"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR

STRUCHKOV, M. I., Institute of Higher Nervous Activity and Neurophysiology, Moscow

UDC 612

"Direct and Feedback Conditioned Associations"

Moscow, Uspekhi Fiziologicheskikh Nauk, Vol 4, No 2, 1973, pp 26-41

Abstract: A survey is made of the literature on the formation of direct and feedback conditioned association with the presentation and comparison of the author's experimental data. A study is made of the problem of the nature of feedback conditioned association and its role in the conditioned reflex activity of animals. The problem of the role of feedback association in the organization and realization of motivated behavior is stated. The physiological mechanism for the formation of conditioned association is considered as the mechanism of simultaneous formation of direct and feedback conditioned associations.

Recordings are presented for direct and feedback conditioned associations when developing a conditioned reflex in dogs with the combination of food with the movement of a paw in the food → movement stimulation sequence. The electromyograms for the direct and feedback conditioned association in the movement → food reflex and the unconditioned reflex switching of feedback are also given. Primary emphasis is placed on the concepts of E. A. Asratyan, who is a proponent of the extension of the idea of the ring movement of excitation

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USSR

STRUCHKOV, M. I., Uspekhi Fiziologicheskikh Nauk, Vol 4, No 2, 1973, pp 26-41

in the central nervous system to its higher division (the cerebral cortex) so that the central part of the conditioned reflex arc is represented in the form of a nerve ring. It is proposed that the primary physiological mechanism of the organization of behavior and the control of it is the mechanism of the formation of direct and feedback conditioned associations where the physiological process initiating the chain of behavioral acts is activation of the feedback conditioned association.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

1/2 019 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--GASTROSCOPY IN THE DIAGNOSIS OF GASTROINTESTINAL HEMORRHAGES -U-

AUTHOR-(05)-STRUCHKOV, V.I., SOKOLOV, L.K., LUTSEVICH, E.V., BELOV, I.N., RYSHIKOV, V.N.

COUNTRY OF INFO--USSR

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SOURCE--KHIRURGIYA, 1970, NR 3, PP 59-64

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIAGNOSTIC METHODS, HEMORRAGE, BIOPSY, DIGESTIVE SYSTEM DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1320 STEP NO--UR/0531/70/000/003/0059/0064

CIRC ACCESSION NO--AP0054204

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

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UNCLASSIFIED

CIRC ACCESSION NO--AP0054204 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS CARRIED OUT GASTROSCOPIC INVESTIGATION IN 101 PATIENTS SUFFERING FROM GASTROINTESTINAL HEMORRHAGE OF DIVERSE ETIOLOGY. AN EARLY COMPLEX (CLINICO ROENTGENO ENDOSCOPIC) INVESTIGATION ENABLED TO REVEAL THE ORIGIN OF HEMORRHAGE IN 92 PATIENTS. ONLY ENDOSCOPICALLY THE SOURCE OF HEMORRHAGE WAS DISCLOSED IN 36 CASES. OF PARTICULAR IMPORTANCE ARE INVESTIGATIONS INVOLVING THE EMPLOYMENT OF NEW DESIGNS OF GASTROFIBROSCOPES WITH A DEVICE FOR CONTROLLED FLEXION OF THE DISTAL END OF THE APPARATUS AND AIMED BIOPSY. THE AUTHORS ARE OF THE OPINION THAT THE DATA DERIVED ARE PROOF OF THE EXPEDIENCY AND EFFECTIVENESS OF USING EMERGENCY GASTROSCOPY AT THE PEAK OF GASTROINTESTINAL HEMORRHAGE OR AT EARLY PERIODS AFTER ITS CESSATION. THE REFERRED TO EXPERIENCE TESTIFIES TO THE FACT THAT GASTROSCOPY IN GASTRIC HEMORRHAGE DOES NOT AGGRAVATE THE STATE OF PATIENTS. THE HAZARD OF GASTROSCOPY IN HEMORRHAGES IS EXAGERATED.

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USSR

UDC 539.26

GUSEV, A. I., ALEKSANDROV, G. G., and STRUCHKOV, Yu. T., Institute of Metal Organic Compounds, Academy of Sciences USSR

"Crystalline and Molecular Structure of Hydrido-Formiato-tris-(triphenylphosphine)ruthenium (II) -- $(H)Ru(OOCH)(PPh_3)_3$"

Moscow, Zhurnal Strukturnoy Khimii, Vol 14, No 4, Jul/Aug 73, pp 685-691

Abstract: The x-ray structural analysis was carried out of the complexes $(H)Ru\cdot(OOCH)(PPh_3)_3$ which crystallized in monoclinic syngony a = 20.272, b = 14.260, c = 20.944 Å, β = 122°46', Z = 4. The Ru atom exhibits a highly skewed octahedral coordination. The formate ligand is coordinated by two O atoms, one of which -- O (I) -- is located trans to the hydride H atom, which could not be identified by x-ray. The distance Ru-O(I) of 2.29 Å is greater than the distance R-O(2) of 2.23 Å to the second oxygen atom, trans located to the P (3) of the triphenylphosphine ligand. The distance Ru-P(3) of 2.274 Å in its turn is considerably smaller than the distance Ru-P(1) and Ru-P(2) 2.350 and 2.364 Å to the P atoms of the other two triphenylphosphine ligands in trans position to each other.

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USSR

KALININ, A. YE., GUSEV, A. I., and STRUCHKOV, YU. T., Institute of Organoelemental Compounds, Academy of Sciences USSR

UDC 548.737

"The Crystal and Molecular Structure of bis-(Dithioformate)-bis-(triphenylphosphine)ruthenium (II)"

Moscow, Zhurnal Strukturnoy Khimii, Vol 14, No 5, Sep-Oct 73, pp 859-867

Abstract: An x-ray diffraction structural study of the complex $Ru(S_2CH)_2(PPh_3)_2$ was carried out. This complex crystallizes in the monoclinic system with a = 11.651, b = 17.388, c = 18.376 Å; γ = 114.47°, Z = 4, spatial group R $2_1/b$. The coordination of Ru with the four S atoms of the S_2CH ligands and the two P atoms of the PPh_3 ligands, which are located in a cis-position to each other, is of the distorted octahedral type. The S_2CH ligands form four-membered chelate rings with the Ru atoms. The lengths of the Ru-P bonds (2.344 and 2.336 Å) coincide within the limits of the precision of measurements, while the Ru-S bonds in a trans-position to the P atoms (2.448 and 2.450 Å) are significantly longer than those in a trans-position to each other (2.383 and 2.391 Å). The compound studied was synthesized by T. S. Lobeyevam I. S. Kolomnikov, and M, ye, Vol'pin at the Institute of Organoelemental Compounds by reacting $H_2Ru(PPh_3)_4$ or $HRu(O_2CH)(PPh_3)_3$ with CS_2.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

Organometallic Compounds

USSR

UDC 548.737

KUZ'MINA, L. G., BOKIY, N. G., STRUCHKOV, YU. T., ARUTYUNYAN, A. V., RYBIN, L. V., and RYBINSKAYA, M. I., Institute of Metalorganic Compounds, Academy of Sciences USSR

"Structure of 3,6-Duphenylpyridazino-diferrum-triphenylphosphine-pentacarbonyl"

Moscow, Zhurnal Strukturnoy Khimii, Vol 12, No 5, Sep-Oct 71, pp 875-882

Abstract: To determine objectively the structure of diarylpyridazine complexes with iron carbonyls, a complete roentgenographic analysis of the monophosphine complex $[(C_6H_5)_2C_4H_2N_1] \cdot [Fe_2P\cdot(C_6H_5)_3(CO)_5]$ was carried out. The binuclear molecule contains $Fe(CO)_3$ and $Fe(CO)_2PPh_3$ groups connected with a Fe-Fe bond and two nitrogen bridge atoms of the pyridazine moiety. Fe atoms are of the octahedral coordination, they are highly strained due to the formation of tetrahedral cluster system Fe_2N_2. The crystals are monoclinic with a= 23.98, b = 18.34, c= 8.39 Å β = 107°20', and and N = 4. The structure was obtained by the heavy atom method and refined by the least squares method to R = 12%. The pyridine ring acts as a diazo-bridge between two iron atoms also connected by the metal- metal bond. The most interesting bond lengths are: Fe-Fe = 2.53; N-N = 1.43; Fe-N = 1.92 Å. 1/1

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UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 008

TITLE--ELECTRON DIFFRACTION STUDY OF THE MOLECULAR STRUCTURE OF TRIMETHYLCYCLOPENTADIENYLSILANE -U-

AUTHOR-(05)-VENYAMINOV, N.N., USTYNYUK, YU.A., ALEKSEEV, N.V., RONOVA, I.A., STRUCHKOV, YU.T.

COUNTRY OF INFO--USSR

SOURCE--ORGANOMETAL. CHEM. 1970, 22(3), 551-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRON DIFFRACTION ANALYSIS, MOLECULAR STRUCTURE, CYCLIC GROUP, ORGANIC SILANE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--NE/0000/70/022/003/0551/0555

PROXY REEL/FRAME--2000/1981

CIRC ACCESSION NO--AP0125570

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125570

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOL. STRUCTURE OF TRIMETHYLCYCLOPENTADIENYLSILANE, C SUB5 H SUB5 SIME SUB3, HAS BEEN STUDIED BY ELECTRON DIFFRACTION IN THE VAPOR PHASE. THE SI ATOM IS BONDED BY THE LOCALIZED SIGMA BOND WITH ONE OF THE CYCLOPENTADIENYL CARBON ATOMS. THE SI-C BOND DISTANCES ARE 1.90 ANGSTROM. THE CYCLOPENTADIENYL RING HAS AN "ENVELOPE" CONFORMATION, THE DIHEDRAL ANGLE BETWEEN PLANAR 4 AND 3-MEMBERED FRAGMENTS OF THE RING BEING 22DEGREES. THE SI-C BOND MAKES AN ANGLE OF 56DEGREES WITH THE PLANE OF THE BENT OUT "ENVELOPE FLAP". ASSUMING THE QUALITY OF ALL C-H BOND LENGTHS AND ALSO OF THREE C-C BOND LENGTHS WITHIN THE PLANAR 4-MEMBERED FRAGMENT OF THE CYCLOPENTADIENYL RING, THE FOLLOWING VALUES ARE OBTAINED: GAMMA(C-H) EQUALS 1.11, GAMMA(C-C) EQUALS 1.53, GAMMA(C:C) EQUALS 1.40 ANGSTROM.

