1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--FATTENING CATTLE WITH COTTON FEEDS SUPPLEMENTED WITH CHLORELLA -U-

AUTHOR--NESKUBO, P.M.

N

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, ZHIVOTNOVODSTVO, NO 1, 1970, PP 37-39

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, AGRICULTURE

TOPIC TAGS--CHLORELLA, DIARY CATTLE, ANIMAL HUSBANDRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0288 STEP NO--UR/0347/70/000/001/0037/0039

CIRC ACCESSION NO--AP0127872
UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127872

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CATTLE FED FOR 79 DAYS WITH COTTONSEED OIL CAKES AND PODS SUPPLEMENTED WITH OPTIMUM AMOUNTS OF CHLORELLA (12-LITER SUSPENSION, 15 MILLION CELLS-M PRIME3) GAINED AN AVERAGE OF 119 KG, WHILE CONTROLS GAINED ONLY 94 KG. IN CONTROLS, THE NUMBER OF RBC DECREASED, WHEREAS IN EXPERIMENTAL ANIMALS IT ROSE TO 800,000-ML. THE WBC COUNT ROSE TO 19,000-ML IN CONTROLS, BUT REMAINED ALMOST CONSTANT IN EXPERIMENTAL ANIMALS (7400). HEMOGLOBIN DECREASED BY 14 MG PERCENT IN CONTROLS BUT INCREASED BY 24 MG PERCENT IN COWS FED WITH CHLORELLA SUPPLEMENT. ADDITION OF CHLORELLA SUSPENSION TO ANIMAL FEED IMPROVED APPETITE, INCREASED THE DIGESTIBILITY AND ASSIMILATION OF NUTRIENTS, AND ALSO PREVENTED GOSSYPOL POISONING. FACILITY: INSTITUTE OF BOTANY, ACADEMY OF SCIENCES, UZBEK SSR.

UNCLASSIFIED

Food Technology

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USSR UDC 636.084.52

NESKUBO, P. M., Scientific Associate, Institute of Botany, Academy of Sciences, Uzbek SSR

"Fattening Cattle With Cotton Feeds Supplemented With Chlorella"

Moscow, Zhivotnovodstvo, No 1, 1970, pp 37-39

Abstract: Cattle fed for 79 days with cottonseed oil cakes and pods supplemented with optimum amounts of Chlorella (12-liter suspension -- 15 million cells/m^3) gained an average of 119 kg, while controls gained only 94 kg. In controls, the number of RBC decreased, whereas in experimental animals it rose to 800,000/ml. The WBC count rose to 19,000/ml in controls, but remained almost constant in experimental animals (7400). Hemoglobin decreased by 14 mg percent in controls but increased by 24 mg percent in cows fed with Chlorella supplement. Addition of Chlorella suspension to animal feed improved appetite, increased the digestibility and assimilation of nutrients, and also prevented gossypol poisoning.

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USSR

UDC 574.24

ZASUKHINA, G. D., NESMASHNOVA, V. A. and L'VOVA, G. N., Institute of Poliomyelitis and Viral Encephalitides, USSR Academy of Sciences, Moscow

"The Role of the Reparative Cellular Mechanism in Spontaneous and Induced Mutations in Vertebrate Viruses"

Moscow, Doklady Akademii Nauk SSSR, Vol 212, No 1, 1973, pp 223-225

Abstract: The principles of the mutation process, both spontaneous and induced by methylmethane sulfonate in Western Equine Encephalitis (WEE) virus in cells with active and defective reparative systems were studied. Syrian hamster kidney cells were used to grow the virus and small-plaque mutations were measured. It was found that while mutations in the defective cells progressively increased to a large level, those in the active cells remained constant and small. The mutagen methylmethane sulfonate was also more effective in the defective cells. These results are said to indicate that the reparative mechanism exerts a specific effect on the mutation process in WEE virus.

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1/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--TEMPERATURE DEPENDENCE OF SODIUM CHLORIDE ELECTROLUMINESCENCE -U-

AUTHOR--NESMELOV, N.S.

