electron stream.

1/1

.. 71 ..

USSR

5 UDC: 621.372.413

ZUSMANOVSKIY, S. A., ZIMIN, S. F., SIMONOV, K. G.

"Coefficient of Interaction and Electronic Conductivity of a Two-Gap Resonator"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific and Technical Collection. SHF Electronics), 1970, vyp. 1, pp 55-57 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7B139)

Translation: Expressions for the coefficient of interaction and the components of electronic conductivity with regard to space charge forces are given for a two-gap resonator in the case of an arbitrary phase shift for the fields in the gaps. Two-gap resonators with both plane and gridless gaps are considered. The given relationships may be used to determine the geometric dimensions of the field of interaction of a two-gap resonator which give maximum interaction for any phase shift of the fields in the gaps. Bibliography of four titles. Resumé.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--PERICLASE SPINELLIDE MANUFACTURED ARTICLES BASED ON MAGNESITE
POWDER FROM CAUSTIC DUST -U-
AUTHOR-(03)-BUGAYEV, N.F., SIMONOV, K.V., VYUNNIKOVA, YE.I.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, OGNEUPORY, NO. 5, MAY 70, PP 12-13
DATE PUBLISHED----MAY70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--REFRACTORY PRODUCT, ROASTING FURNACE, SPINEL, MAGNESIUM OXIDE,
THERMAL STABILITY/(U)COST 10888 64 REFRACTORY QUALITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0707 STEP NO--UR/0131/70/000/005/0012/0013
CIRC ACCESSION NO--A99134442

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134442

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE RESULTS ARE GIVEN OF A STUDY OF THE CHARACTERISTICS OF MANUFACTURED OBJECTS MADE FROM POWDER OBTAINED BY ROASTING CAUSTIC MAGNESITE IN A ROTATING OVEN WITH SINTERING ADDITIVES. THE OBJECTS WERE TESTED WHILE IN ACTUAL USE. A TABLE GIVES THE CHEMICAL COMPOSITION OF THE POWDERS. ANOTHER TABLE GIVES THE CHARACTERISTICS OF THE MANUFACTURED ARTICLES. THE OBJECTS TESTED SATISFIED ALL REQUIREMENTS, EXCEPT THAT OF THERMAL STABILITY, OF GOST, ALL UNION STATE STANDARD, 10888-64. FACILITY: MAGHEZIT PLANT.

UNCLASSIFIED

Acc. Nr:

AP0046634

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code:

4R 6131

82444w Large-scale magnesite and chromium magnesite refractories for open-hearth furnaces. Cherepov, P. V.; Simonov, K. V.; Koren'kov, V. N.; Bezryadov, A. A. (USSR). *Ogneupory* 1970, 35(1), 14-15 (Russ). The attempt was made to substitute hitherto used refractory bricks 230 x 115 x 65 mm for bricks of size 300 x 150 x 65 mm. The performance of the press is increased by 4-5 ton/day. Also, the efficiency of bricklayers building blast furnaces with larger bricks rises 10-15%. In addn., with larger bricks the no. of crannies in brick-work is diminished in the horizontal direction which improves the servicability of the brick-work. J. Jindra

EB

REEL/FRAME

19781946

18

USSR

5
BUGAYEV, N. F., SIMONOV, K. V., V'YUNNIKOVA, YE. I. ("Magnesit"
Plant), NAZAROV, K. S. (Magnitogorsk Metallurgical Combine)

"Periclase Spinellide Manufactured Articles Based on Magnesite
Powder From Caustic Dust"

Moscow, Ogneubory, No 5, May 70, pp 12-13

Abstract: The results are given of a study of the characteristics of manufactured objects made from powder obtained by roasting caustic magnesite in a rotating oven with sintering additives. The objects were tested while in actual use. A table gives the chemical composition of the powders. Another table gives the characteristics of the manufactured articles. The objects tested satisfied all requirements, except that of thermal stability, of GOST (All-Union State Standard) 10888-64.

1/1

S Refractory Materials

USSR

BUGAYEV, N. F., SIMONOV, K. V.,
YE. V., VORONIN, I. G., CHERNYAVSKAYA, V. P., KATSAY,

"Refractories of Caustic Magnesite"

Moscow, Ogneupory, No 3, Mar 70, pp 2-3

Abstract: This article describes the experience in manufacture and service testing of magnesite refractories based on 0-2 mm fraction powder produced by roasting caustic magnesite without sintering additives. The experimental products were made using the technological process for the production of ordinary magnesite products and roasted at 1650°C. The properties of the roasted products are described. The deformation temperature under load is 80°C higher than that called for by the standards. Furnace tests showed that the experimental brick wears evenly during operation. The experimental refractories held up to usage as well as standard refractories.

1/1

USSR

UDC 621.373.52-181.48

ZHITNIKOV, YE. I., SIMONOV, L. A., and MARTYNOVA, G. G.

"Generators Based on RC-Structures With Distributed and Lumped Parameters Made From Integrated Hybrid Circuits"

Sb. nauch. tr. po probl. mikroelektron. Mosk. in-t elektron. tekhn. (Collected Scientific Works on Problems in Microelectronics. Moscow Institute of Electronics Technology), 1972, vyp.10, pp 194-200 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 D266)

Translation: The authors describe the principal circuits and present the results of the experimental studies of RC-generators based on integrated hybrid microcircuits. The studies were carried out within a broad range of frequencies from 3 cps to 10 Mc. Data are also given on the stability of the frequency and amplitude of RC-generators and on the control of the frequency of RC-generators with the aid of varicaps of p-n-junctions. Resume.

1/1

- 99 -

USSR

UDC: 548.5

2

TSEYTLIN, M. N., PLAZHOV, G. F., LOBACHEV, A. N., POPOLITOV, V. I.,
SIMONOV, M. A., and BELOV, N. V.

"Investigating Crystallization in the Hydrothermal System of
 $\text{GeO}_2\text{-Sb}_2\text{O}_3\text{-KF-H}_2\text{O}$ "

Moscow, Kristallografiya, vol 18, No 4, 1973, pp 836-839

Abstract: An investigation is conducted into the crystallization conditions in the $\text{GeO}_2\text{-Sb}_2\text{O}_3\text{-KF-H}_2\text{O}$ system by the hydrothermal method. The purpose of this investigation is two-fold: first, to fill in the gaps of knowledge concerning the interaction chemistry of germanium dioxide and antimony trioxide in the presence of a solution at high temperatures and pressures; second, to obtain all possible single crystals with no analogs in nature because of their potential value as objects of study with regard to structure and physical characteristics. The experiments were conducted with a charge consisting of GeO_2 and Sb_2O_3 copper lined autoclaves with periodic action. The results of the examination of the crystallization in the system are given individually for each temperature jump in the range of $400\text{-}550^\circ\text{C}$, the jumps being made in $20\text{-}45^\circ$ intervals. Photographs of the crystals are shown,
1/2

- 21 -

USSR

UDC: 548.5 ^x (2)

TSEYTLIN, M. N., et al, Kristallografiya, vol 18, No 4, 1973,
pp 836-839

and a table of interplanar distances for $Sb_2Ge_2O_7$ crystals is given.

2/2

USSR

UDC: 548.736.4

BELOKONEVA, Ye. L., IVANOV, Yu. A., SIMONOV, M. A., BELOV,
N. V., Moscow State University imeni M. V. Lomonosov

"Crystal Structure of Cadmium Orthogermanate $Cd_2[GeO_4]$ "

Moscow, Kristallografiya, Vol 17, No 1, Jan/Feb 72, pp 217-219

Abstract: The authors determine the crystal structure of synthetic germanate of cadmium. From the lattice parameters and interplane distances, it is established that the compound is an analog of $\gamma-Ca_2SiO_4$. The assumed formula of Cd_2GeO_4 was later confirmed by chemical analysis. The interatomic distances for cadmium orthogermanate are calculated and the coordinates of the basis atoms are compared for calcium orthosilicate and cadmium orthogermanate. The results are tabulated. It is found that an olivine-like band is repeated in the cadmium orthogermanate crystal structure. Each oxygen atom is simultaneously the vertex of 3 Cd-octahedra and one Ge-tetrahedron, and 3 of the 6 edges of the tetrahedron are shared by Cd-octahedra. One figure, four tables, bibliography of two titles.