FACILITY: INST. ORG.-ELEM. COMPD., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--ELECTRON DIFFRACTION STUDY OF THE STRUCTURE OF (CH SUB3)SUB3 NEGATIVE GEC SUB5 H SUB5 CYCLOPENTADIENYLTRIMETHYLGERMANIUM -U-

AUTHOR-(05)-USTYNYUK, YU.A., STRUCHKOV, YU.T., ALEKSEYEV, N.V., VENYAMINOV, N.N., RONOVA, I.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 127-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRON DIFFRACTION ANALYSIS, GERMANIUM COMPOUND, MOLECULAR STRUCTURE, COMPLEX COMPOUND, CYCLIC GROUP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0315 STEP NO--UR/0192/70/011/001/0127/0129

CIRC ACCESSION NO--AP0103970

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

2/2 009

UNCLASSIFIED

CIRC ACCESSION NO--AP0103970 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTRON DIFFRACTION INVESTIGATION OF THE TITLE COMPD. SHOWED THAT THE STRUCTURE CONTAINS A LOCALIZED SIGMA GE-C BOND BETWEEN THE C SUB5 H SUB5 RING AND THE GEME SUB3 GROUP. THE GE ATOM HAS TETRAHEDRAL ENVIRONMENT, WITH 4 EQUAL GE-C BONDS (1.97 ANGSTROM EACH) AND LIES IN A SYMMETRY PLANE OF THE C SUB5 H SUB5 RING. THE C SUB5 H SUB5 RING IS NOT PLANAR. ONE C ATOM LIES IN A PLANE FORMING A DIHEDRAL ANGLE OF 24 PLUS OR MINUS 4DEGREES TO THE PLANE OF OTHER FOUR C ATOMS, WHICH FORM A BUTADIENE LIKE GROUPING. THE GE-C BOND FORMS AN ANGLE OF 52 PLUS OR MINUS 4DEGREES TO THE PLANE CC(GE)C, THE THREE C ATOMS BEING A FRAGMENT OF THE C SUB5 H SUB5 RING. THE C-C BOND LENGTHS IN THE C SUB5 H SUB5 RING ARE 1.50 AND 1.46 ANGSTROM.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--CRYSTAL AND MOLECULAR STRUCTURE OF PI COMPLEXES OF GROUP V TRANSITION METALS WITH ACETYLENE LIGANDS. IV. BIS (CARBONYL PI

AUTHOR-(03)-GLUSEV, A.I., KIRILOVA, N.I., STRUCHKOV, YU.T.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 62-70

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTAL STRUCTURE, MOLECULAR STRUCTURE, COMPLEX COMPOUND, ACETYLENE, NIOBIUM COMPOUND, X RAY STUDY, PARAMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0447 STEP NO--UR/0192/70/011/001/0062/0070

CIRC ACCESSION NO--AP0104060

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

2/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104060

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLETE X RAY ANAL. OF THE STRUCTURE OF THE TITLE BI NUCLEAR COMPLEX IS CONDUCTED. THE STRUCTURE IS INTERPRETED BY THE HEAVY ATOM METHOD AND MADE MORE PRECISE BY THE METHOD OF LEAST SQUARES IN ISOTROPIC APPROXN., R EQUALS 11.3PERCENT. THE GEOMETRY OF THE MOL. AND THE CHARACTER OF THE COORDINATION OF THE BRIDGE ACETYLENE LIGANDS IS PRACTICALLY NO DIFFERENT FROM THAT FOUND EARLIER IN THE COMPLEX ((PI C SUB5 H SUB5)NB(CO)(PH SUB2 C SUB2)) SUB2. THE GEOMETRIC PARAMETERS ARE COMPARED OF THE COORDINATED TRIPLE BOND AND ITS FREQUENCIES IN PI ACETYLENE COMPLEXES OF NB. C. J. STEINBERG.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STRUCTURE OF PI OLEFINIC AND PI ACETYLENIC COMPLEXES OF TRANSITION METALS -U-

AUTHOR-(02)-GUSEV, A.I., STRUCHKOV, YU.T.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(2), 368-400

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKENE, ACETYLENE HYDROCARBON, COMPLEX COMPOUND, X RAY STUDY, TRANSITION METAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605018/811 STEP NO--UR/0192/70/011/002/0368/0400

CIRC ACCESSION NO--AP0140799

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

2/2 017

UNCLASSIFIED

CIRC ACCESSION NO--AP0140799 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW THROUGH 1969, INCLUDING THE RESULTS OF X RAY DETNS., WITH 114 REFS.

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

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

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TITLE--CRYSTAL AND MOLECULAR STRUCTURE OF PI COMPLEXES OF GROUP V TRANSITION METALS WITH ACETYLENE LIGANDS. IV. BIS (CARBONYL PI

PROCESSING DATE--18SEP70

AUTHOR-(03)-GLUSEV, A.I., KIRILOVA, N.I., STRUCHKOV, YU.T.

COUNTRY OF INFO--USSR

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SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 62-70

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTAL STRUCTURE, MOLECULAR STRUCTURE, COMPLEX COMPOUND, ACETYLENE, NIOBIUM COMPOUND, X RAY STUDY, PARAMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0447

STEP NO--UR/0192/70/011/001/0062/0070

CIRC ACCESSION NO--AP0104060

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2/2 022 UNCLASSIFIED

CIRC ACCESSION NO--AP0104060 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLETE X RAY ANAL. OF THE STRUCTURE OF THE TITLE BI NUCLEAR COMPLEX IS CONDUCTED. THE STRUCTURE IS INTERPRETED BY THE HEAVY ATOM METHOD AND MADE MORE PRECISE BY THE METHOD OF LEAST SQUARES IN ISOTROPIC APPROXN., R EQUALS 11.3PERCENT. THE GEOMETRY OF THE MOL. AND THE CHARACTER OF THE COORDINATION OF THE BRIDGE ACETYLENE LIGANDS IS PRACTICALLY NO DIFFERENT FROM THAT FOUND EARLIER IN THE COMPLEX ((PI C SUB5 H SUB5)NB(CO)(PH SUB2 C SUB2)) SUB2. THE GEOMETRIC PARAMETERS ARE COMPARED OF THE COORDINATED TRIPLE BOND AND ITS FREQUENCIES IN PI ACETYLENE COMPLEXES OF NB. C. J. STEINBERG.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

UNCLASSIFIED

TITLE--CRYSTAL STRUCTURE OF A COMPLEX OF GERMANIUM DICHLORIDE WITH 1,4,DIOXANE -U-

PROCESSING DATE--11SEP70

AUTHOR--KULISHOV, V.I., BOKIY, N.G., STRUCHKOV, YU.T., NEFEDOV, O.M., KOLESNIKOV, S.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 71-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTAL STRUCTURE, GERMANIUM COMPOUND, COMPLEX COMPOUND, DIOXANE, X RAY STUDY, CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0316

STEP NO--UR/0192/70/011/001/0071/0074

CIRC ACCESSION NO--AP0103971

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

2/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103971

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CRYSTAL STRUCTURE OF THE COMPLEX OF GECL SUB2 WITH 1,4,DIOXANE, GECL SUB2 TIMES C SUB4 H SUB8 O SUB2, IS DETD. BY MEANS OF 3 DIMENSIONAL X RAY DATA. THE CRYSTALS BELONG TO THE MONOCLINIC SYSTEM, A 7.59, B 11.72, C 8.85 ANGSTROMS, BETA EQUALS 96.3DEGREES, ZETA EQUALS 4, AND SPACE GROUP IS CC. THE CRYSTAL IS MADE UP OF ENDLESS CHAINS...-GECL SUB2-OC SUB4 H SUB8 O), BETWEEN WHICH ONLY VAN DER WAALS INTERACTION EXISTS. THE GE ATOM FORMS TWO NORMAL ELECTRON BONDS WITH ATOMS OF CL (GE-CL DISTANCES OF 2.25 AND 2.28 ANGSTROMS, CL-GE-CL-ANGLE EQUALS 94.6DEGREES) AND ITS VACANT THIRD P,ORBITAL INTERACTS WITH TWO ATOMS OF O (GE-O DISTANCES OF 2.41 AND 2.48 ANGSTROMS).

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Acc. Nr. AP0041405 S

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Ref. Code UK 0000

71799q Structure of the product from reaction of an equimolar mixture of 1- and 2-bromomethylnaphthalenes with ennea-carbonyldiiron. A new π-complex with a trimethylenemethane-type ligand. Nesmeyanov, A. N.; Astakhova, I. S.; Zol'nikova, G. P.; Kritskaya, I. I.; Struchkov, Yu. T. (Inst. Org.-Elem. Comp., Moscow, USSR). J. Chem. Soc. D 1970, (2), 85 (Eng). X-ray diffraction study shows that the reaction product of an equimol. mixt. of 1- and 2-bromomethylnaphthalenes with $Fe(CO)_9$ is a π-complex with a trimethylenemethane ligand, which constitutes a part of the 2-naphthylmethyl group, the latter being alkylated in the 4-position of its coordinated benzene ring by the 1-naphthylmethyl radical, which does not participate in coordination with the Fe. The complex is monoclinic with space group $P2_1/c$ with cell dimensions a 8.36, b 17.63, c 13.73 Å, β 95°, d. 1.40, and $Z = 4$.

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REEL/FRAME 19751270

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1/2 022

UNCLASSIFIED

TITLE--CRYSTAL AND MOLECULAR STRUCTURE OF PI COMPLEXES OF GROUP V TRANSITION METALS WITH ACETYLENE LIGANDS. IV. BIS (CARBONYL PI

PROCESSING DATE--18SEP70

AUTHOR-(03)-GLUSEV, A.I., KIRILOVA, N.I., STRUCHKOV, YU.T.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 62-70

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTAL STRUCTURE, MOLECULAR STRUCTURE, COMPLEX COMPOUND, ACETYLENE, NIOBIUM COMPOUND, X RAY STUDY, PARAMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0447

STEP NO--UR/0192/70/011/001/0062/0070

CIRC ACCESSION NO--AP0104060

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

2/2 022

CIRC ACCESSION NO--AP0104060 UNCLASSIFIED PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLETE X RAY ANAL. OF THE STRUCTURE OF THE TITLE BI NUCLEAR COMPLEX IS CONDUCTED. THE STRUCTURE IS INTERPRETED BY THE HEAVY ATOM METHOD AND MADE MORE PRECISE BY THE METHOD OF LEAST SQUARES IN ISOTROPIC APPROXN., R EQUALS 11.3PERCENT. THE GEOMETRY OF THE MOL. AND THE CHARACTER OF THE COORDINATION OF THE BRIDGE ACETYLENE LIGANDS IS PRACTICALLY NO DIFFERENT FROM THAT FOUND EARLIER IN THE COMPLEX ((PI C SUB5 H SUB5)NB(CO)(PH SUB2 C SUB2)) SUB2. THE GEOMETRIC PARAMETERS ARE COMPARED OF THE COORDINATED TRIPLE BOND AND ITS FREQUENCIES IN PI ACETYLENE COMPLEXES OF NB. C. J. STEINBERG.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

Hematology

3

UDC 615.381.011.3:532.13

USSR

KAVESHNIKOV, A. I., SETT, A. V., URATKOV, Ye. F., ORLOV, Ye. S., STRUCHKOVA, K. I., POLUSHINA, T. V., and SUSOVA, G. M., Department of Experimental Traumatology and Orthopedics, Central Institute of Traumatology and Orthopedics, Ministry of Health USSR, and Laboratory of Blood Substitutes and Fractionation of Blood Proteins, Central Institute of Hematology and Blood Transfusion, Moscow

"Changes in the Viscosity of Blood After Dilution with Different Blood Substitutes Under Hypothermia Conditions"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 70-75

Abstract: Changes in the viscosity of blood were studied after dilution at different temperatures with the following solutions: Ringer Locke, glucose, polyglucine [form of dextran], rheopolyglucine, low-molecular weight dextran, and polyvinylpyrrolidone. The tabulated results can be used as a basis for selecting a blood substitute and degree of blood dilution in

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USSR

KAVESHNIKOV, A. I., et al., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 70-75

relation to perfusion temperature. A mathematical formula is proposed for calculating the viscosity of the solution in blood dilution in relation to the hematocrit index, temperature and viscosity of the blood substitute. It is concluded that in case of normothermal perfusion or slight chilling, any of the solutions studied can be used. But under low-temperature conditions, when water moves from the interstitial and intracellular spaces, it is preferable to use rheopolyglucine, low-molecular-weight dextran, or low-molecular-weight polyvinylpyrrolidone because they decrease the viscosity of the perfusate more than the others.