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COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 937-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ELECTROLUMINESCENCE, SODIUM CHLORIDE, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1289 STEP NO--UR/0181/70/012/003/0937/0939

CIRC ACCESSION NO--AP0116751

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116751

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE QUANTUM YIELD OF LUMINESCENCE INCREASES SHARPLY AS THE TEMP. DECREASES BELOW MINUS 30DEGREES. THIS INDICATES THAT THE INVESTIGATED LUMINESCENCE DOES NOT HAVE THERMAL CHARACTER. FACILITY: TOMSK. INST. RADIOELEKTRON. ELEKTRON. TEKH., TOMSK, USSR.

UNCLASSIFIED

USSR

UDC 621.315.592

NESMELOVA, I. M., BARYSHEV, N. S., VOLKOVA, F. P., CHERKASOV, A. P.

"Reflection Spectra of Single Crystals of $Cd_xHg_{1-x}Te$ Solid Solutions"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 950-951

Abstract: A study was made of the reflection spectra of $Cd_xHg_{1-x}Te$ single crystals as a function of the electron concentration n_0 and the cadmium telluride content at room temperature. The studies were performed on n-type single crystals grown by the vertical zone refining method. The electron concentration varied from 10^{15} to 10^{18} cm^{-3}, and samples were studied with a composition of $x = 0.17-0.48$. For specimens with an electron concentration of less than 10^{17} cm^{-3}, the reflection coefficient for fixed wave lengths increases with a decrease in the cadmium telluride content in the solid solution. Thus, the index of refraction increases with a decrease in x. Obvious plasma minima were observed in the reflection spectra of the specimens with $n_0 = 5 \cdot 10^{17}-2 \cdot 10^{18}$ cm^{-3}, by the position and magnitude of which the effective electron masses were calculated. The tabulated data include the values of the effective masses of the electrons calculated by Keyn [Cane] theory. We experimentally obtained values of m_n/m_0 agreeing with the values calculated by Keyn theory.

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Organometallic Compounds

USSR

UDC 547.13:546.72 + 546.14/15

NESMEYANOV, A. N., KOCHETKOVA, N. S., MATERIKOVA, R. B., PALITSYN, N. P., KSENZENKO, V. I., and SOBOLEVA, T. S., Institute of Metal Organic Compounds, Academy of Sciences USSR

"Reaction of Ferrocene Derivatives With Bromine and Iodine"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 9, No 2, Feb 73, pp 378-380

Abstract: Reaction of bromine and iodine with ferrocene substituted with electron donating and electron accepting substituents was studied. At -20° in heptane bromine decomposes ethyl- and 1,1'-diethylferrocene; with 1,1',3,3'-tetra-tert-butylferrocene it forms the tribromide of 1,1',3,3'-tetra-tert-butylferrocenium. At 50° in benzene iodine does not decompose ferrocene or its derivatives, forming addition products with various quantities of iodine. In general, presence of electron-donating substituents and reaction with strong oxidizers (Cl_2, Br_2) favor the decomposition of the ferrocene ring. In case of hindered derivatives or when the halogen is a weak oxidizer (iodine) mainly oxidation products are obtained, with an intact ferrocene ring. Oxidation to ferrocenium evidently preserves the system from further decomposition by the halogen.

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1/2 011 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--INTERACTION OF BENZENECYCLOPENTADIENYLIRON FLURUBORATE WITH SODIUM NAPHTHALENE -U-

AUTHOR-(03)-NESMEYANOV, A.N., VOLKENAU, N.A., SHILOVTSEVA, L.S.

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COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(2), 354-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IRON COMPOUND, BORON FLUORIDE, ORGANOSODIUM COMPOUND, NAPHTHALENE, REACTION TEMPERATURE, SOLVENT ACTION, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/2023 STEP NO--UR/0020/70/190/002/0354/0356