1/1

USSR

UDC 548.736.6

CHIN', KHAN, SIMONOV, M. A., BELOV, N. V.

"Crystal Lattices of Willemite Zn_2/SiO_{4-7} and Its Germanium Analog Zn_2/GeO_{4-7}

Moscow, Kristallografiya, Vol 15, No 3, 1970, pp 457-460

Abstract: This article contains a discussion of results from tests run on crystals of synthetic willemite and its Ge-analog Zn_2/GeO_{4-7} . The parameters of the crystals are tabulated, and the various analyses run to determine them are described. The parameters of the elementary cells were as follows: Si-willemite $a_{hex} = 13.93$, $c_{hex} = 9.31\text{\AA}$, $a_{rh} = 8.63\text{\AA}$, $\alpha = 107.52^\circ$, Ge-willemite $a_{hex} = 14.27$, $c_{hex} = 9.56\text{\AA}$, $a_{rh} = 8.84\text{\AA}$, $\alpha = 107.42^\circ$. Fedorov group $R\bar{3}$. The lattices were resolved by the "heavy atom" with subsequent more precise definition of the coordinates of the atoms with respect to three-dimensional sets of reflections by the least squares method to $R_{hk1} = 14.3$ percent with 250 independent nonzero reflections $hk0$ - $hk6$ for willemite and $R_{hk1} = 13.3$ percent with 226 reflections $hk0$, $hk3$, $hk6$, $hk9$ for its Ge-analog. The metachains $[Zn_2O_{12}]$ twist around the axes 3_1 (3_2), and they are incrustated with Si(Ge)-orthotetrahedrons. 1/2

USSR

CHIN, KHAN, et al, Kristallografiya, Vol 15, No 3, 1970, pp 457-460

Each O atom is in the center of an almost equilateral triangle Zn-Zn-Si(Ge), and each cation is in the tetrahedral enclosure of O atoms. The interatomic distances calculated by the terminal coordinates are as follows: Si-O = 1.58-1.68; Ge-O = 1.74-1.78; Zn-O = 1.89-2.02 Å. They agree with those already encountered. Willemite and its Ge-analog fill up the isostructural series: $\text{Li}_2/\text{Be}_2/\text{SiO}_4$ - Li_2/WO_4 - Li_2/MoO_4 - Be_2/SiO_4 - Zn_2/SiO_4 (Zn, Mn) $_2/\text{SiO}_4$ - Zn_2/GeO_4 . If the crystal chemical role of Si and Zn is equalized, the lattice can be considered skeletal, made of tetrahedrons with the formula $(\text{Zn, Si})_3\text{O}_4$. If it is classified with respect to the silicon oxide radical, then Zn_2/SiO_4 , jointly with phenakite Be_2/SiO_4 , form a special group of hexagonal orthosilicates which differ greatly from the rhombic orthosilicates of the olivine group.

2/2

- 72 -

USSR

UDC 621.762.002.5(088.8)

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DRUSHININ, L. K., LIEPINA, YE. D., KUVSHINOV, P. S., SIMONOV, L. P., SAFRONOV, B. V., FERFILOV, L. S., and TOKAREVA, L. I.

"Apparatus for Making Powders and Granules by Centrifugal Pulverization of Melt"

Ussr Authors' Certificate No 272501, Cl. 31 b³, 9/00; 49 1, 3, [B 22 f 9/00, B 05 b 3/12], filed 12 Sep 68, published 2 Sep 70 (from KZh-Metallurgiya, No 3, Mar 71, Abstract No 3G470P by G. Derkacheva)

Translation: An apparatus is suggested for making powders and granules by centrifugal pulverization of a melt. The apparatus consists of a rotating ring with a hole in the bottom for delivery of the material to be pulverized, a local heat source situated above this material, and a cooler which is unique in that, in order to increase powder and granule quality, it is rigidly fastened to the outside of the ring.

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1/2 014 UNCLASSIFIED PROCESSING DATE--02OCT70
 TITLE--REMOVAL OF OIL FROM WASTE WATERS BY A PRESSURE FREE FLOTATION
 METHOD -U-
 AUTHOR-(03)-ROZHNYATOVSKIY, I.I., SIMONOV, N.F., STEPANOV, YU.V.
 COUNTRY OF INFO--USSR
 SOURCE--KOKS KHIM 1970, (2) 35-9
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
 TOPIC TAGS--CHEMICAL SEPARATION, FLOTATION, COKE, PETROLEUM PRODUCT, WATER
 PURIFICATION EQUIPMENT, INDUSTRIAL WATER
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1991/0112 STEP NO--UR/0068/70/000/002/0035/0039
 CIRC ACCESSION NO--AT0110084
 UNCLASSIFIED

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2/2 014

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AT0110084

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OILS AND TARS CONTAINED IN EFFLUENTS OF COKE CHEM. PLANTS WERE REMOVED BY THE DISPERSED AIR FLOTATION IN OPEN CHAMBERS UNDER BOTH LAB. AND INDUSTRIAL PILOT PLANT CONDITIONS. IN THE LAB. THE DISPERSION OF AIR WAS GENERATED BY A SUBMERGED IMPELLER OF 45 MM DIAM. REVOLVING AT A PERIPHERAL SPEED OF 6 M-SEC. A 80-96PERCENT REMOVAL WAS ACHIEVED AT AN AIR TO LIQ. VOL. RATIO OF 30-40 AND A 13-18 MIN RETENTION. IN THE PILOT PLANT, FLOTATION FOLLOWS AFTER SEDIMENTATION BUT BEFORE ANY NH SUB3 CONTG. WASTE WATERS ARE ADDED, WHICH HAVE AN INHIBITING EFFECT. A 6 HR SEDIMENTATION RESULTS IN REMOVING ONLY 28PERCENT OF 190 PPM OF THE INITIAL OIL AND TAR CONTENTS. THE FLOTATION IS DONE IN 5 PARALLEL 1.5 TIMES 2.3 M CHAMBERS EACH OF WHICH IS EQUIPPED WITH AN IMPELLER OF 320-50 MM DIAM. PLACED AT 1.4 M BELOW THE WATER LEVEL, FED FROM THE OUTSIDE THROUGH 2 SUCTION PIPES AND DRIVEN BY A VERTICAL SHAFT 10 KW MOTOR AT VARIABLE SPEEDS OF 590, 730, AND 970 RPM. THE FLOTATION CHAMBERS ARE ADJINED BY THE STEAM HEATED SLUDGE COMPARTMENTS RECEIVING SUPERNATANT MATTER SKIMMED BY A MECH. CONVEYOR. AN AV. 37-56PERCENT REDN. OF OIL AND TAR CONC. TO RESIDUAL 74-58 PPM IS ACHIEVED AT THE OPTIMUM IMPELLER SPEED OF 730 RPM AND FLOW RATE OF 18-20 M³ HR CHAMBER WITH A CORRESPONDING AIR TO LIQ. RATIO OF 5.5-8.5. THE OPTIMUM RATE OF MECH. SKIMMING IS 1.2 M-MIN.

UNCLASSIFIED

Current Sources

USSR

UDC 621.362.2

LIDORENKO, N. S., LEBEDEV, V. F., SIMONOV, V. A.

"High-Reliability Thermoelectric Batteries"

Izvestiya Akademii Nauk SSSR, Energetika i Transport, No 6, 1971, pp 99-104.

ABSTRACT: A study is made of a thermoelectric packet type battery without insulation, in which the insulation units are replaced with connecting pipes having high electrical resistance. The effectiveness of this design was evaluated by comparing the integral current in the primary circuit of the battery with the parasitic current leaks through the connecting pipes. These currents were determined from the electrical field of the heat conductor, which was determined in turn from the LaPlace equation with boundary conditions found using supplementary electrical analogues. Practical recommendations are given for the production of similar batteries. A photograph and cross-sectional drawing of such a battery are presented. The leakage current in the thermal batteries was found to be 4-6% of the current passing through the elements. The distribution of potential in each junction indicated that there were no circulating currents in each half-element. The energy characteristics of these batteries depend significantly on the thickness of the walls and pipe lengths. As wall thickness is increased from 0.1 to 0.7-0.8 mm, current leaks increase in proportion to the ratio of cross-sectional areas.