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Nitrogen Compounds

UDC 632.95

USSR

FOKIN, A. V., KOLOMIYETS, A. F., STUDNEV, YU. N., and RAPKIN, A. I.

"Process for the Preparation of the β-Rhodanine Ethyl Esters of Carboxylic Acids"

USSR Author's Certificate No 350-783, filed 30 Jul 70, published 20 Sep 72 (from Referativnyy Zhurnal -- Khimiya, No 11(II), 1973, Abstract No 11N579P by T. A. Belyayeva)

Translation: A process is described for the preparation of the β-rhodanine ethyl esters of carboxylic acids by the reaction of trimethyl- β-rhodanethoxysilane (I) with an acyl halide at 0-120° in an organic solvent. For example, 7.2 g of FClCHCOCl are added 8.8 g of (I), heated with the simultaneous distilling of tri-methylchlorosilane and yielding 9.6 g of the β-rhodanine ethyl ether of fluorochloroacetic acid. The boiling point is 109-110°C/1 mm, the $n^{20}D$ is 1.4821, d_4^{20} is 1.4180. 5.4 g of the trimethylchlorosilane is added to a suspension of 5.3 g of KSCN in 35 ml of acetone, stirred at about 20° for two hours, to which is added 2.6 g of ethylene oxide. The reaction mixture is allowed to sit for 1 hour; the excess ethylene oxide is removed; the mixture is filtered and 6.3 g of $KClCH_2COCl$ is added to the filtrate. It is then allowed to sit for 1 hour at 20°. 8.3 g of the β-rodane

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR

FOKIN, A. V., et al., USSR Author's Certificate No 350783, filed 30 Jul 70, published 20 Sep 72

ethyl ethers of monochloroacetic acid is separated. The product has a boiling point of 119° at 1 mm, $n^{20}D$ of 1.5125 and a d_4^{20} of 1.3857. The following compounds were also prepared. The numbers given are the boiling point in °C/mm or the freezing point in °C, the $n^{20}D$, and d_4^{20}; $MeC(O)CH_2CH_2SCN$, 72 - 3/1, 1.4765, 1.1891; $2,4\text{-}Cl_2C_6H_3OCH_2C(O)OCH_2SCH$, 35 - 6, -, -; $CCl_3C(O)OCH_2CH_2SCN$, 44 - 5, -, -; $CF_3C(O)OCH_2CH_2SCN$, 93 - 4/9, 1.4174, 1.4160; $CF_3CF_2CF_2C(O)OCH_2CH_2SCN$, 84 - 5, -, -; and $PhC(O)OCH_2CH_2SCN$, 137 - 8/1, 1.5631, 1.1960.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

UDC: 51

USSR

STRUGATSKIY, Yu. M.

"Investigation and Solution of a System of Linear Inequalities on a Computer in the Case of an Arbitrary Second Member (Fundamental Chernikov Contraction)"

Tr. TsNII stroit. konstruktsiy (Works of the Central Scientific Research Institute of Structural Elements), 1971, vyp. 20, pp 17-27 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V523)

Translation: A computer algorithm is presented for a certain modification of the well known method of S. N. Chernikov.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

UDC: 621.793.5

USSR

ZIL'BERFARB, M. I. (deceased), ALEKSEYEV, S. N., GRISHKO, A. G., and STRUGOVA, Yu. N., Scientific Research Institute of Concrete and Reinforced Concrete

"Corrosion Resistance of Zinc-Aluminum Coatings Obtained From Melts"

Moscow, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 621-622

Abstract: The object of this study was the corrosion resistance of zinc-aluminum coatings under atmospheric conditions in alkali media imitating conditions of corrosion in concrete. The base material was 08 kp cold-rolled steel after recrystallization annealing in a bell furnace and temper rolling. The surface preparation technology comprised degreasing with gasoline and a magnesium oxide paste followed by washing with cold water, etching in hydrochloric acid (150-170 g/l), rinsing with cold water, pickling in a mixture of H_2SO_4 (150 g/l) and HCl (50 g/l) for 10 seconds, rinsing with running water, fluxing by dipping in an aqueous solution (g/l) of $ZnCl_2$ 614, NH_4Cl 76, OP-7 1-2; temperature of the solution

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USSR

ZIL'BERFARB, M. I. (deceased), et al, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 621-622

60-80°C, holding time 10 seconds, drying for 1 minute at 150-250°C; dipping the specimens in a zinc melt containing 0.2-5% aluminum; holding time in the melt 20 seconds, melt temperature 450°C. The coating thickness was measured by the increase in weight. The testing in a sulfur dioxide chamber was conducted at about 100% humidity at 60° C. SO_2 concentration was varied from 0 to 60 mg/m^3. The higher corrosion resistance of coatings with an increased aluminum content in either a sodium chloride solution, tap, or distilled wa ter is explained by the lower solubility of aluminum compounds formed on corrosion as compared to that of zinc compounds.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DISTRIBUTION OF CARBON IN THE FUSION ZONE OF DIFFERENT STEELS IN THE PRESENCE OF A STRUCTURAL HETEROGENEITY IN THE ZONE -U-

AUTHOR-(02)-GOTALSKIY, YU.N., STRUINA, T.A.

COUNTRY OF INFO--USSR

SOURCE--AVTOMAT. SVARKA 1970, 23(4), 20-4

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--AUSTENITIC STEEL, CARBON, PHYSICAL DIFFUSION, STEEL WELDING/(U)KH19N11M3 STEEL, (U)ST3 STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0296 STEP NO--UR/0125/70/023/004/0020/0024

CIRC ACCESSION NO--AP0134101

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

2/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134101

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION OF C IN THE FUSION ZONE BETWEEN THE AUSTENITIC KH19N11M3 STEEL AND SURFACED ST3 WAS INVESTIGATED BY THIN LAYER SPECTRAL ANAL. AFTER A PRELIMINARY THERMAL TREATMENT OF SPECIMENS (300 HR AT 600DEGREES). METALLOGRAPHIC OBSERVATIONS REVEAL A PRONOUNCED STRUCTURAL HETEROGENEITY IN THE FUSION ZONE THAT IS CHARACTERISTIC FOR MANY WELDED STRUCTURES CONTG. DIFFERENT STEELS. THE SPECTRAL ANAL. RESULTS CONFIRM A SUBSTANTIAL REDISTRIBUTION OF C IN THE ZONE; ITS CONCN. DECREASES IN THE NONAUSTENITIC ST3 STEEL ATTAINING A RATHER HIGH VALUE IN A THIN LAYER OF KH19N11M3 THAT IS IN CONTACT WITH ST3. WHEN EXAMG. THE C PERCENT VS. D CURVES, WHERE D IS THE DISTANCE FROM THE CONTACT INTERFACE, IT IS EVIDENT THAT THE ENERGY OF WELDING CAN SIGNIFICANTLY INFLUENCE THE REDISTRIBUTION OF C. AT HIGHER ENERGIES THE THICKNESS OF THE DECARBURIZED LAYER IN ST3 DECREASES; THIS VALID ALSO FOR THE CARBURIZED ONE IN KH19N11M3. NEVERTHELESS, THE INCREMENT IN THE CONCN. OF C IN KH19N11M3 BECOMES, IN THIS CASE, VERY SHARP. IT INDICATES THAT HIGHER WELDING ENERGIES LEAD TO SPECIAL CONDITIONS WHICH HINDER THE DIFFUSION OF C BOTH IN ST3 AND KH19N11M3. THIS PHENOMENON MIGHT BE RELATED TO AN IMPORTANT GRAIN COARSENING IN THE FUSION ZONE AT HIGHER WELDING TEMPS. WHICH LOWERS THE RATE OF GRAIN BOUNDARY DIFFUSION. FACILITY: INST. ELEKTROSVARKI IM. PATONA, KIEV, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR

UDC 621.762.4.001

STRUK, L. I.

"Principal Features of Pressing of Carbides"

Tugoplavk. karbidy [Refractory Carbides — collection of works], Kiev, Nauk, dumka Press, 1970, pp 45-51 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G394 by the author)

Translation: The process of pressing powders of the carbides of Ti, Zr, Nb, Cr, Mo, and W is studied. The dependence of density of pressed briquettes on pressure and number of successive pressing operations is studied, along with the influence of the time which the powder spends under load on the pressability of powders of the refractory compounds, the influence of the charge and content of plasticizer on the pressability, the distribution of force during pressing and extrusion pressure, and the dependence of elastic aftereffect on pressing pressure. 5 figures, 3 tables; 11 biblio. refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR UDC 621.317.331

YAREMKEVICH, S. K., SHMORGUN, Ye. I., KOCHAN, V. A., BULYGA, S. G., STRUK, R. I.

"Automatic Two-Coordinate Compensator for Resistometric Study of Steels and Special Alloys"

Kontrol'no-izmerit. Tekhnika. Resp. Mezhved. Nauch.-Tekhn. sb. [Testing and Measuring Equipment, Republic Interdepartmental Scientific and Technical Collection], 1971, No 11, pp 136-139, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract No 7.32.966).

Translation: An automatic two-coordinate compensator of accuracy class 0.05 is described, allowing graphs to be produced of the dependence of resistance of metal specimens on temperature, which is necessary for resistometric study of phase conversions in steels and special alloys. It is demonstrated that the device can measure the emf of thermocouples in the 0-70 mv range and resistances of from 10^{-5} to 25 ohm (with currents passing through the specimen of 1,000 to 0.5 a ac respectively). It is noted that the desired graph sector can be drawn in enlarged scale. 1 Figure; 7 Biblio. Refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR

UDC 621.396.6-181.5

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

"Homogeneous Computer Media and Problems of Microelectronic Realization"

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

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

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USSR

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

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

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR UDC: 621.373.8

STRUKOV, A. Z. and KHATUNTSEV, A. G.