CIRC ACCESSION NO--AT0112978

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AT0112978
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION IS: 2(C SUB6 H SUB6 FEC SUB5 H SUB5)BF SUB4 PLUS (C SUB10 H SUB8) NEGATIVE NA POSITIVE MINUS(THF) YIELDS (C SUB5 H SUB5) SUB2FE PLUS 2C SUB6 H SUB6 PLUS (FE) PLUS 2NABF SUB4 PLUS C SUB10 H SUB8. THE FOLLOWING WERE OBSD. (RATIO OF REACTANTS, TEMP., SOLVENT, AND PERCENT YIELD (C SUB5 H SUB5) SUB2 FE GIVEN): 1:1, 20-5DEGREES, THF, 41; 1:1.25, 40DEGREES, THF, 42; 1:2, 20-5DEGREES, THF-MECN, 61.5; 1:2, MINUS 20DEGREES, THF-MECN, 33; 1:2, 20-5DEGREES, (MEOCH SUB2) SUB2, 50. WHEN THE REACTION MIXT. WAS TREATED WITH AQ. TL SUB2 SO SUB4 AND KOH, C SUB5 H SUB5 TL WAS OBTAINED.
FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--NUCLEAR MAGNETIC RESONANCE SPECTRA OF ARENECYCLOPENTADIENYLIRON COMPOUNDS -U-

AUTHOR-(05)-NESMEYANOV, A.N., LESHCHEVA, I.F., USTYNYUK, YU.A., SIROTKINA, E.I., BOLESOVA, I.N.

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COUNTRY OF INFO--USSR

SOURCE--J. ORGANOMETAL. CHEM. 1970, 22(3), 689-96

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NMR SPECTRUM, IRON COMPOUND, CYCLIC GROUP, COMPLEX COMPOUND, ORGANIC PHOSPHATE, FLUORINE ISOTOPE, ELECTRON ACCEPTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2130 STEP NO--NE/0000/70/022/003/0689/0696

CIRC ACCESSION NO--AP0125714

UNCLASSIFIED

CIRC ACCESSION NO--AP0125714

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PMR SPECTRA OF ARENECYCLOPENTADIENYLIRON COMPDS. (XPHFEC SUB5 H SUB5) PRIME POSITIVE PF SUB6 PRIME NEGATIVE, (RHO,XC SUB6 H SUB4 MEFEC SUB5 H SUB5) PRIME POSITIVE PF SUB6 PRIME NEGATIVE, (C SUB6 H SUB6 FEC SUB5 H SUB4 X) PRIME POSITIVE PF SUB6 PRIME NEGATIVE CONTG. VARIOUS SUBSTITUENTS X HAVE BEEN STUDIED. PMR CHEM. SHIFTS HAVE BEEN CORRELATED WITH THE SETS OF THE HAMMETT-TAFT SIGMA PARAMETERS. THE RESULTS ARE COMPARED WITH THOSE OBTAINED FOR THE NON COORDINATED ARENES OR WITH EARLIER DATA. HEXAFLUOROPHOSPHATES OF RHO OR M,FLUORODIPHENYLCYCLOPENTADIENYL IRON HAVE BEEN PREPD. AND THEIR PRIME19 F NMR SPECTRA ARE USED TO DET. SIGMA SUBI AND SIGMA SUBR PRIMEO OF THE PH RING IN (C SUB5 H SUB5 FEC SUB6 H SUB6) PRIME POSITIVE PF SUB6 PRIME NEGATIVE WHICH DIFFERS FROM THE UNCOORDINATED PH IN THAT IT IS A STRONG ELECTRON ACCEPTOR.

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

1/2 030 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ACTION OF LITHIUM ALUMINUM HYDRIDE ON KETONES OF BUTADIENEIRON
TRICARBONYL -U-
AUTHOR-(03)-NESMEYANOV, A.N., ANISIMOV, K.N., MAGOMEDOV, G.K.

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COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 715-17

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IRON COMPOUND, CARBONYL COMPOUND, BUTADIENE, LITHIUM HYDRIDE,
ALUMINUM HYDRIDE, KETONE, PHENOL, ALUMINUM COMPLEX, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1880 STEP NO--UR/0062/70/000/003/0715/0717

CIRC ACCESSION NO--AP0123668
UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0123668