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General

USSR

SIMONOV, PAVEL, Professor

"contacts Which Give Off Sparks (Certain General Problems of Physiology of the Brain, Psychology, and Ethics)"

Moscow, Novyy Mir, No 9, 1971, pp 188-205

Abstract: For many years the fields of physiology and ethics existed and worked far from one another, and the contradiction between the deterministic outlook of the former and the necessity of free choice in the latter was not a matter of concern. Contemporary problems have raised this question, however, especially the problems of education and upbringing. The usual view of Soviet Physiology was first expressed by Sechenov, who said that human behavior is 0.1% inborn traits and 99.9% taught "in the broad sense of the word." This has been generally accepted that homeostasis and self-preservation describe the state to which man is constantly striving, and they determine his behavior. But ethics and moral responsibility cannot tolerate the idea that behavior is determined, for then how can one be held to blame? The answer to this apparent contradiction would seem to lie in deeper study of the basic elements which make up human behavior, thought, emotion, and will. However, as suggested by the writing of Marx and Engels, human needs may provide the key to understanding behavior. In this respect the work of

1/3

USSR

SIMONOV, P., *Novyy Mir*, No 9, 1971, pp 188--205

Fedor Dostoevski again shows its profundity, for he understood the role of needs and offered a useful classification of them (which, by the way, is close to Hegel's). They saw basically three kinds of needs: physical; group or social; and philosophical or moral (an answer to the question "Why?"). In the study of needs, a great deal of interesting material has been produced by observations of animals in their natural environments. Most significant are the numerous and clearly-expressed non-homeostatic behavior patterns that have been discovered. In addition, the role of the group (or society) and the individual's place in it appear very graphically in certain studies of animal behavior. Three specific responses noted in animals that appear very relevant to understanding elementary needs are (1) the investigative urge or attraction to novelty, (2) the desire to overcome obstacles just "because they are there," (this can be called the "freedom response"), and (3) reaction to signs of distress made by other members of the species, to the point of disregarding one's own safety or selfish interests, which can be seen as the rudimentary form of altruism. One more thing that the study of animal behavior makes clear is that individual differences are very substantial, resulting from both position within the group and from inborn traits. There can be no question that the "tabula rasa" theory of newborn babies is incorrect; such traits as curiosity, imitation, caution, and others appear in

2/3

- 96 -

USSR

SIMONOV, P., *Novyy Mir*, No 9, 1971, pp 188-205

differing degrees immediately. Finally, we arrive at a general conception of behavior as resulting from needs which are reflected in emotions and consciousness and directed, in some sense, by the will. A useful analogy in understanding the role of the will is that of the car battery. The will sets the organism in motion and then is recharged by it as action progresses. As I. P. Pavlov put it, in the area of brain physiology the mountain of the unknown remains incomparably larger than the kernels of knowledge we have attained. But the pursuit of knowledge goes on, because the ancient wisdom "Know thyself" has never sounded more urgently than in our day.

1/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--CONDITIONED AVOIDANCE REACTIONS TO A PAIN STIMULATION OF ANOTHER ANIMAL -U-

AUTHOR--(02)-PREOBRAZHENSAYA, L.A., SIMONOV, P.V.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 2, PP 379-385

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PAIN, CONDITIONED REFLEX, RAT, DOG, MONKEY, ELECTRIC CURRENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1988/1702

STEP NO--UR/0247/70/020/002/0379/0385

CIRC ACCESSION NO--AP0106444

UNCLASSIFIED

2/2 020

CIRC ACCESSION NO--AP0106444

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTS ON TWELVE RATS AND THREE DOGS WERE AIMED AT ELABORATING AN AVOIDANCE RESPONSE TO A PAIN STIMULATION OF ANOTHER ANIMAL OF THE SAME SPECIES. THE REACTION OF THE RATS CONSISTED IN RUNNING TO A CERTAIN COMPARTMENT OF THE CAGE, AND OF THE DOGS, IN LIFTING THE LEFT FOREPAW WITH A LEVER ATTACHED TO IT TO DISCONNECT THE ELECTRIC CIRCUIT. THE AVOIDANCE REACTION COULD BE ELABORATED IN FOUR RATS AND ONE DOG WHICH HAD NEVER EXPERIENCED AN ELECTRIC STIMULATION. IN FIVE RATS THE REACTION APPEARED ONLY WHEN THEY HAD BEEN PREVIOUSLY USED AS "VICTIMS". THE RATS WHICH ELABORATED THE AVOIDANCE REACTION WITHOUT PRELIMINARILY EXPERIENCING THE ACTION OF THE CURRENT, ARE CHARACTERIZED BY A HIGH ACTIVITY IN "THE OPEN FIELD", VERY FEW DEFECATIONS AND URINATIONS AND THE ABSENCE OF ATTACKS IN RESPONSE TO ELECTRIC STIMULATION, I. E. BY A WEAK AGGRESSIVENESS. A CONCLUSION HAS BEEN DRAWN THAT SOME OF THE ANIMALS ACTIVELY TRY TO INTERRUPT OR PREVENT THE ACTION OF THE SIGNALS COMING FROM THE ANIMAL STIMULATED BY CURRENT (VOCAL REACTIONS, MOTOR EXCITATION, ETC.). SENSITIVITY TO SUCH SIGNALS DEPENDS ON THE ANIMAL'S INDIVIDUAL FEATURES TO A GREATER EXTENT THAN ON THE PHYLOGENETIC LEVEL (A RAT, A DOG, A MONKEY) AND APPARENTLY REPRESENTS AN INDEPENDENT LINE OF EVOLUTION.

FACILITY: INSTITUTE OF HIGHER NERVOUS ACTIVITY AND NEUROPHYSIOLOGY, USSR ACADEMY OF SCIENCES, MOSCOW.

UNCLASSIFIED

1/2 020

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--STATUS, PROSPECTS AND ORGANIZATION OF RESEARCH ON HIGHER NERVOUS
ACTIVITY IN MAN -U-

AUTHOR--SIMONOV, P.V.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 1, 1970 PAGES
16-22

DATE PUBLISHED-----70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, BIOLOGICAL AND MEDICAL
SCIENCES

TOPIC TAGS--NEUROPHYSIOLOGY, BRAIN, PSYCHOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAPE--3003/0966

STEP NO--UR/0243/70/025/001/0016/0022

CIRC ACCESSION NO--AP0130020

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--APCL30020
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE ISSUE INCLUDED IN THE HEADING OF THIS ARTICLE SHOULD BE DISCUSSED IN THE LIGHT OF THE CHANGES THAT HAVE OCCURRED IN THIS SCIENCE IN THE LAST 20 YEARS. IN THE EARLY 1950'S, THERE WAS AN UNDESIRABLE TREND TO SEPARATE THEORY OF HIGHER NERVOUS ACTIVITY FROM BOTH EXPERIMENTAL PSYCHOLOGY AND GENERAL NEUROPHYSIOLOGY OF THE BRAIN. FOR EXAMPLE, THE CONCEPTS OF "EXCITATION" AND "INHIBITION IN GENERAL" WHICH ARE BASIC TO THIS THEORY BECAME INCREASINGLY HARD TO COMPARE WITH CONCRETE NEUROPHYSIOLOGICAL DATA PERTAINING TO THE DIVERSE MECHANISMS OF EXCITATION AND INHIBITIONS OF NEURONS, SPECIALIZED SUBCORTICAL STRUCTURES WITH A PRIMARILY ACTIVATING OF DEACTIVATING (INHIBITORY) INFLUENCE ON THE HIGHER BRANCHES OF THE BRAIN. THE SWITCHOVER, IN ALMOST ALL OF THE PHYSIOLOGICAL INSTITUTIONS, TO INVESTIGATION OF CONDITIONED REFLEXES WAS NOT ASSOCIATED WITH PENETRATION INTO THE DEEP BASES OF HIGHER NERVOUS ACTIVITY, WHILE GENERAL NEUROPHYSICAL RESEARCH BEGAN TO LAG VISIBLY FROM THE LEVEL OF INTERNATIONAL SCIENCE. FACILITY: INSTITUTE OF HIGHER NERVOUS ACTIVITY AND NEUROPHYSIOLOGY, USSR ACADEMY OF MEDICAL SCIENCES, MOSCOW.