"Independence of Subharmonic Quadrature Components in a Parametron With Balanced Modulation Pumping"

Tr. Mosk. aviats. in-ta (Transactions of the Moscow Aviation Institute) 1970, No. 215, pp 88-99 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D358)

Translation: An examination is made of small phasing signals of subharmonic frequency in a parametric oscillator with a balanced modulation pumping voltage. The initial differential equation is reduced to a shortened one in terms of the amplitudes of the subharmonic quadrature components. The value of the critical amplitude of the phasing signal as a function of the phase is found. Types of solution for quadrature subharmonic components with increased amplitude of the phasing signal are found. A schematic of the electronic modulating system is given. Five illustrations, bibliography of six. Resume

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

UDC: 621.373.8

USSR

STRUKOV, A. Z.

"Parametron Processes for Various Forms of Envelope Balance-Modulated Pumping Voltage"

Tr. Mosk. aviats. in-ta (Transactions of the Moscow Aviation Institute) 1970, No. 215, pp 61-88 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D359)

Translation: The processes in a single-tuned parametric capacitive oscillator with an envelope balance-modulated pumping voltage analytically described by a Fourier series are examined. A solution is given for the subharmonic quadrature components for small voltage amplitudes. Numerical solutions are given of a system of shortened differential equations for the subharmonic quadrature components in the high subharmonic amplitude region. Six illustrations, three tables, bibliography of eight. Resume

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR

MINAYEVA, K. A., STRUKOV, B. A., HUOANG CHUNG TKHU, Moscow State University imeni M. V. Lomonosov

"Dependence of the Fluctuation Absorption of Ultrasound on Frequency in Triglycinsulphate Single Crystals"

Leningrad, Fizika Tverdogo Tela, Vol 12, No 5, May 1970, pp 1584-1585.

Abstract: The absorption of a longitudinal ultrasonic wave propagating along the polar Y-axis was measured at frequencies of 10, 30, and 50 MHz in triglycinsulphate single crystals. The temperature of the sample was automatically stabilized with an accuracy of ±0.005°C. The results are shown in the Figure. The quantity (T-θ) is laid off along the horizontal axis, where T is the temperature of the sample and θ is the Curie temperature (θ = 49°C); the absorption coefficient of the longitudinal acoustical wave at Xy propagating along the polar Y-axis in triglycinsulphate is laid off along the vertical axis. The Figure shows that absorption sharply

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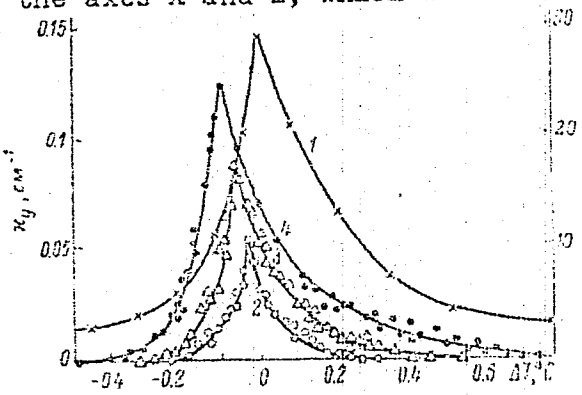
"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR

MINAYEVA, K. A., et al, Fizika Tverdogo Tela, Vol 12, No 5, May 1970, pp 1584-1585

rises close to the Curie point, and the curve $X_y(T-\theta)$ is almost symmetric relative to the absorption maximum and its shape is different from the curves $X(T-\theta)$ describing ordinary relaxation absorption along the axes X and Z, which were shown to be very non-symmetric.



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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR

MINAYEVA, K. A., et al, Fizika Tverdogo Tela, Vol 12, No 5, May 1970, pp 1584-1585

This difference in the curves indicates a difference in the physical mechanisms determining the absorption of ultrasound in these two cases. The Figure also shows the dependence of the dielectric permeability of triglycinsulphate on temperature as measured simultaneously with Xy(T-θ) on the same sample. Curves 2, 3, and 4 represent frequencies of 10, 30, and 50 MHz. The Figure shows that an increase in the frequency displaces the absorption maximum relative to the temperature θ corresponding to the maximum of the dielectric permeability. It is easy to see that the ratio of these displacements 0.024:0.060:0.108 = 1:2.5:4.5 approximately corresponds to the frequency ratio 10:30:50 = 1:3:5.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--THERMAL AND ELECTRICAL PROPERTIES OF A TRIGLYCINE SULFATE SINGLE CRYSTAL -U-

AUTHOR-(03)-TARASKIN, S.A., STRUKOV, B.A., MELESHINA, V.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1386-92

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ELECTRIC PROPERTY, TRIGLYCINE SULFATE, SINGLE CRYSTAL, ELECTRIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0925 STEP NO--UR/0181/70/012/005/1386/1392

CIRC ACCESSION NO--AP0134654

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

2/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134654

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE GIVEN OF THE MEASUREMENTS OF SP. HEAT AND DIELEC. CONST. OF SINGLE CRYSTAL TRIGLYCINE SULFATE IN THE REGION OF THE FERROELEC. PHASE TRANSITION (46.6-49.2DEGREES) IN THE CONTROL OF ITS DOMAIN STRUCTURE. THE EFFECT WAS CONSIDERED OF AN ELEC. FIELD ON SP. HEAT OF THE CRYSTALS IN THE SAME TEMP. INTERVAL. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

UNCLASSIFIED PROCESSING DATE--27NOV70

1/2 020

TITLE--FREQUENCY DEPENDENCE OF THE FLUCTUATION ABSORPTION OF ULTRASOUND IN TRIGLYCINE SULFATE SINGLE CRYSTALS -U-

AUTHOR-(03)-MINAYEVA, K.A., STRUKOV, B.A., HOANG, C.T.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1584-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ULTRASOUND ABSORPTION, TRIGLYCINE SULFATE, SINGLE CRYSTAL, DIELECTRIC CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0941 STEP NO--UR/0181/70/012/005/1584/1585

CIRC ACCESSION NO--AP0136372

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136372

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AMPLITUDE COEFF. OF ABSORPTION WAS MEASURED AT 10, 30, AND 50 MHZ BY THE IMPULSE METHOD. CLOSE TO THE CURIE POINT, ABSORPTION INCREASES SHARPLY. INCREASED FREQUENCY DISPLACES THE ABSORPTION MAX. RELATIVE TO THE MAX. DIELEC. CONST.

FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR UDC 621.382.21

VELICHKO, B. V., STRUKOV, I. A., ETKIN, V. S.

"A Procedure for Measuring the Parameters of Semiconductor Diodes Under Dynamic Conditions"

Moscow, Poluprovodnikovyye Pribory i ikh Primeneniye, No 24, Izd-vo "Sovetskoye Radio", 1970, pp 226-235

Abstract: It is shown that accounting for the modulation of conductance enables determination of the pump modulation factor of the PN junction of mixer diodes under operating conditions. A measurement installation and procedure are described for finding the dynamic parameters of varactor and mixer diodes. The method is illustrated by experimental results of measurement of the capacitance modulation factor of varactor diodes and the pump modulation factor of mixer diodes under various loads from pump harmonics and combination frequencies. It is shown that accounting for the conductance branch of the admittance vector enables measurement of dynamic parameters of both varactor and mixer semiconductor diodes under various operating conditions. Seven figures, bibliography of seven titles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

Semiconductors and Transistors

UDC 621.382.2

USSR

MIKITSEY, YA. I., PASHIN, YU. N., STRUKOV, I. A.

"Noise of Semiconductor Diodes in the Presence of a Microwave Pulse"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 10, pp 137-139 (from RZh-Elektronika i yeye primeneniye, No 3, March 1971, Abstract No 3B107)

Translation: The excess (over the thermal) noise radiation of a semiconductor device under the effect of pulsed microwave power was investigated. The investigation was conducted on germanium diffused semiconductor diodes with a breakdown voltage of 18--25 v and on silicon epitaxial semiconductor diodes with a breakdown voltage of 36 v. A highly-sensitive Dicke radiometer was employed as a noise indicator. The experimental results showed that the intensity of the excess noise radiation increases linearly with an increase of the current flowing across the semiconductor diode. With a filling frequency /chastota zapolneniya/

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR

MIKITSEY, YA. I., et al, Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh, 1970, Issue 10, pp 137-139

f = 1.8 GHz, a linear dependence of the noise power on the magnitude of the pulse current was observed for all the semiconductor diodes investigated. 3 illustration, 4 references. K.P.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR UDC 621.382.2

BABENKO, S.P., VELICHKO, B.V., DRYDO, I.M., MIKHAYLOVA, E.A., STRUKOV, I.A., ETKIN, V.S.

"Experimental Investigation Of The Frequency Dependence Of The Impedance Of A P-N Junction In A Wide Range Of Frequencies"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), No 23, Moscow, "Sov.radio," 1970, pp 297-304 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B97)

Translation: An investigation is conducted of the frequency dependence of the impedance of a p-n junction in the 10--3600 MHz frequency range. The behavior is observed of such parameters of the p-n junction as total capacitance, conductance, and the Q-factor of the excess capacitance. A comparison is given of the experimental dependences with the frequency dependence of the computed diffusion conductivity of a p-n junction with a retarding field in the base. Conclusions are made with reference to the nature of the impedance of a p-n junction. 3 ill. 1 tab. 3 ref. Author's Abstract.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

1/2 038 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--INVESTIGATION OF THE SATURATION OF A REGENERATIVE SEMICONDUCTOR PARAMETRIC AMPLIFIER IN THE CURRENT MODE -U-

AUTHOR-(03)-MANOKHIN, V.M., STRUKOV, I.A., ETKIN, V.S.

COUNTRY OF INFO--USSR

SOURCE--RADIOEKHNIKA I ELEKTRONIKA, VOL. 15, MAY 1970, P. 1068-1076

DATE PUBLISHED----MAY70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PARAMETRIC AMPLIFIER, SEMICONDUCTOR AMPLIFIER, HARMONIC ANALYSIS, ELECTRIC CONDUCTANCE, PN JUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0280 STEP NO--UR/0109/70/015/000/1068/1076

CIRC ACCESSION NO--AP0124039

UNCLASSIFIED

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2/2 038 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124039

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE SATURATION OF A REGENERATIVE SEMICONDUCTOR PARAMETRIC AMPLIFIER IN THE FORWARD CURRENT MODE OF OPERATION, ASSUMING THE ACTION OF THREE HARMONIC VOLTAGES (SIGNAL FREQUENCY, PUMPING FREQUENCY, AND THE DIFFERENCE FREQUENCY) AT THE P-N JUNCTION. THE SATURATION IN THIS MODE OF OPERATION IS CAUSED BY TWO MECHANISMS ASSOCIATED WITH (1) A CONDUCTANCE INTRODUCED IN THE PUMPING LOOP, WITH A POSITIVE ACTIVE PART, AND (2) DETUNING EFFECTS ARISING IN ALL THE LOOPS DUE TO A CHANGE IN THE PUMPING VOLTAGE LEVEL. THE DYNAMIC RANGE IN THE FORWARD CURRENT MODE IS AN ORDER OF MAGNITUDE SMALLER THAN THE RANGE IN THE BLOCKED JUNCTION MODE (AT EQUAL SMALL SIGNAL GAIN AND PUMPING POWER).