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HOLDING BZH WITH ACCH:CHCH:CH SUB2 TIMES FE(CO) SUB3 (I) IN ETOH IN THE PRESENCE OF NAOH 2 HR GAVE 91PERCENT CINNAMOYLBUTADIENEIRON TRICARBONYL, YELLOW, M. 74DEGREES. THIS AND LIALH SUB4 IN THF OR ET SUB2 O GAVE IN 3 HR 1,PHENYL,3,HEPTANOL, B SUB7 137-8DEGREES, N PRIME20 SUBD 1.5040. LIALH SUB4 AND BETA IONONEIRON TRICARBONYL SIMILARLY GAVE AFTER SEVERAL HR IN THF SOME 50PERCENT BETA IONOL, N PRIME20 SUBD 1.5010. NO HYDROGENATION OF THE DOUBLE BONDS TOOK PLACE. THE RESULTS OF THESE REDNS. INDICATE THAT THE METAL BUTADIENE BOND IN SUBSTANCES RELATED TO I IS POLARIZED SO AS TO PROVIDE A PARTIAL POS. CHARGE ON FE, AND THIS SHIFT OF ELECTRON D. DOES NOT RECEIVE FULL COMPENSATION FROM CARBONYL GROUPS, SINCE THESE ARE ELECTRON ACCEPTORS RELATIVE TO THE METAL. IT IS SUGGESTED THAT REDN. OF I AND RELATED COMPDS. BY LIALH SUB4 STARTS WITH FORMATION OF CONFIGURATION IN WHICH A HYDRIDE ATTACK TAKES PLACE ON THE FE ATOM AND THE BONDS OF FE THAT ARE LIBERATED FROM BUTADIENE NOW BECOME INVOLVED WITH AL TO FORM A COMPLEX OF THE DIENONE WITH AL SIMILAR TO THAT FORMED WITH A STYRYL GROUP AND AL IN UNSATD. KETONES. THE COMPLEX PERHAPS ALSO HAS BONDS OF KETONE GROUPING TO AL, SINCE THE REDN. OF THE KETONE GROUP IS SIMULTANEOUS WITH REDN. OF THE METAL TO LIGAND BOND. THIS IS FURTHER SUPPORTED BY IR SPECTRA. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CYCLOPENTADIENYLDICARBONYL,PI-CYCLOPENTADIENE,NIOBIUM -U-

AUTHOR-(04)-NESMEYANOV, A.N., ANISIMOV, K.N., KOLOBOVA, N.YE., PASYNSKIY, A.A.

N

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 727

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CYCLIC GROUP, NIOBIUM COMPOUND, COMPLEX COMPOUND, DIENE, BUTADIENE, ISOPRENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0766 STEP NO--UR/0062/70/000/003/0727/0727

CIRC ACCESSION NO--AP0124436

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0124436
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UV IRRADN. OF CYCLOPENTADIENYLNIOBIUM TETRACARBONYL AND CYCLOPENTADIENE MONOMER IN PENTANE 2 HR AT REFLUX GAVE 77PERCENT CYCLOPENTADIENYLDICARBONYL,(PI,CYCLOPENTADIENYL)NIOBIUM, M. 77-8DEGREES. SIMILARLY WERE PRED. C SUB5 H SUB5 NB(CO) SUB2,DIENE COMPLEXES FROM BUTADIENE, ISOPRENE AND CYCLOHEXADIENE, AS WELL AS CYCLOHEPTATRIENE (WHCIH CORRDINATED LIKE THE DIENE). FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF THE REACTION CONDITIONS ON THE INTERACTION OF C SUB5 H SUB5 FE(CO) SUB2 AR WITH PHOSPHINES AND PHOSPHITES -U-
AUTHOR-(03)-NESMEYANOV, A.N., MAKAROVA, L.G., POLOVYANYUK, I.V.

N

COUNTRY OF INFO--USSR

SOURCE--J. ORGANOMETAL. CHEM. 1970, 22(3), 707-12

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANOIRON COMPOUND, PHOSPHITE, ORGANIC PHOSPHORUS COMPOUND, PHOTOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0615 STEP NO--NE/0000/70/022/003/0707/0712

CIRC ACCESSION NO--AP0119527

UNCLASSIFIED

CIRC ACCESSION NO--AP0119527

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF C SUB5 H SUB5 FE(CO) SUB2 AR WITH PR SUB3 IN BENZENE IS INDEPENDENT OF THE NAUTRE OF ARYL GROUP AND THE PHOSPHINE, BUT DEPENDS ON THE REACTION CONDITIONS: THE PHOTOCHEM. REACTION GIVES C SUB5 H SUB5 FE(CO)(PR SUB3)AR, AND THE THERMAL C SUB5 H SUB5 FE(CO)(PR SUB3)COAR. THE REACTION OF C SUB5 H SUB5 FE(CO) SUB2 AR WITH P(OPH) SUB3 IS AGAIN INDEPENDENT OF THE NATURE OF THE ARYL GROUP BUT DEPENDS ON THE REACTION CONDITIONS.