UNCLASSIFIED

USSR

UDC: 532.593

KOZIN, N. S. and SIMONOV, V. A., Novosibirsk

"Interaction of a Shock Wave With a Wedge-Shaped Cavity"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 9, No 4, Jul-Aug 73, pp 551-558

Abstract: The authors study the theoretical and experimental aspects of a problem associated with the incidence of a shock wave on a wedge-shaped cavity in metal. Formulas are derived which make it possible to calculate the free surface form of the wedge-shaped cavity at some moment in time t . The solution to the problem on the collapse of the wedge-shaped cavity appears to be self-similar, since the characteristic linear dimension does not enter into the determining parameters. It is shown that the nature of the change in wave length is close to self-similar with a dependence on the distance x and with a nonlinear dependence on the angle γ . Wave amplitude change is more complex. Flow with jet formations is studied. It is shown that the constant thickness of the jet makes it possible to conclude that the jet is formed by metal particles which are located in a narrow surface layer of constant thickness. Metal ductility is most likely responsible for stabilizing the dimension of this layer. A Reynolds number is given for the collapse process in the event that the viscosity factor is the determining parameter.

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USSR

UDC 621.565.83:428.84

GANIN, YE. A., KARICHEV, Z. R., LEBEDEV, V. F., RATNER, V. M., RAYETSKIY, A. S.,
SIMONOV, V. A.

"Experimental Thermoelectric Air Conditioner"

Moscow, Kholodil'naya tekhnika, No. 9, Sep 71, pp 12-15

Abstract: The thermoelectric room air conditioner developed by the authors that has thermobatteries with a coaxial flow of heat and electric current is described. The air conditioner consists of a thermoelectric battery unit, a power supply unit, and a system for automatically maintaining a given temperature level. Air conditioning occurs in the thermoelectric battery unit where the air is heated, cooled and cleaned of dust depending on the operating regime of the batteries. Air from the room is pumped through the battery unit as a result of rarefaction produced by a turbine fan and again enters the room. The hot junctions of the air conditioner are cooled by tap water. The thermoelectric battery unit consists of 24 batteries which are fastened in a circle on two bands of brackets forming a complete cylinder, with the internal diameter connected with the input opening of the turbine. The semiconducting materials of the thermocouples were the ternary alloys Bi Te Sb and Bi Te Se which are widely used in thermo-

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USSR

GANIN, YE. A., et al, Kholodil'naya tekhnika, No. 9, Sep 71, pp 12-15

electric refrigeration devices. The power supply of the thermobatteries was 220 amp and was chosen on the basis of their maximum cold productivity which was 90-100 kcal/hr. Tests showed that for a water temperature of 20°C and an air temperature of 25°C, the refrigeration capacity of the air conditioner was about 2200 kcal/hr. This required a power of 3.2 kW and the air was cooled in the conditioner to 9°C. When the air conditioner was used as a heat pump, tests showed that for temperatures of the cooling order of 6°C and air temperatures of 12°C, the amount of heat obtained was approximately 3100 kcal/hr. The air conditioner weighed about 100 kg. It is noted that despite the greater requirement for electrical energy as compared with compression air conditioners, the cost of using thermoelectric conditioners may be lower since the necessity for expensive maintenance and capital repairs is avoided.

CSO: 1861-W

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- 148 -

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UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--IMPROVING PUBLIC HEALTH ECONOMICS -U-

AUTHOR--(03)-KURIYANOV, M.K., GALITSKAYA, YE.P., SIMONOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--GDR'KIY; MOSCOW, SOVETSKOYE ZDRAVOOKHRANENIYE, RUSSIAN, NO 3, 1970, PP 14-17

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--PUBLIC HEALTH, ECONOMIC DEVELOPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3005/C673

STEP NO--UR/0753/70/000/003/0014/0017

CIRC ACCESSION NO--AP0132796

UNCLASSIFIED

2/2 015

CIRC ACCESSION NO--AP0132796
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

OUT IN OUR COUNTRY ALSO AFFECTS THERAPEUTIC AND PREVENTIVE MEDICAL ESTABLISHMENTS TO A CONSIDERABLE EXTENT. IN ACCORDANCE WITH ORDER NO 265 OF THE MINISTER OF HEALTH USSR, DATED 31 MARCH 1967, AN EXPERIMENT IS BEING CONDUCTED IN A NUMBER OF MEDICAL ESTABLISHMENTS INVOLVING EXPANSION OF THE RIGHTS OF THEIR DIRECTORS AND INTRODUCTION OF THE PRINCIPLES OF ECONOMIC INCENTIVES TO STIMULATE THE WORK OF PERSONNEL DIRECTED TOWARD RAISING THE QUALITY AND EFFECTIVENESS OF MEDICAL SERVICE, TOWARD DISCOVERY OF INTERNAL POTENTIAL IN USE OF THE WORK OF MEDICAL PERSONNEL, IN EXPENDITURE OF FINANCIAL AND MATERIAL RESOURCES, AND ALSO CREATION OF A FUND FOR MATERIAL INCENTIVES OF STAFF MEMBERS FOR THE HIGH QUALITY OF THEIR WORK.

UNCLASSIFIED

USSR

SIMONOV, V. D., GERASIMOVA, A. I., POLUEKTOVA, Z. M., et al.,

"Analytical Method for the Reaction Mixture of the Condensation Stage in Production of Phenoxyacetic Acid"

V sb Khim. sredstva zashchity rast. (Chemical Plant Protective Agents) Moscow vyp 3, 1973, pp 144-148 (from RZh-Khimiya, No 20, Oct 73, Abstract No 20N520)

Translation: The quantitative determination method for phenol (I) and phenoxyacetic acid (II) is based on potentiometric titration in a nonaqueous medium. Initially I and II are extracted from the reaction mixture by a solvent mixture of Et₂O and dibutylphthalate (85:15). DMFA was the best solvent for the titration, the titrating agent consisted of 0.1 N solution of tetraethylammonium hydroxide in isopropyl alcohol. A blank run performed under analogous conditions determined the content of free amines present in DMFA. The relative error in determining II in artificial mixtures is $\pm 1\%$, of the phenol $\pm 7\%$.

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USSR

UDC: 632.95

SIMONOV, V. D., IVANOV, A. V., ZAYNAGABUTDINOV, S. A., KRASHE-
NINNOKOVA, O. S., Ufa Affiliate of the All-Union Scientific
Research Institute of Chemical Agents for Plant Protection

"A Method of Making Tetrachloroglutaconic Acid and Tetrachloro-
-4-Cyclopentene-1,3-Dione"

USSR Author's Certificate No 345125, filed 14 Sep 70, published
9 Aug 72 (from RZh-Khimiya, No 10, May 73, abstract No 10N583P
by N. V. Lebedeva)

Translation: Tetrachloroglutaconic acid (I) and tetrachloro-4-cyclopentadione-
-1,3 (II) are synthesized by reacting octachlorocyclopentene (III) or hexa-
chlorocyclopentene with Cl_2 in HSO_3Cl at $100-150^\circ C$. Example: Cl_2 is bubbled
through a mixture of 1 mole of III and 4 moles of HSO_3Cl at a rate of 30
1/hr with the application 1 of heat at $145^\circ C$ for 10 hours; after cooling the
reaction mass is poured over ice and filtered, giving 0.455 mole of I,
melting point $107-8^\circ C$ (chloroform). An organic layer (127 g) is treated with
200 g or 100% H_2SO_4 , the mixture is held for 7 hours at $105^\circ C$, poured over
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USSR

SIMONOV, V. D., et al., USSR Author's Certificate No 345125, filed 14 Sep 70,
published 9 Aug 72

ice and filtered, yielding 0.4 mole of II, melting point 64-5°C (heptane).
Compounds I and II can be used as fungicides, herbicides, and also in the
synthesis of unsaturated self-quenching polyester resins.