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR UDC: 621.375.7:621.382

MANOKHIN, V. M., Strukov, I. A., and Etkin, V. S.

"Investigating the Saturation of Regenerative Semiconductor Parametric Current Amplifiers"

Moscow, Radiotekhnika i Elektronika, No. 5, 1970, pp 1068-1076

Abstract: This paper investigates the saturation power of the amplifier named in the title when the amplifier is operating in the current regime. The assumption is made that three harmonic voltages -- the signal frequency, the difference frequency, and the pumping frequency -- are acting on the p-n junction. The authors begin heir analysis with the experimentally determined fact that with the application of a positive bias voltage to the p-n junction, an excess capacitance appears which is an expoential function of the applied voltage. This capacitance is in parallel with the barrier capacitance, so that the total capacitance of the two is equal to the sum of their individual capacitances. The equivalent circuit of the amplifier is given. It has three resonant circuits, each connected to the parametric diode capacitance, and each tuned to one of the three frequencies named above. A

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USSR

MANOKHIN, V. M., et al, Radiotekhnika i Elektronika, No. 5, 1970, pp 1068-1076

formula is obtained for the diode admittance in the current regime, and the barrier capacitance with saturation is computed. The authors conclude that their method for computing the saturation power of the amplifier agrees with the experimental data.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

1/3 013 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--3,(4,5,DIBROMO,2,FURYL),5,METHYLISOXAZOLE,4,CARBOXYLIC ACID AND ITS DERIVATIVES -U-

AUTHOR-(04)-KHISAMUTDINOV, G.KH., STRUKOV, I.T., SOLNSTEVA, A.A., RUDZIT, E.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(2), 21-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FURFURAL, BROMINATION, HEREROCYCLIC OXYGEN COMPOUND, ISOMER, ORGANIC AZO COMPOUND, PENICILLIN, BACTERICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0597 STEP NO--UR/0450/70/004/002/0021/0023

CIRC ACCESSION NO--AP0113484

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2/3 013 UNCLASSIFIED

CIRC ACCESSION NO--AP0113484 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. K SUB2 CO SUB3 (14G) IN 120 ML H SUB2 O AND 51.5 G POWD. I (X EQUAL CHO), M. 36-7DEGREES (PREPD. IN 41.5PERCENT YIELD BY BROMINATION OF FURFURAL) ARE ADDED WITH STIRRING TO A COOLED SOLN. OF 14 G NH SUB2 CH.HCl IN 120 ML H SUB2 O, AND THE MIXT. IS STIRRED 1.5 HR AT 35-40DEGREES AND KEPT OVERNIGHT AT ROOM TEMP. TO GIVE 90.6PERCENT ISOMER A OF I (X EQUAL CH IS TO NOH), M. 113-14DEGREES. THIS (20 G) IN 300 ML DRY C SUB6 H SUB6 IS SATD. WITH DRY HCl TO YIELD 96PERCENT ISOMER B OF I(X EQUAL CH IS TO NOH), M. 123DEGREES. A SUSPENSION OF 6.72 G OF THIS IN 40 ML ABS. ETOH IS CHLORINATED AT MINUS 10 TO MINUS 13DEGREES TO COMPLETE OXIME DISSOLN. (SIMILAR TO 1.5 HR), THE SOLN. OF I (X EQUAL CCl IS TO NOH) OBTAINED IS ADDED OVER 20 MIN WITH STIRRING TO A COOLED ETHANOLIC SOLN. OF FRESHLY PREPD. ACCHNACO SUB2 ET (FROM 50 ML ABS. ETOH, 1.53 G METALLIC NA, AND 8.9 G ACCH SUB2 CO SUB2 ET), AND THE MIXT. BROUGHT TO PH 7.5-8, STIRRED 1 HR AT MINUS 5 TO MINUS 10DEGREES, AND KEPT 45 HR AT ROOM TEMP. TO YIELD 51.2PERCENT II (Y EQUAL OET), M. 123.5-24DEGREES (PETROLEUM ETHER). THIS (1 G), 0.14 G KOH, 14 ML ETOH, AND 14 ML WATER IS REFLUXED 4 HR TO GIVE 86.4PERCENT II (Y EQUAL OH), M. 229.5-30DEGREES (AQ. ETOH). SOCl SUB2 (5 ML) AND 2 DROPS HCONME SUB2 ARE ADDED TO THE SUSPENSION OF 1.8 G OF THIS IN 30 ML C SUB6 H SUB6, AND THE MIXT. REFLUXED 4 HR TO GIVE 76.6PERCENT II (Y EQUAL Cl) (III), M. 90-1DEGREES (PETROLEUM ETHER).

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CIRC ACCESSION NO--AP0113484

ABSTRACT/EXTRACT--THIS (1 G) IN 5 ML DRY ME SUB2 CO IS ADDED STEPWISE TO A STIRRED SOLN. OF 0.64 G 6-AMINOPENICILLANIC ACID IN 18 ML 3PERCENT NAHCO SUB3, AND THE MIXT. STIRRED 3.5 HR AT 20DEGREES TO GIVE 0.34 G NA SALT OF 3-(4,5-DIBROMO-2-FURYL)-5-METHYLISOXAZOL-4-YLPENICILLIN, THE ANTIBACTERIAL ACTIVITY OF WHICH IS EXAMD. CONCD. AQ. NH SUB3 (10 ML) IS ADDED DROPWISE TO A STIRRED SOLN. OF 0.7 G III IN 20 ML DRY DIOXANE, AND THE MIXT. KEPT 30 MIN TO YIELD 83.3PERCENT II (Y EQUAL NH SUB2), M. 231-20DEGREES (ETOH). A MIXT. OF 1.85 G III AND 5 ML ABS. MEOH IS HEATED ON A BOILING WATER BATH 2 HR TO GIVE 88.5PERCENT II (Y EQUAL OME), M. 117-18DEGREES (MEOH). THIS (1 G), 0.5 ML ABS. ETOH, AND 0.3 ML N SUB2 NEGATIVE H SUB4 IS HEATED ON A BOILING WATER BATH 2 HR TO YIELD 67PERCENT II (Y EQUALS NHNH SUB2), M. 205.5-206DEGREES (ETOH).

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USSR

UDC: 546.185

DROZD, G. I., SOKAL'SKIY, M. A., STRUKOV, O. G., and IVIN, S. Z.

"Aminohalofluorophosphorans"

Leningrad, Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2396-2410

Abstract: The authors investigated the structure, thermal stability and chemical properties of the adducts $R_2NPF_2 \cdot Hlg_2$, $(R_2N)_2 \cdot PF \cdot Hlg_2$ and $R(R_2'N)PF \cdot Hlg_2$ (where Hlg = Cl, Br). These compounds are produced by interacting the corresponding fluorides of trivalent phosphorus with chlorine or bromine. In addition, the first two adducts were produced by chlorine treatment of thion derivatives $R_2NP(S)F_2$ and $R(R_2N)P(S)F$ respectively. In many instances, the resultant compounds are resistant to vacuum distillation. NMR and IR spectra indicate a pentacoordination structure (with trigonal-bipyramidal configuration of the molecules) for type $R_2NPF_2 \cdot Hlg_2$ adducts. Spectral data for the other two types of adducts are explained more satisfactorily by an ionic structure $[>PFHlg]^+ Hlg^-$.

The chlorine or bromine atoms in these compounds may be replaced by fluorine, or by dialkylamino- monoalkylamino- and S-alkyl groups with formation of the

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USSR

DROZD, G. I., et al., Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2396-2410

corresponding fluorophosphorans. Interaction of the adducts with H_2O, carboxylic acid anhydrides and ethylene oxide produces the corresponding fluorides of tetravalent phosphorus.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

1/2 021 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--EFFECTS OF SULFUR AND NITROGEN ATOMS ON THE PROPERTIES OF A PHOSPHORYL BOND -U-

AUTHOR-(03)-STRUKOV, O.G., DUBOV, S.S., LANDAU, M.A.

COUNTRY OF INFO--USSR

S

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 148-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, PHOSPHORUS SULFIDE, NITROGEN, OXYGEN, CHEMICAL BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/1501 STEP NO--UR/0192/70/011/001/0148/0149

CIRC ACCESSION NO--AP0138502

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

2/2 021 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0138502

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SHIFTS IN THE IR FREQUENCY OF THE P(O) BOND WERE TABULATED FOR SOLNS. OF (ETS) SUB3 PO, (BUS) SUB3 PO, (ME SUB2 N) SUB3 PO, AND (ET SUB2 N) SUB3 PO IN CCL SUB4 AND CDCL SUB3. WHILE THE BAND FREQUENCIES AND FORCE CONSTS. OF THE PO GROUPS IN THESE COMPDS. ARE SIMILAR TO EACH OTHER IN MAGNITUDE, THE MECHANISM OF TRANSMISSION OF ELECTRONIC EFFECTS FROM SUBSTITUENTS TO PO DIFFERS GREATLY DEPENDING ON THE LINKING ELEMENT. THE BAND INTENSITIES VARIED CONSIDERABLY BETWEEN THE ESTERS AND THE AMIDES. THE RESULTS SHOWED MUCH GREATER BASICITY OF THE PHOSPHORYL O ATOM IN THE AMIDES THAN IN THE ESTERS. THE RESULTS AGREE WITH LCAO CALCN. OF NEG. CHARGE ON THE O ATOM BEING MINUS 0.896 IN THE AMIDES AND MINUS 0.709 IN THE ESTERS, WHILE THE CHARGE ON THE N ATOM IS PLUS OR MINUS 0.187 AND THAT ON S IS MINUS 0.004.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

1/2 007 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--COMPLEXES OF MALONONITRILE WITH CUPROUS CHLORIDE -U-

AUTHOR-(04)-SMIRNOV, S.K., STRUKOV, O.G., DUBOV, S.S., DANILINA, L.L.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1305-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--COPPER COMPLEX, NITROGEN ISOTOPE, ORGANIC NITRILE COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0702 STEP NO--UR/0078/70/015/005/1305/1307

CIRC ACCESSION NO--AP0136141

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

2/2 007 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136141

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREPN. AND STUDY OF NCCH SUB2 CN.CUCL, CUCL. PRIME15 NCCH SUB2 C PRIME15 N.CUCL, AND NCCH SUB2 C PRIME15 N.CUCL REVEALED THAT ON COORDINATION PRIME15 N IS A BETTER DONOR ATOM THAN PRIME14 N.

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STRUKOV, V. M.

Microelectronics

JPRS 57333

25 October 1972

MICROELECTRONICS

Excerpts from Russian-language book edited by F. V. Lukin; Mikroelektronika, No 5, 1972, Sovetskoye Radio Publishing House, Moscow, UDC 621.382:621.396.6-181.5.

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UDC 681.325.65

Analysis of the Operation of a Logic Element Type SETL on a Transmission Line. Churin, Yu.A. In the Collection Mikroelektronika, edited by F.V. Lukin, No 5, p 253, Sovetskoye Radio Publishing House, 1972.

The article analyzes the interaction between a high-speed logic element type SETL (transistor logic on circuits with connected emitters) and length of the lines. In view of the complexity of the system its investigation is done by a numerical method using a computer.

The article gives the results of numerical computation indicating the influence of the parameters of the circuit on the distortion of the transmitted signals. On the basis of this analysis the author gives recommendations for selecting the allowable length of the matched and unmatched connections in several specific cases.

The article contains 10 figures and 5 bibliographic references.

UDC 621.382.8-0.3.4

The Question of Interblock Bonds of Digital Equipment on Integrated Circuits of Transistor-Transistor Type. Avayev, N.A. In the Collection Mikroelektronika, edited by F.V. Lukin, No 5, p 267, Sovetskoye Radio Publishing House, 1972.

The author cites data on the parameters of lattice-type impulse noises generated in the interblock communication lines of digital equipment on integrated circuits of transistor-transistor logic (TTL). He examines a circuit with elevated noise stability, intended for reception from communication lines constructed on the basis of standard integrated circuits appearing in the TTL series.

The article contains 5 figures and 7 bibliographic references.

UDC 621.382.8

Selection of a Constant Current Source in Logic Circuits for Current Switches. Nemudrov, V.G., Strukov, V.N., and Shishkevich, A.A. In the Collection Mikroelektronika, edited by F.V. Lukin, No 5, p 275, Sovetskoye Radio Publishing House, 1972.

To ensure the required noise stability in integrated circuits for current switches, especially in multilevel cir-

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cuits, an important role is played by the choice of a constant current source.

The article analyzes the dependence of instability of the logic differential of the integrated circuits for the current switches on change in the destabilizing factors (supply voltage, temperature, and technological scatter in the component parameters) by using different modifications of the constant current source.

Recommendations are given for the optimal selection of the constant current source.

The article contains 4 figures, 1 table, and 5 bibliographic references.

UDC 539.186.3.211.27

Distribution of Thermoelastic Deformations in the Surface Region of Thermally Oxidized Silicon. Valiyev, K.A., Kozlov, B.I., Lukin, A.A., Malov, A.G., and Rakov, A.V. In the Collection Mikroelektronika, edited by F.V. Lukin, No 5, p 282, Sovetskoye Radio Publishing House, 1972.

The article theoretically analyzes the distribution of elastic deformations in the surface region of thermally oxidized silicon. The authors examine the case of a dense oxide film on a semiconductor and the case of termination of its denseness. The value obtained agrees with the theoretical computation. The authors discuss the results of experiments testifying to the localization of the deformations in the surface layer of silicon at the sites of termination of denseness of the oxide. They show the influence of thermoelastic deformations on the chemical activity and volt-Faraday characteristics of the MDP structures.

The article contains 3 figures and 11 bibliographic references.

UDC 621.383.42:546.48.22/23

Investigation of the Longitudinal Operating Mode of CdS-CdSe Film Photoresistors. Vdovenkov, A.A., Krolevets, K.M., Komashko, V.A., and Skarzhevskaya, E.P. In the Collection Mikroelektronika, edited by F.V. Lukin, No 5, p 296, Sovetskoye Radio Publishing House, 1972.

The article describes a manufacturing method and the parameters of the CdS-CdSe photoresistors, operating in a longitudinal mode. The authors mention their high specific sensitivity (0.5-1 A/V·lu) and the weak dependence of the

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR UDC: 67.621.374.-181.5

SHAGURIN, I. I. and STRUKOV, V. N.

"Improving the Noise Immunity of Integrated-Circuit Transistor Logic Elements With Emitter Coupling"

Kiev, Izvestiya VUZ--Radioelektronika, Vol. 13, No. 12, 1970, pp 1480-1485

Abstract: The method of improving the noise immunity of transistorized integrated circuits with emitter coupling advocated by the authors is to create a hysteresis condition in the transfer characteristic of the logic element. With constant values of the "0" and "1" logic level voltages, the threshold switching voltage for the "0" increases and the threshold switching voltage for the "1" decreases so that the first exceeds the second. The width of the hysteresis loop is then equal to the difference between the two threshold voltages. To obtain the hysteresis loop, the input voltage must be equal to the "0" logic level voltage with a low potential at all inputs. Expressions are found for the width of the hysteresis loop and for the statistical noise immunity of an

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SHAGURIN, I. I. and STRUKOV, V. N., Izvestiya VUZ--Radioelektronika, Vol 13, No 12, 1970, pp 1480-1485

element, with the values worked out for typical parameters. The authors conclude that as a result of this hysteresis procedure, the statistical noise immunity of the logic element can be multiplied by a factor of two to three.

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Metrology, Surveying, Mapping

USSR

UDC 772.99.004:778.142

ZNAMENSKIY, V. B., KUKAROV, G. V., STRUKOV, V. S.

"Study of Possibilities of Using Holography to Increase the Information Packing Density of Microfilm"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, Vol 17, No 6, Nov-Dec 72, pp 419-422.

Abstract: This work presents an experimental study of the maximum packing density of information of varying degrees of complexity on microfilm (letters and text). The method of successive and simultaneous superimposition of holograms and various methods of production of reduced-dimension holograms were used. The dependence of the maximum number of holograms of an individual letter and of a segment of text on letter height is determined: the number of holograms decreases with decreasing letter height. When a spherical converging signal wave is used, the readability of the restored image of a microfilm text is good when the area occupied by the hologram is 1/16th the area of the initial microfilm. An additional hologram can be superimposed over each of these reduced-size holograms with only a slight reduction in text readability. The compacting of information achieved corresponds to a 45-times reduction in dimensions of the original text, letter

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USSR UDC 772.99.004:778.142

ZNAMENSKIY, V. B., KUKAROV, G. V., STRUKOV, V. S., Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, Vol 17, No 6, Nov-Dec 72, pp 419-422.

height 1.7 mm, with satisfactory readability.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR

UDC 576.809.7

PLETSITYY, D. F., and STRUKOVA, L. G., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow

"Morphological Changes in the Central Nervous System in Animals Immunized With Purified Toxoids"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 5, 1971, pp 1,211-1,214

Abstract: Changes in the spinal cord ganglia and the spinal cord of rabbits in the regions of the thoracic (D_1 - D_5) and lumbosacral sections (L_6 - S_1) were studied upon immunization of animals by intramuscular administration of 0.7 ml of adsorbed pertussis-diphtheria-tetanus vaccine or either of two components of this vaccine, adsorbed tetanus toxoid or adsorbed diphtheria toxoid. Control rabbits were given an injection of $Al(OH)_3$ in an amount equal to that contained in the combined vaccine. The purified toxoids, used extensively in practical medicine, produced a complex of morphological changes in the spinal ganglia and spinal cord, that could be described as typical of changes produced by a pathogen. The pathomorphological changes affected neurons in the ganglia, glia elements, blood vessels, the cornua of the spinal cord, and persisted for at least 2 weeks after immunization,

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USSR

PLETSITYY, D. F., and STRUKOVA, L. G., Doklady Akademii Nauk SSSR, Vol 200, No 5, 1971, pp 1,211-1,214

disappearing approximately on the 30th day following administration of the toxoids. The findings were in agreement with earlier observations made by Pletsityy of disturbances in the physiological functions of animals treated with toxoids. $Al(OH)_3$ did not produce any pathological changes.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

Immunology

USSR UDC 576.809.7

PLETSITYY, D. F., and STRUKOVA, L. G., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow

"Morphological Changes in the Central Nervous System of Animals Vaccinated With Purified Toxoids"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 5, 1971, pp 1211-1214

Abstract: The study was performed on 50 rabbits which had received 0.7 ml of purified, adsorbed toxoids or of the adsorbent solution (aluminum hydroxide) intramuscularly. The animals were sacrificed 1, 4, 10, and 30 days after vaccination, and their spinal ganglia and spinal cords at T1-T5 and L6-S1 were investigated for structural changes by Nissl's method. In the first group, which had received DPT vaccine, pathological changes typical of "primary stimulation": (redistribution of Nissl's bodies, perinuclear chromatolysis, peripheral location of nuclei, and vascular and glial reactions) were observed in spinal ganglia and in the dorsal and lateral horns of the spinal cord but not in the ventral horn. These changes became more pronounced on the 4th day (pyknosis of neurons, hyperchromia, pericapsular edema, spotty chromatolysis, vacuolization, ameboid degeneration of glial cells, and hemorrhagic spots), remained unchanged on the 10th day, and almost disappeared

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USSR

PLETSITYY, D. F., and STRUKOVA, L. G., Doklady Akademii Nauk SSSR, Vol 200, No 5, 1971, pp 1211-1214

on the 30th day. In the second group, which had received adsorbed tetanus toxoid and in the third group, which had received adsorbed toxoid, the pathology was essentially the same as above. In the fourth group, which had received the adsorbent solution and thus served as the control, no pathological changes developed. These findings fully agree with the neurophysiological disorders observed in animals shortly after vaccination with toxoids.

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WELDING

USSR UDC 621.791.052.011:669.15-194.52+669.786+669.292

MATSNEV, E. P., Engineer, ASTAF'YEV, A. S., Candidate of Technical Sciences, STRUKOVA, N. S., Engineer (Central Scientific Research Institute for Ferrous Metallurgy imeni I. P. Bardin), CHECHEKIN, YU. F., Engineer (Plant imeni Lenin), and NABATOVA, K. A., Candidate of Technical Sciences (Central Scientific Research Automobile and Auto Engine Institute)

"Properties of Welded Joints of Commercial 12G2 Steel Alloyed With Nitrogen and Vanadium"

Moscow, Svarochnoye Proizvodstvo, No 11, Nov 70, pp 27-29

Abstract: Results are presented from a study of the properties of welded joints made under conditions similar to those used for side members of motor vehicle frames from a 100-ton commercial melt of steel produced in an open hearth furnace at the Chelyabinsk Metallurgical Plant. The chemical composition of the metal was: 0.13% C, 1.19% Mn, 0.12% Cr, 0.10% Ni, 0.12% V, 0.02% N, 0.09% Cu, 0.018% S, 0.008% P. Welded joints produced

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MATSNEV, E. P., et al., Svarochnoye Proizvodstvo, No 11, Nov 70, pp 27-29

in the sheet steel by manual arc welding were equal in strength to the base metal. The fatigue strength of the welded joints was 15-20% higher than the fatigue strength of welded joints in 30T steel.