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- 37 -

USSR

UDC 632.95

SIMONOV, V. D., CHERNOVA, L. N., YASHAN, YA. B.

"Method of Obtaining Perchlorated Cyclic Hydroxyketonitriles"

USSR Author's Certificate No 301323, filed 15 Dec 69, published 9 Jul 71 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6N547)

Translation: The biologically active compound -- 2,3-dichloro-5-cyano-2-cyclopenten-1-ol-4-one (I) -- is obtained by the reaction of perchlorated cyclopentenedione containing a dichloromethylene group with excess gaseous NH_3 in an organic solvent. The gaseous NH_3 was passed with mixing for 30 minutes into a solution of 2.46 grams of 2,3-dichloro-5-(dichloromethylene)-2-cyclopentene-1,4-dione in 70 ml of C_6H_6 . The precipitate was filtered, washed with C_6H_6 and dried; then it was dissolved in 15 ml of 10% HCl (acid) and extracted with ether. The ether extracts were dried over $CaCl_2$, evaporated and 2.45 grams of I was isolated, melting point of 53-6° (after recrystallization from the $CHCl_3$ /ether, melting point of 56.5-58°), and a molecular weight of 500-520 (titration with alkali and cryoscopy in dioxane). On dehydration, the I-enol converts to the ketone form with a melting point of 118-120°. I is well soluble in water (pH 1.5). It forms salts with NH_3 , Et_3N and metals.

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USSR

UDC 632.95

STONOV, L. D., SERGEYEVA, T. A., ~~SINONOV, V. D.~~ SHOGAN, S. M., RADTSEV,
V. S., and TITOVA, L. M.

"Yalan -- New Herbicide for Control of Echinochloa Weeds in Rice Plantings
and Wild Oats in Wheat Plantings"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection
of works), Vyp 1, Moscow, 1970, pp 174-179 (from RZh-Khimiya, No 13, 10 Jul 72,
Abstract No 13N518 by T. A. Belyayeva)

Translation: Yalan (I) is a highly effective soil herbicide for the control
of millet weeds in rice plantings. Tests have been made of a 60-percent
emulsion concentrate and a 10% granulated preparation of I. The herbicidal
action of I in the soil persists for 50-100 days. Before rice is planted,
I is applied and worked in by harrow in doses of 2-6 kg/ha. For wild-oat
control, I is applied in doses of 3-6 kg/ha before wheat is planted.

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USSR

UDC 632.95

SIMONOV, V. D., IVANOV, A. V., and TSYPLEKOV, A. A.

"A Means of Obtaining Tetrachloromuconic Acid"

USSR Author's Certificate No 307079, filed 8 Sept 69, published 10 Sept 71
(from Referativnyy Zhurnal -- Khimiya, No 10(II), 1972, Abstract No 10N506
by T. A. Belyayeva)

Translation: Tetrachloromuconic acid (I), melting point $204-6^{\circ}$, is obtained by oxidation of decachloro-1,5-hexadiene (II) or decachloro-2,4-hexadiene concentration H_2SO_4 at $110-115^{\circ}$ for 4-5 hours. A mixture of 42.7g II and 200 g 93.3% H_2SO_4 is kept for 4-5 hours at 110° , the reaction mass is poured into water at $20-30^{\circ}$ (volume of water = 0.5 the volume of the reaction mass), filtered, and the precipitate is washed with $CHCl_3$, obtaining 23 g I, which is dissolved in ether and purified with activated carbon. The solution is then dried over $MgSO_4$, evaporated and the residue is recrystallized from a mixture of ether and benzene. Molecular weight of the dimethyl ester of I is 306.

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- 79 -

USSR

SIMONOV, V. D., SHAKIROVA, A. M., and SAVKOVA, N. Ya.

"Reaction of 3,4-Chloroaniline with Certain Chlorocarboxylic Acids"

Dokl. Neftikhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. O-va im. D. I. Mendeleeva [Works of Petrochemical Section, Vashkir Republic Administration of All-Union Chemical Society imeni D. I. Mendeleev], Vol 6, 1971, pp 362-364. (Translated from Referativnyy Zhurnal Khimiya, No 5, Moscow, 1972, Abstract No 5N675 by G. V. Kuznetsova)

Translation: The reaction of 3,4-Cl₂C₆H₃NH₂ (I) with chlorocarboxylic acids is studied. When equimolar quantities of I and ClCH₂COOH or MeCHCl COOH are boiled in PhMe with azeotropic removal of water for 10 hours, the corresponding anilides were produced: 3,4-Cl₂C₆H₃NHCOCH₂Cl, C₈H₆Cl₃NO, mp 100-1° (iso-C₈H₂₀); and 3,4-Cl₂C₆H₃NHCOCHClMe, C₉H₈Cl₃NO, yield 49.4%, mp 123-4° (iso C₈H₂₀). The anilide is not formed of I and pentachloropentadienic acid under similar conditions, but only the 3,4-dichloroaniline salt of the acid, C₁₁H₆Cl₇NO₂, was produced, yield 73.6%, mp. 101.5-2.5° (benzene). CCl₂=CClCOOH reacts similarly, producing the 3,4-dichloroaniline salt, C₉H₆Cl₅NO₂, yield 34.6%, mp 115-8° (benzene). 3,4-Cl₂C₆H₃N=CHCl=CClCONHC₆H₃Cl₂-3,4, C₁₆H₇Cl₃N₂O, is produced, mp 223°. The anilides and salts produced are potential herbicides.

1/1

USSR

SIMONOV, V. D., GAZIZOV, R. T., IVANOV, A. V.

"Synthesis of Cyclical Perchlorinated Pentenes"

Dokl. Neftikhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. O-va im. D. I. Mendeleeva, [Works of Petrochemical Section, Vashkir Republic Administration of All-Union Chemical Society imeni D. I. Mendeleev], Vol 6, 1971, pp 317-319. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4N684 by T. A. Belyeva).

Translation: A method is developed for production of octachlorocyclopentene (I) initiated by chlorination of hexachlorocyclopentadiene (II) or octachloro-1, 3-pentadiene in a medium of HSO_2Cl (III). Cl_2 is passed (22.3 l/hr) through a mixture of 81.9 g II and 140 g III at about 20° for 5 hrs. The temperature of the reaction mixture is $40-45^\circ$. It is cooled to $+10^\circ$ and I is filtered off, mp $37-8^\circ$. 8.16 g of hexachlorofulvene is treated with 26.4 g III at $0\pm 2^\circ$ for 80 minutes, producing 10 g of percholoromethylene- Δ^3 -cyclopentene.

1/1

USSR

SIMONOV, V. D., GAZIZOV, R. T., MAMINA, F. A., SHARIF'YANOVA, L. N.
"Chromatographic Determination of Cyclical Carbon Chlorides and Their Carbo-
cyclical Derivatives"

Dokl. Neftikhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. O-va im. D. I.
Mendeleeva, [Works of Petrochemical Section, Vashkir Republic Administration
of All-Union Chemical Society imeni D. I. Mendeleev], Vol 6, 1971, pp 320-323.
(Translated from Referativnyy Zhur-al Khimiya, No 4, Moscow, 1972, Abstract No
4N652 by I. A. Revel'skiy).

Translation: A mixture of thymol, perchloromethylene-3-cyclopentene, hexa-
cholofulvene, 2, 3, 4, 4-tetracholoro-5-dichloromethylene-2-cyclo-1-pentenone
and 2, 3-dichloro-5-dichloromethylene-2-cyclo-1, 4-pentenedione is separated
by GLC with a heat conductivity detector on a combined glass column (160+20x
0.4 cm), the first section of which contains silanized celite 545 with 15%
polyethylene glycoladipate, while the second contains the same carrier with
10% type SE-30 methyl silicone, at a temperature of 190° and a He gas carrier
rate of 90 ml per minute.