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USSR

UDC 532.52.63

STRUMINSKIY, V. V., KHARITONOV, A. M., CHERNYKH, V. V., Novosibirsk

"Experimental Study of the Transition of a Laminar Boundary Layer of a Turbulent Boundary Layer at Supersonic Velocities"

Moscow, Mekhanika zhidkosti i gaza, No. 2, Mar/Apr 72, pp 30-34

Abstract: Experiments on the effect of the unit Reynolds number on the transition of a laminar boundary layer into a turbulent boundary layer under supersonic flow of a plane plate in wind tunnels with different dimensions of the working elements are described. It is noted that experimental data in the literature present a fairly clear picture of the effect of the unit Reynolds number (U/ν, where U is the velocity and ν is the coefficient of kinematic viscosity) on the transition to the boundary layer, but that the results of these studies were conducted over a relatively narrow range of unit Reynolds numbers (up to $23 \cdot 10^6$ m^{-1}) and it was therefore of interest to study the effect of the unit Reynolds number on the transition in a wider range of U/ν. New results were obtained on the transition of the laminar boundary layer into a turbulent boundary layer on a plane plate at M = 3 and 4 over a wide range of variation in unit

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STRUMINSKIY, V. V., et al, Mekhanika zhidkosti i gaza, No. 2, Mar/Apr 72, pp 30-34

Reynolds numbers $(10-74)\cdot 10^6\ m^{-1}$. A stabilization effect which appears earlier in wind tunnels with greater dimensions of the working element was observed for large values of the unit Reynolds number. The position of the transition region in different wind tunnels was fairly well defined by the number Re_D for small values of the unit Reynolds number, where $Re_D = UD/\nu$ and D is the dimension of the working element of the wind tunnel. Data from experiments with five different wind tunnels are presented.

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FILIPPOV, V. M., and STRUMINSKIY, V. V.

"Experimental Investigation of the Appearance and Development of Turbulence in Pipes"

V sb. Turbulentn. techeniya (Turbulent Flows -- Collection of Works), Moscow, "Nauka," 1970, pp 240-246 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1B678 by authors)

Translation: It is shown that in laminar-turbulent transition there first appear therein clearly pronounced sinusoidal oscillations, the development of which subsequently leads to the formation of individual turbulent centers. The dependence of intermittance coefficient and number on Reynolds number is described comparatively well by an integral function and density function of normal error distribution law respectively. Investigations were conducted by the scattered-light method using a special hydraulic device of the closed type with a square- and round-section working part.

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USSR

UDC 621.43.011:533;621.5:533

STRUNIN, V. A., MANELIS, G. V.

"Model of Heterogeneous Combustion in a Solid-Phase System: Oxidizer + Fuel"

V sb. 11-ya Vses. konf. po vopr. ispareniya, goreniya i gaz. dinamike dispersn. sistem, 1972 (11th All-Union Conference on Problems of Evaporation, Combustion and Gasdynamics of Disperse Systems, 1972 -- Collection of Works), Odessa, 1972, pp 39-40 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B417)

Translation: A model of heterogeneous combustion is proposed for a system consisting of plates of fuel and oxidizer placed one against the other. The gassification products go to the surface of the nonvolatile fuel and react with it with the release of heat and the formation of a gaseous product. Formulas for the mass rates of oxidation of the fuel, the mass rate of gassification of the oxidizer and the distance between the plates are obtained. The case of evaporation or sublimation of the oxidizer is considered. Conditions for the transition of the reaction to the diffusion region are studied. The case of gassification of the oxidizer by reaction of thermal decomposition is analyzed. The rate of combustion is evaluated for a potassium-carbon perchlorate system. Yu. F. Dityakin.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR

UDC: 629.7.036.3-253.5:534.1

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

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

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

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

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JPRS 59208

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XV-7. STUDY OF MONOCRYSTALLINE LAYERS OF A^2B^6 SEMICONDUCTING COMPOUNDS BY THE X-RAY METHODS

[Article by I. M. Kotelyanskiy, V. D. Strygin, G. F. Kuznetsov, Institute of Radioengineering and Electronics of the USSR Academy of Sciences, Moscow; Novosibirsk. III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 218]

The methods of x-ray diffraction measurement and Laue diffraction patterns were used to study the orientation crystallographic ratios of the heteroepitaxy of monocrystalline layers of semiconducting compounds CdS, CdSe and ZnO on substrates of single crystals of cubic syngony. The laws of the crystallographic ratios are found and they are discussed.

The results are presented from studying the defective structure of epitaxial layers by the Fujiwara method without separation of them from the substrates.

STRYGIN, V. D.

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USSR

UDC: 620.193.7

KOLOTYRKIN, Ya. M., and STRUNKIN, V. A., Physicochemical Scientific Research Institute imeni L. Ya. Karpov; Scientific Research Institute of Organic Semi-Products and Dyes

"Localized Titanium Corrosion On Application of Alternating Current"

Moscow, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 511-516

Abstract: This study concerns the effect of alternating current on the corrosion-electrochemical behavior of titanium in 6 n. solution of HCl and H_2SO_4 (with or without chlorine saturation) at 60°C and room temperature. In the solution $HCl+Cl_2$ the application of alternating current causes localized corrosion of titanium; in $H_2SO_4+Cl_2$ it intensifies uniform corrosion. The difference in the behavior of titanium in chlorine-saturated HCl is related to the different states of the metal's surface (active and passive) which feature different palarizability. Molecular chlorine does not directly promote pitting, yet being an oxidizer, it passivates titanium, depolarizes it, and makes it less susceptible to the adverse effect of alternating current. A drop in temperature decreases the dissolution rate and increases the proportion of current. In sulfuric

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KOLOTYRKIN, YA. M., and STRUNKIN, V. A., et al., Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 511-516

acid solution the corrosion rate of active titanium is almost 2.6 times lower than that in HCl without polarization and is 1.4 times lower with a-c polarization. In the latter case the dissolution rate remains lower than the anodic component of alternating current. In chlorine-saturated H_2SO_4, with application of alternating current, the polarizing current (during an anodic half-period) is consumed to form an oxide film; the lack of chlorine-ions obviates the possibility of localized activation.

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USSR

UDC 620.193.3

STRUNKIN, V. A., TSEYTLIN, Kh. L. and PORET, E. N., Scientific Research Institute of Organic Intermediates and Dyestuffs

"Combustion of Titanium and Its Alloys in Gaseous Chlorine"

Moscow, Zashchita metallov, Vol 8, No 1, Jan-Feb 72, pp 15-18

Abstract: Discussed is the combustibility of titanium and its alloys in gaseous chlorine as well as the effect of alloying on both inflammation and corrosion resistance of titanium in chlorine gas. Involved in the study were OT4-0, OT4-1, VT5-1, VT-14, Ti-Pd and Ti-Mo alloys of given compositions. The time from the input of chlorine gas to the moment of the specimen's combustion is termed "induction period". The duration of this period depends largely on the preparation of the specimen. A table shows the effect of temperature (30, 60, 90, 120 and 150°C) on the duration of the induction period of titanium alloys in dry chlorine gas as a function of preparation conditions. The VT5-7 alloy, being a stable alloy, took 352 and 206 hrs to ignite at 30 and 60°C, respectively. TU-14 ranked second. Freshly cleaned specimens demonstrated shorter

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STRUNKIN, V. A., et al, Zashchita metallov, Vol 8, No 1, Jan-Feb 72, pp 15-18

induction periods. Metal chlorides with higher vapor pressures appear to react violently with chlorine. Of all experimental alloys, Ti-32% Mo was most stable and is recommended for components of experimental equipment using dry chlorine at temperatures not exceeding 60°C. (2 tables, 19 bibliographic references).

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STRUNNIKOV, V.A.

Biology

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Daily Review
Vol. XVIII No. 5 (439)
June 14 1952

201E8077/B 6

GENETICS' SILK SPINOFF

V. A. Strunnikov, D.Sc. (Biology),
Laboratory Head, Institute of
Growth Biology, USSR Academy
of Sciences

Everybody has a use for silkworm "output". How to increase it? Just how Soviet geneticists are solving this problem, is described below.

* * *

Male caterpillars of silkworm moths have a higher "efficiency" than females: they produce 20 per cent more silk per one kilogram of eaten fodder (mulberry leaves). Silkworm breeders find it would be much more expedient to breed only the "strong" sex. However it is actually impossible to select males by outward signs alone.

Nevertheless, scientists have succeeded in solving this problem.

In 1930s, B.L. Astaurov, a Soviet geneticist, now Academician, found the widely-known laboratory methods of optional production of the male and female sexes. Continuing research in this direction by joint efforts, a number of laboratories of the Central Asian Sericulture Research Institute, Tashkent State University and the Institute of Growth Biology of the USSR Academy of Sciences have developed fundamentally new methods of sex regulation, suitable for commercial uses.

The cell nucleus of any organism includes microscopically small, paired bodies--"hereditary molecules" (chromosomes). Their separate sections, called genes, are responsible for some or other characters of the species, for example, the colour of the eggs.

The eggs laid by the silkworm moth are usually of a dark colour. In some artificially produced strains the colour is light. The colour is inherited irrespective of the sex. By using nuclear radiations capable of inducing mutations--hereditary changes--and "reshuffling" the hereditary material, it has been possible to transplant the gene responsible for the dark colour of the eggs to that single chromosome which gives rise to the development of the female sex. Unfortunately, the white colour gene lowers viability, and so male caterpillars could not be turned over for industrial feeding. Nevertheless, this scientific achievement has found practical applications in our country.

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It is well-known that in plant and animal breeding the first generation hybrids of parents, who belonged to different strains or breeds, have an enhanced viability and productivity. The different colours of the eggs has made it possible to sort out future males and females faultlessly and, by cross-breeding representatives of two breeds, to obtain pure hybrid eggs. Hybrid caterpillars of both sexes demonstrated a high viability. The productivity of silkworm feeding has grown sharply.

The quests continued. The complex methods of radiation genetics have permitted scientists to evolve a number of new breeds that were now labelled according to their sex. Their male and female eggs can be clearly distinguished by their colour. The hybrid males of these breeds have successfully passed state and industrial tests. The Uzbek Ministry of Agriculture plans to begin their broad application in 1973.

Needless to say that it is virtually impossible to sort out the eggs by hand. That is done by photoelectric automatic machines.

Recently, by inducing a great many hereditary changes and "re-carving" chromosomes by this means, it has been possible to evolve a special silkworm breed. The offspring obtained from its cross-breeding with any other breed consists entirely of males. Almost all female eggs prove to be inviable. The photoelectric automatic device can now be discarded; a sorting-out "genetic mechanism" is inherent in the eggs.

Ideally, as shown by state and production trials, the all-round application of methods of sex regulation and of feeding only male caterpillars of the high-yield silkworm hybrid will permit us to produce 35-40 per cent more raw silk, given the same labour and material costs.

It must be said that the changeover to the breeding of caterpillars of one sex will call for some rearrangements at silkworm breeding plants. After all, half of the hybrid eggs will be inviable in this case. That means two times more eggs will be needed. However, the introduction of new hybrids in production will result in a weighty addition to silk output without any enlargement of the feeding basis.

(Pravda)

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USSR

UDC: 518.5:681.3.06

ZHDANOV, Zh. D., KONYKHOV, A. A., STRUTINSKIY, A. N.

"Operational Experience With the 'Dnepr-1' Universal Computer in a System for Control of Galvanic Production"

V sb. Kibernet. tekhnika. Vyp. 4 (Cybernetic Technology--collection of works, No 4), Kiev, 1970, pp 41-55 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V768)

[No abstract]

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USSR

UDC 551.46.087.08

YAMKOVOY, V. A., OVANESOV, O. G., LATYSHEVA, G. I., STRUTSINSKIY, A. V., and MATVEYEV, V. A.