1/1

USSR

SIMONOV, V. D., IVANOV, A. V., GAZIZOV, R. T., NEDEL'CHENKO, V. M., KHRENOVA,
N. N.

"Method of Producing Octachlorocyclopentene"

USSR Author's Certificate No 303312, filed 6/01/69, published 28/06/71.
(Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No
4N591P by T. A. Belyaeva).

Translation: Octachlorocyclopentene (I), intermediate product for synthesis
of pesticides, is produced by chlorination of hexachlorocyclopentadiene (II)
or octachloropentadiene in a medium of chlorosulfonic acid (III) at a tempera-
ture of 40-45°. Cl₂ gas is passed through a mixture of 81.9 g II and 140 g
III for 5 hr at 40-45°, gas temperature about 20° (2.3 l/hr). It is then cooled
to 10°, filtered, the precipitate is washed with water, dried in air, producing
I, m. p. 37-8°. III is returned to the process.

1/1

USSR

SIMONOV, V. D., VORONOV, A. A.

"Use of Clatrate Compounds of Urea with Surfactants in the Production of Pesticides"

Dokl. Neftikhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. O-va im. D. I. Mendeleyeva, [Works of Petrochemical Section, Vashkir Republic Administration of All-Union Chemical Society imeni D. I. Mendeleyev], Vol 6, 1971, pp 326-329. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4N648 by S. E. Lyubarskaya).

Translation: The introduction of paste surfactants as clatrates (I) with urea to powdered pesticide preperates facilitates mixing and improves the distribution of surfactants in the preparate (stability factor of aqueous suspensions constant). I of surfactants with the formula $R(OCH_2CH_2)_nOH$ (II) (R=mono or dialkylphenol, n is number of oxy groups) and urea (III) with a ratio II:III=1:2-3 (n=7-10) is produced by mixing II with III cold, then fusing 1-1.5 hr at 135-40°, mixing at this temperature 1-1.5 hr, cooling and holding until solidified. Best for mixing are I containing up to 20% surfactants (solidify in 2-3 days). I were used for preparation of 50% wetting powders of methaldehyde, EF-1 fungicide and pyramine.

- 53 -

USSR

SIMONOV, V. D., SEMENOV, V. A., FOMINYKH, M. V.

"Polarographic Determination of Tetrachloromuconic Acid Isomers"

Dokl. Neftikhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. O-va im. D. I. Mendeleeva, [Works of Petrochemical Section, Vashkir Republic Administration of All-Union Chemical Society imeni d. I. Mendeleev], Vol 6, 1971, pp 339-345. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4N694 by N. S. Ivanova).

Translation: Polarographic studies of cis-cis (I) and trans-trans (II) isomers of tetrachloromuconic acid in different electrolytes (0.1 n. HClO_4 and 0.1 M LiCl) showed: a) I is more easily reduced than II; b) di-ME I is adsorbed more easily than di-ME II. A method is suggested for polarographic analysis of II in the reaction mass as it is produced.

1/1

USSR

SIMONOV, V. D., IVANOV, V. I.

"The Economic Factor in Determining Optimal Chlorination Conditions"

Dokl. Neftekhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. o-va im. D. I. Mendeleeva [Reports of Petrochemical Section, Bashkir Republic Administration of All-Union Chemical Society imeni D. I. Mendeleev], No 6, 1971, pp 295-300 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3N586 by N. S. Ivanova).

Translation: A dependence is concluded for processes of exhaustive chlorination of C_4 and C_5 hydrocarbons in an acid fluidized bed, particularly for the process of production of hexachlorobutadiene, relating the cost of the product with the degree of conversion of the material and the height of the reactor.

1/1

- 85 -

USSR

UDC 632.95

BASHKINOV, YU. A., BAKUMENKO, L. A., MEL'NIKOV, N. N., SVETLOVA, P. I.,
STONOV, L. D., SIMONOV, V. D., SHVINDLERMAN, G. S., SHCHERBAYAN, YU. I.

"Meturin -- a New Herbicide for Cotton and Potatoes"

V sb. Khim. sredstva zashchity rast. (Chemical Agents for Plant Protection --
collection of works), vyp. 1, Moscow, 1970, pp 179-187 (from RZh-Khimiya,
No 11, Jun 72, Abstract No 111446)

Translation: A new herbicide -- meturin (I) (N-phenyl-N-hydroxy-N'-methylurea)
-- was synthesized. The compound can be produced with a high yield by
reacting phenylhydroxylamine with K_2CO_3 . Treatment of vegetating plants with
I is not highly effective. The best results are obtained when the herbicide
is introduced into the soil before planting. As a rule, dicotyledons are
more effectively suppressed by I than monocotyledons. Highly sensitive to
I (70-100% inhibition of growth from a dose of 0.5 kg/hectare) are corn may-
weed, sheep sorrel, wild beets, pigweed, wild rice, buckwheat, soybeans,
tomatoes, cabbage, cucumbers, radishes, clover and alfalfa. Sensitive to I
(70-100% death from a dose of 1.5 kg/hectare) are field pennycress, field
wintercress, barley grass, beans, vetch, carrots, beets and flax. Moderately
sensitive (complete control with a dose of 3 kg/hectare) are oats, wheat, corn

1/2

- 41 -

USSR

BASKAKOV, YU. A., et al., V sb. Khim. sredstva zashchity rast., vyp 1,
Moscow, 1970, pp 179-187

beans, seed onions, and sunflowers. Rough snakeweed is among the weeds resistant to I, while potatoes and cotton are resistant crops. The compound retains high activity throughout the entire vegetative period in the upper layer of soil (0-5 cm). The activity of the herbicide begins to decline within 2 months after introduction in the lower and middle layers of soil. In doses of 3-4.5 kg/hectare, I destroyed 70-90% of the annual weeds in cotton fields, but in some instances caused temporary chlorosis in a dose of 4.5 kg/hectare. In potato fields, the compound in doses from 2 to 3 kg/hectare destroyed annual weeds throughout the entire season, which meant that potatoes could be grown without hilling. The compound has low toxicity for human beings. It is authorized in the Soviet Union for experimental production use on potatoes.

2/2

USSR

UDC 632.95

SIMONOV, V. D. MAMINA, F. A., GERASIMOVA, A. I., ALYAMKIN, YU. N., AKHUNOV, T. F., and VYAZOVKINA, G. I.

"Determination of the Basic Substance in Herbicidal Preparations of Yalan"

V sb. Probl. analit. khimii (Collection of Works: Problems of Analytical Chemistry), Vol 2, Moscow, Nauka, 1972, pp 138-142 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, No 23(II), 1972, Abstract No 23N449 by T. A. Belyayeva)

Translation: The application of gas chromatography, spectroscopic, and titrimetric methods to determination of the basic substance in the oil emulsion and granulated preparations of yalan was evaluated. Using a thermal conductivity detector, the gas chromatography is carried out at the column temperature of 190°C, with the gas carrier (H_2) flow rate of 240 ml./min. Heat-insulating silanized brick is used the solid phase apiezon M with stearic acid is used as an immobile liquid phase. The relative error of determination does not exceed 3.4%. A study of the IR yalan spectra and of accompanying components indicated that the band 1412 cm^{-1} can be used successfully. The titrimetric method is based on the hydrolysis of S-ethyl N-hexamethylenethiocarbamate at 130°C in the presence of 85% orthophosphoric acid followed by determination of the imine formed with the acid-alkaline titration (0.1 N solution of H_2SO_4 with methyl red indicator). The determination error does not exceed 1.6%.

1/1

USSR

UDC 629.7.036.3:533.6

VALUYEV, N. I., DINEYEV, Yu. N., SIMONOV, V. I.