"A Marine Water Temperature Meter"

Kiev, Vestn. Kiev. politekhn. in-ta. Ser. priboroctr. (Journal of the Kiev Polytechnic Institute-Instrument Engineering Series) No 3, 1972, pp 34-35 (from Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika, No 1, 1973, Abstract No 1.32.723 by V. S. Krasnova)

Translation: A short description of an instrument for measuring the temperature of marine water is presented, whose function is based on the transformation of temperature into an electrical signal. The average temperature is measured by the unbalance current of a bridge using a microammeter M=1690+A, first class, with current limits 0-100 microamp, as an indicator. The range of temperature from -2°C to +35°C is broken down into four subranges of 10°C each. The voltage of the feeding measurement circuit is 9.86 volts constant current. The instrument assures the measurement of temperature in each range with an accuracy of ± 0.1°C. The maximum endurance time of the monitor for a fixed level and a discrete measurement is 4-5 seconds. (1 illustration, English resume)

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USSR

UDC 911.3.616.981.455(470.333)

ADAMOVICH, V. L., STRUTINSKIY, V. M., and DOZORTSEVA, A. A.

"Elimination of Tularemia in the Desna Flood Plain in Relation to the River Irrigation Project"

V sb. Kompleksn. probl. Desny (Complex Problems of the Desna -- collection of works), Tula, 1970, pp 196-202 (from RZh-36. Meditsinskaya geografiya, No 1, Jan 71, Abstract No 1.36.122 by V. Maslovskaya)

Translation: From 1948 to 1963 there were 1,417 recorded cases of tularemia in Bryanskaya Oblast, and morbidity was gradually increasing. The high incidence in 1963 can be explained by the abrupt intensification of the epizootic process in tularemia foci and the absence of appropriate vaccination for the population. After 1963 the morbidity sharply decreased: in 1964 -- 7 cases (in the environs of Bransk); in 1965 -- 2; and in 1966 -- 12 cases (in the Desna flood plain). In the Desna flood plain there are two dangerous epidemiological areas: from the mouth of the Bolva river to Pil'shino village and from Radutino to Belaya Berezka village. Tularemia study in Bryanskaya Oblast showed that elementary foci of infection are associated with the distribution of Ixodes apronophorus ticks and are found in alder

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USSR

ADAMOVICH, V. L., et al, V sb. Kompleksn. probl. Desny (Complex Problems of the Desna — collection of Works), Tula, 1970, pp 196-202 (from RZh-36. Meditsinskaya geografiya, No 1, Jan 71, Abstract No 1.36.122 by V. Maslovskaya)

groves. Cartographic data shows that tularemia foci in 1963 were associated with areas of land reclamation. These conditions are causing Ixodes ticks and rodents to inhabit the shores of drainage canals. Microfoci emerge, from which infection spreads into the flood plain with subsequent increased incidence of tularemia in the population. The morbidity probability has increased for tularemia, hemorrhagic fever with a renal syndrome, Q fever, and other diseases.

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USSR UDC: 621.375.132.3

STRUTYNSKIY, Yu. F., ENENSHTEYN, B. S., Geology Institute of the Academy of Sciences of the USSR

"An Emitter Follower"

USSR Author's Certificate No 251011, filed 25 May 67, published 5 Feb 70 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7D154 P)

Translation: An emitter follower circuit based on a compound triode is proposed. To increase the output impedance, the base of the input transistor has connected to it the emitter of an additional transistor of opposite conductivity type. The collector of this second transistor is grounded and the input signal source is connected to its base.

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USSR

UDC 621.318.435:621.391.822

KOLACHEVSKAYA, V. V., KOLACHEVSKIY, N. N., ROZHDESTVENSKIY, V. V., STRYGIN, L. V.

"Spectral Distribution of Magnetic Noise Close to Harmonics of the Frequency of Magnetic Alternation"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 7, Jul 71, pp 1211-1215

Abstract: The authors consider one of the possible mechanisms which may result in flicker of susceptibility. It is assumed that a specimen is placed in an external sinusoidal field with amplitude H_0 and magnetic alternation in some special cycle. In addition, a random field h(t) is applied to the specimen with zero average value. Phenomenologically, this field describes additive magnetic noises such as Barkhausen noise, external fields of random type, etc. It is assumed that the interval of correlation of additive noise is much shorter than the period of magnetic alternation, and that its distribution function at fairly large h falls as $\exp(-h^m)$. It is shown that such an "inoculation" additive noise can generate flicker noise in susceptibility. The theory is experimentally verified by a study of the spectral distribution of excess magnetic noise in thin Permalloy films. The proposed theory can also be used to explain the experimental results of works where excess noise has been observed at a magnetic alternation frequency of several megahertz.

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USSR

UDC: 517.948:513.88

STRYGIN, V. V.

"On the Question of Generating Solutions for a Periodic Problem for Autonomous Systems"

Tr. NII mat. Voronezh. un-ta (Works of the Scientific Research Institute of Mathematics, Voronezh University), 1970, vyp. 1, pp 159-174 (from RZh-Matematika, No 5, May 71, Abstract No 5B940)

Translation: The author considers a periodic problem for an autonomous system of differential equations with a small parameter. The task of finding periodic solutions of the system reduces to two problems on stationary points of operators acting in different spaces. For corresponding problems, the author studies two systems of equations for finding the "generating" parameters. It is proved that these systems coincide under certain conditions. Ya. Memedov.

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Waveguides

USSR

UDC 621.372.832.43

NAGORNOV, A. I., VASIL'YEV, V. P., GORDEYEV, V. A., STRYGIN, Yu. F.

"A Miniature Magnetless Ferrite Diode Waveguide"

V sb. Radioelektron. v nar. kh-ve SSSR (Radio Electronics in the Soviet National Economy--collection of works), Kuybyshev, 1971, pp 371-373 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11B189)

Translation: The paper presents the results of an experimental study of a magnetless miniature diode for the cm band based on a cylindrical ferrite with induced unidirectional anisotropy. The diode is based on a rectangular waveguide with an absorber located in a depression in one of its walls. A dielectric plate is placed in front of the absorber to improve matching and tuning of the electrical length. The height of the ferrite cylinder is 80-95 percent of the size of the narrow wall of the saveguide. The operating principle of such a diode is described and the characteristics of a model of the diode are presented. One illustration, bibliography of five titles. A. K.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR

UDC 621.372.85

KOSHKIN, L. I., GORDEYEV, V. A., STRYGIN, YU. F., NAGORNOV, A. I., VASIL'YEV, V. P.

"Small Wave Guide Devices"

Issled. po fiz., metodike fiz. i astron. -- V sb. (Research in Physics and Physics and Astronomy Procedures -- collection of works), Kuybyshev, 1970, pp 43-44 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B177)

Translation: The development of a number of small wave guide devices is reported: a ferrite rectifier weighing 80 grams, a "nonmagnetic" ferrite circulator with unidirectional anisotropy and some ferrite devices with induced anisotropy.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210012-8

USSR

UDC: 621.396.679.46

GORDEYEV, V. A., NAGORNOV, A. I., VASIL'YEV, V. P., STRYGIN, Yu. F.

"A New Ferrite Commutator"

Moscow, Radiotekhnika, Vol 27, No 7, Jul 72, pp 97-100

Abstract: The paper gives the principle of operation and design of a commutator which utilizes a ferrite with induced unidirectional anisotropy. The results of an experimental check of a pilot model of the proposed commutator are presented, and it is shown that the suggested treatment of the ferrite gives a waveguide commutator which is simple and reliable and can be extensively used as a microwave switch and modulator. Pulse-chain carriers can be modulated with respect to position, amplitude or duration (PPM, PAM and PDM). The advantages of small size and weight make the device attractive for use in navigational and radar equipment on aircraft and space vehicles, as well as in measurement technology.

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STRUKOV, G. A.

29 Oct 71

FPD:CYBERNETICS

26. USSR

SO: FOREIGN PRESS DIGEST 29 Oct 1971

KONOPKIN, O. A., Institute of General and Educational Psychology, Academy of Educational Sciences of the USSR, Moscow, and STRUKOV, G. A., Institute of Industrial Medicine and Occupational Disease, Gor'kiy

"Probabilistic Prediction as a Determinant of Reaction Time to Alternative Signals"

Moscow, Voprosy Psikhologii, No 3, May-Jun 71, pp 46-56

Abstract: Subjects of these experiments predicted the occurrence of one of four (in one series, two) events; they were also required to respond to the events as they occurred, and their reaction times were measured.

Except where probabilities were greatly unequal, subjects tended to assume that the probabilities of all events were equal. Their reaction times were found to correspond to the predictions, rather than to real probability distributions. Thus the reaction time to the most predicted event was shortest.

Over a period of several days, subjects' performance improved in both respects, but predicted probabilities remained somewhat more equal than real probabilities.

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Optics & Spectroscopy

USSR

KNYAZHANSKIY, M. I., STRYUKOV, M. B.

"Determination of Dipole Moments of Organic Molecules in the Triplet Excited State"

Leningrad, Optika i Spektroskopiya, September 1970, pp 469-72

ABSTRACT: A method is proposed for evaluating the dipole moments of organic molecules in excited triplet states by the use of data on triplet-triplet energy transfer in liquid solutions. This method significantly increases the number of objects which can be studied.

The article includes two tables and two figures. There are 6 references.

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USSR

Nitrogen Compounds

UDC 538.111+532.72

STRYUKOV, V. B. and ROMANTSEV, E. G.; Institute of Chemical Physics, USSR Academy of Sciences, Moskovskaya Oblast Branch

"Anisotropic Parameters of the Iminooxyl Radical with N^{15}"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 7, No 2, 1971, pp 249-253

Abstract: New information on the supermolecular packing and dynamics of polymer molecules can be supplied by the EPR method to study the motions of stable iminoxyl radicals of a certain type in high-molecular compounds. However, the corresponding necessary calculations present very definite methodological difficulties. To avoid this, the authors replaced the commonly-used radical, with its N^{14} isotope (spin 1), by the N^{15} isotope (spin 1/2), thus securing a smaller number of necessary equations. It was expected, also, that use of the N^{15} isotope would through light on the evident defects of the simple isotropic model of radical rotation in solid polymers. The N^{15} radical was synthesized by condensation of chromatographically pure phorone, followed by catalytic oxication of the resulting triacetonamine into 2,2,6,6-tetramethyl-4-oxopiperidine-1-oxyl, this being almost identical physically with the N^{14} radical. EPR spectra for the two radicals in polyethylene and glycerine were

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USSR

STRYUKOV, V. B. and ROZANTSEV, E. G., Teoreticheskaya i Eksperimental'naya Khimiya, Vol 7, No 2, 1971, pp 249-253

obtained, showing values for the Fermi interaction and other constants. Use of the N^{15} radical was supported both by the easier calculation and by conformity with known physical data.

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