"Some Results of an Experimental Study of the Operation of a Small-Scale Axial Turbine With a Bladeless Nozzle Device"

Sb. nauch. tr. Kiyev. in-t inzh. grazhd. aviatsii (Collection of Scientific Works of Kiev Institute of Civil Aviation Engineers), 1971, No. 2, pp 120-122 (from RZh - 34. Aviatsionnyye i raketnyye dvigateli, No 9, Sep 72, Abstract No 9.34.59)

Translation: Comparative results are presented on tests of two small-scale axial turbines with bladeless nozzle devices and having the same mode and geometrical parameters but differing in the shape of the flow-through portion of the spiral chambers. 3 ill., 3 ref. Resume.

1/1

1/2 - 033 UNCLASSIFIED PROCESSING DATE--18SEP70
TITL---TECHNOLOGICAL TREATMENT OF A MOLTEN METAL BY POWDERED MATERIAL -U-

AUTHOR-(05)-SIMONOV, V.I., KOSYREV, L.K., FILIPPOV, A.F., PRYANISHIKOV,
I.S., KABANOVA, N.F.
COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UNCHEB. ZAVED., CHERN. METAL. 1970, 13(1) 52-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LIQUID METAL, CALCIUM FLUORIDE, CALCIUM OXIDE, PHOSPHORUS
CONTAINING ALLOY, STEEL, POWDER METAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0962

STEP NO--UR/0148/70/013/001/0052/0055

CIRC ACCESSION NO--AT0105831

UNCLASSIFIED

2/2 * 033

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0105831

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPHOSPHORIZATION OF STEEL CONTG. P 0.03-0.1, C 0.12-1.09, AND MN 0.07-0.15 WT. PERCENT WAS CARRIED OUT IN A 40 KG INDOCTION FURNACE WITH BASIC CRUCIBLE BY MEANS OF A POWDER OF CAO AND CAF SUB2 (RATIOS 9:1, 4:1, AND 3:1) BLOWN THROUGH THE MOLTEN METAL IN A GAS SUSPENSION. NO INCREASE IN N OR O CONTENT WAS OBSD.; ON THE CONTRARY, THE GAS CONTENT OF THE METAL DECREASED DURING THE BLOWING WITH THE POWDERS. THE BEST DEPHOSPHORIZATION CONDITIONS WITH CAO-CAF SUB2 MIXTS. OCCURRED WITH THE MIXT. CAO:CAF SUB2 EQUALS 4:1 AND THE WORST AT A RATIO 3:1. THE ADDN. OF FEO TO THESE MIXTS. DID NOT INCREASE THE DEPHOSPHORIZATION DEGREE; HOWEVER, THE REPLACEMENT OF A PART OF THE CAO BY BAO IMPROVED THE DEPHOSPHORIZATION, SO THAT WITH CAO-BAO-CAF SUB2 EQUALS 3:1:1 THE FINAL P. CONC. WAS 0.008-0.005 WT. PERCENT.

UNCLASSIFIED

USSR

UDC 548.736.6

RASTSVETAYEVA, R. K., ~~SITONOV, V. I.~~, and ACADEMICIAN BELOV, N. V., Institute of Crystallography, USSR Academy of Sciences, Moscow

"Crystal Structure of Lomonosovite $\text{Na}_5\text{Ti}_2[\text{Si}_2\text{O}_7][\text{PO}_4]\text{O}_2$ "

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 1, 1 Mar 71, pp 81-84

Abstract: Lomonosovite was discovered in 1936 by V. I. Gerasimov. Although considerable research has been devoted to the properties of this mineral, the results have remained largely unsatisfactory. The present research resulted in only slightly changed parameters for the triclinic unit cell of lomonosovite: $a = 5.44$, $b = 7.163$, $c = 14.83$ Å, $\alpha = 99^\circ$, $\beta = 105^\circ$, and $\gamma = 90^\circ$. The authors describe the structure of lomonosovite in detail and illustrate schematically in two figures the projection of the lomonosovite structure on the zz and yz planes in Pauling polyhedra. They describe the leaching out of lomonosovite and the problems involved therein. The basic structure of lomonosovite places it in the same series as several other minerals, but it differs from these minerals with respect to filling of the space between the walls. 2 figures, 1 table, bibliography of 17 titles.

1/1

USSR

UDC 548.735.46

GOLYSHEV, V. M., SEMONOV, V. I., and BELOV, N. V., Institute of Crystallography,
USSR Academy of Sciences

"Symmetry of Functions Separating the Structure From the Patterson Distribution"

Moscow, Kristallografiya, Vol 16, No 4, Jul-Aug 71, pp 703-707

Abstract: The authors have compiled tables of symmetry groups of functions separating the second rank as a function of symmetry of functions of interatomic vectors and type of displacement vector. They show that the separation function, which is constructed by using vectors of a fixed elementary atom of the structure up to all other atoms associated with it by the elements of the group symmetry, possesses a symmetry that is no less than the symmetry of the Fedorov crystal group. Table 1 lists the symmetry of separation functions of the second rank: triclinic, monoclinic, and rhombic symmetry groups of the Patterson function. Tables 2 and 3 give the same functions of second rank, respectively, for tetragonal and hexagonal symmetry groups. Table 4 lists the cubic symmetry groups for the Patterson function of the same rank of separation functions. The article contains 4 tables and a bibliography of 6 titles.

1/1

- 35 -

Graphite

USSR

UDC 666.764.4:669.716:621.74

KARKLIT, A. K., SOKOLOV, A. N., LEBEDEVA, M. F., ZEGZHDA, V. P., Deceased,
All-Union Institute of Refractories, SIMONOV, V. N., Leningrad Plant for
Processing of Nonferrous Metals, ANDREYEV, V. F., PARTIN, I. A.,
CHEREPOK, G. V., Kuybyshev Metallurgical Plant imeni V. I. Lenin

"Graphite-Containing Products for Casting of Aluminum Alloys"

Ogneupory, No. 2, 1971, pp 13-15

Abstract: A composition and method of manufacture of graphite-containing refractory products of low heat conductivity for casting of aluminum and aluminum-based alloys have been developed. The reduction in heat conductivity is achieved by introducing asbestos to the mass and using low-temperature (700°C) roasting. The products have shown satisfactory strength in service.

1/1

USSR

SIMONOV, V. V., ANISHCHENKO, A. F., and BIKKULOV, A. Z.

"Inertness of Certain Chlorine-containing C₅-cyclic Ketones in the Reaction with Cyclopentadiene"

Dokl. Neftikhim. Seksii. Bashkir. Resp. Pravl. Vses. Khim. 0-va im. D. I. Mendeleeva [Works of Petrochemical Section, Vashkir Republic Administration of All-Union Chemical Society imeni D. I. Mendeleev], Vol 6, 1971, pp 309-312. (Translated from Referativnyy Zhurnal Khimiya, No 5, Moscow, 1972, Abstract No SN607 by T. K. Yudovskaya)

Translation: The chlorinated cyclopent-2-en-1-ones (I) [2,3,4,4,5,5-Cl₆I (a), 2,3,4,4,5-Cl₅-I (b), 2,3,4,4-Cl₄-5-(-CCl₂)-I (c), 2,3,4-Cl₃-5-(-CCl₂)-I (d)] and cyclopent-2-ene-1,4-diones (II) [for example, 2,3,5,5-Cl₄-II (a), 2,3,5-Cl₃-II (b), 2,3-Cl₂-II (c)], are inert in the reaction with cyclopentadiene when it is performed in boiling C₆H₆, PhMe and xylene at atmospheric pressure, while Ia, IIa, Ic, and IIc do not react even at high pressures and temperatures of 180-200°. It is assumed that this inertness results from spatial effects.

1/1

USSR

UDC

SIMONOV, V. V., ANISHCHENKO, A. F., BIKKULOV, A. Z.

"Interaction of Certain C₅-Cyclical Chlorocarbons with Cyclopentadiene"

Dokl Neftekhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. O-va Im., D. I. Mendeleeva, [Works of Petrochemical Section of Bashkir Republic Administration of All-Union Chemical Society imeni D. I. Mendeleev], Vol 6, 1971, pp 313-316. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4H584, by S. Ye Lyubarskaya).

Translation: It was established in a study of the reaction of cyclopentadiene (CPD) with three dienophils -- hexachlorofulvene (I), octachlorocyclopentene (II) and perchloromethylene- Δ^3 -cyclopentene (III) that II and III under the conditions studied do not react with CPD. I, when boiled in C₆H₆ (10 hr) forms an adduct (IV), m. p. 122-3° (ethanol). Two structures are assumed for IV, based on reaction I as a dienophil. The possibility of reaction I as a diene like the behavior of hexachlorocyclopentadiene in the reaction with CPD is improbable, since I forms no adduct with maleic anhydride under various conditions. The structure of 4 is not established.

1/1

58

USSR

UDC: 541.15+539.163

~~SIMONOV, YE. E.~~, Department of Radiochemistry, Moscow State University;
Institute of Physical Chemistry, Academy of Sciences USSR

"Hot Synthesis" of Tritiated Aminoacids"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, no. 6,
vol. 11, Nov-Dec 70, pp 739-740

Abstract: A study has been made of the dependence of the radiochemical yield of aminoacid on irradiation time, on the basis of an optimum ratio of components being irradiated (parent substance-lithium salt). The specimens, containing a mixture of glutamic acid and lithium carbonate, were irradiated with a flux of slow neutrons at $0.87 \cdot 10^{-13} \text{cm}^{-2} \cdot \text{sec}^{-1}$ for 15 min and 1, 7, 15, 50 and 100 hours. From the data shown it follows that the changes in radiation conservation and specific activity are of an exponential nature and that irradiation time affects to a greater degree the radiation conservation than the specific activity of glutamic acid. As a result, maximum radiochemical yield of glutamic acid will be attained at irradiation within the time interval of 1-15 hours. It should be noted, however, that the optimum irradiation time range may vary depending on the structure of the aminoacid. In that case the determining factor will be the radiation.

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USSR

SIMONOV, YE. F., Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, No 6, Vol 11, Nov-Dec 70, pp 739-740

resistance of the parent molecule and space factors in bombardment of C-H bonds by the tritium atoms. The radiolysis spectra of simple aminoacids, as a rule, reveals alanine in quantities comparable and sometimes exceeding that of the parent substance. In irradiating ornithine for seven hours with a flux of $2 \cdot 10^{12}$ neut./cm²·sec, its conservation was only 13%, while the yield of α -alanine was 44.5% and that of α -aminobutyric acid -- 25.4%. The specific activities were 0.20; 0.35 and 0.36 microcurie/mg, respectively. "Hot synthesis" of tritiated aminoacids has serious limitations, with respect to irradiation time, which prevents the emergence of the high specific activities of the parent compound. Its suitability for use is defined by the impossibility or an undue complexity of making the aminoacids by conventional chemical synthesis.

2/2

1/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--ACTIVITY OF CERTAIN BLOOD SERUM ENZYMES IN RATS DURING A PROLONGED
HYPOKINESIA -U-

AUTHOR--(02)-SIMONOV, YE.YE., FEDUROV, I.V.

S

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL. 4, JAN.--FEB. 1970, P.
16-18

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYPODYNAMIA, BLOOD SERUM, ENZYME ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0065

STEP NO--UR/0453/70/004/000/0016/0018

CIRC ACCESSION NO--AP0119061

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119061

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE ACTIVITY OF GLUTAMATE ASPARAGIN AND GLUTAMATE ALANINE AMINOTRANSFERASES, KETOGLUCOSE-6-PHOSPHATE ALDOSE, LACTATE DIHYDROGENASE, AND NONSPECIFIC CHOLINE ESTERASE IN THE BLOOD SERUM OF A GROUP OF 39 WHITE RATS SUBJECTED FOR 1, 15 AND 60 DAYS OF HYPOKINESIA. THE ACTIVITY OF ALL THESE ENZYMES WAS HIGHER IN EXPERIMENTAL RATS THAN IN CONTROL RATS DURING THE EARLY STAGE OF HYPOKINESIA AND CONTINUED TO INCREASE (AMINOTRANSFERASES) OR DECREASED (THE REST OF ENZYMES) DURING THE LATER STAGE OF THE EXPERIMENT. THEORIES ARE PROPOSED TO EXPLAIN THESE OBSERVATIONS.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CRYSTAL STRUCTURE OF ANHYDROUS COPPER PROPIONATE -U-
AUTHOR--(02)-SIMONOV, YU.A., MALINOVSKIY, T.I. S
COUNTRY OF INFO--USSR
SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 370-1
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CRYSTAL STRUCTURE, ORGANOCOPPER COMPOUND, COPPER COMPLEX
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/1409 STEP NO--UR/0070/70/015/002/0370/0371
CIRC ACCESSION NO--AP0116856
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116856

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANHYD. CU(MECH SUB2 COO) SUB2
FORMS DARK GREEN PRISMS WITH CLEAVAGE PLANES ALONG THE (001) AND (010)
PLANES AND LATTICE PARAMETERS ALPHA 5.19, B 8.58, AND C 9.69 PLUS OR
MINUS 0.05 ANGSTROM, ALPHA 87DEGREES 50 PRIME, BETA 90DEGREES, GAMMA
75DEGREES. 50 PRIME PLUS OR MINUS 30 PRIME; EQUALS 1.71, THE UNIT CELL
CONTAINS 2 MOLS. OF CU(MECH SUB2 NEGATIVE COO) SUB2, AND 4 O ATOMS OF 4
CARBOXYL GROUPS AROUND CU. THE SLIGHTLY DISTORTED SQUARE DEVIATES BY
DELTA SUB01 EQUALS MINUS 0.007, DELTA SUB2 EQUALS MINUS 0.00 SUB3, DELTA
SUB03 EQUALS 0.00 SUB3, AND DELTA SUB04 EQUALS 0.000 ANGSTROM FROM THE
PLANE 3.68X MINUS 3.99Y PLUS 4.45Z PLUS 5.03 EQUALS 0. THE 5TH NEIGHBOR
OF CU, O(3), COMPLETES THE COORDINATION OF CU BONDED WITH THE BASAL
CENTER OF INVERSION AT POINTS ONE HALF, 1, 0, AND FORMS WITH THE 1ST CU
ATOM A 2,NUCLEI COMPLEX. FACILITY: INST. PRIKL. FIZ., KISHINEV,
USSR.

UNCLASSIFIED

Acc. Nr.

AT0050275

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code

UR0020

S

104916f Structure of the complex anion $[\text{Co}(\text{SO}_3)_2(\text{NH}_3)_2]^-$.
 Ablov, A. V.; Landa, L. I.; ~~Simonov, V. A.~~; Malinovskii,
 T. I.; Tovbis, A. B. (Inst. Khim., Kishinev, USSR). *Dokl.*
Akad. Nauk SSSR 1970, 190(3), 5-9-81 [Chem] (Russ). X-ray
 anal. of the dark-brown form of $\text{NH}_4[\text{Co}(\text{SO}_3)_2(\text{NH}_3)_2] \cdot 3\text{H}_2\text{O}$ indi-
 cates that the SO_3 groups are in the cis-position and are bonded
 to the Co atom through S. The interat. distances and valence
 angles are tabulated. C. J. Steinberg

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Organophosphorous Compounds

USSR

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"A New Kind of Stereoisomerism in trans-Dioximines of Cobalt (III) With
Triphenylphosphine and Triphenylstibine"

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Abstract: In an earlier publication it was reported that triphenylphosphine,
triphenylarsine, and triphenylstibine can easily replace water in trans-
acidoaquadioximines of cobalt (III) forming compounds $\left[\text{CoX}(\text{DH})_2\text{EPh}_3 \right]$
where X = Cl, Br, or I, and E = P, As or Sb. Furthermore, it was shown that
these products occur as mixtures of two modifications. This paper covers
x-ray diffraction studies of such compounds. The experimental results
obtained show that cobalt (III) dioximines exhibit an unique case of stereoi-
somerism. Both modifications are in trans-configuration; in one case two
chelate units DH are located in a plane, in the other the DH chelate
planes are at an angle to each other, the cobalt atom being moved out of the
center of the octahedron.

1/1