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

1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SYNTHESIS OF OXOVINYL MERCURY DERIVATIVES -U-

AUTHOR-(03)-NESMEYANOV, A.N., RYBINSKAYA, M.I., POPOVA, T.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 946-8.

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, ORGANOMERCURY COMPOUND, ISOMERIZATION,
IODINATED ORGANIC COMPOUND, CHLORINATED ORGANIC COMPOUND, BENZENE
DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1314 STEP NO--UR/0062/70/000/004/0946/0948

CIRC ACCESSION NO--AP0134966
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 010

CIRC ACCESSION NO--AP0134968

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING ARCOCH:CHCL WITH 3 MOLES NAL IN ME SUB2 CO 3-5 HR GAVE ARCOCH:CHI; AR IS :PH, M. 57-8DEGREES; P,MEC SUB6H SUB4, M. 70DEGREES; P,CLC SUB6 H SUB4, M. 64-5DEGREES; AND P,BRC SUB6 H SUB4, M. 96-7DEGREES. THESE ILLUMINATED WITH UV LIGHT IN C SUB6 H SUB6NEGATIVE HG SUSPENSION 3-4 HR GAVE ARCOCH:CHHGI; AR EQUALS PH, M. 110DEGREES; P,MEC SUB6 H SUB4 M. 107-8DEGREES; AND P,CLC SUB6 H SUB4, M. 117-18DEGREES, IN 78-90PERCENT YIELDS. SIMILARLY WAS PREPD. ACCH:CHHGI,M.83-35DEGREES. THE PRODUCTS WERE PURIFIED BEST ON AL SUB2 O SUB3, AT TIMES SHOWING THE 2 GEOMETRIC ISOMETRIC FORMS, OF WHICH ONE WAS GENERALLY GREATLY PREDOMINANT. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70
1/2 011
TITLE--ACETYLATION OF 2,3,DIMETHYLBUTADIENE TRICARBONYL IRON -U-

AUTHOR-(03)-NESMEYANOV, A.N., ANISIMOV, K.N., MAGOMEDOV, G.K.

N

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 959

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BUTADIENE, IRON COMPOUND, CARBONYL COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605013/B08 STEP NO--UR/0062/70/000/004/0959/0959

CIRC ACCESSION NO--AP0140354
UNCLASSIFIED

CIRC ACCESSION NO--AP0140354

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION IN 1:1.2:1.2 MOLAR RATIO OF CH SUB2:CMECME:CH SUB2) SUB2.FE(CO) SUB3, ACCL, AND ALCL SUB3 OR IN 1:1.2:2.4 RATIO WITH AC SUB2 O AND ALCL SUB3 1 HR AT 0DEGREES GAVE UP TO 82DEGREES CH SUB2:CMECME:CHAC.FE(CO) SUB3, YELLOW, M. 5708DEGREES. ITS FORMATION WAS MUCH MORE FACILE THAN THAT OF THE BUTADIENE ANALOG, OWING TO THE POS, INDUCTIVE EFFECT OF THE 2 ME GROUPS. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

1/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PHOTODISPROPORTIONATION OF ARENE CYCLOPENTADIENYL IRON COMPOUNDS
-U-
AUTHOR-(03)-NESMEYANOV, A.N., VOLKENAU, N.A., SHILOVTSEVA, L.S.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR, 1970, 190(4), 857-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IRON COMPOUND, FERROCENE, UV RADIATION, ORGANIC SOLVENT, ABSORPTION SPECTRUM, PHOTOCHEMISTRY, BORON FLUORIDE, FURAN, DIOXANE, ETHYL ETHER, ACETONITRILE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/1562 STEP NO--UR/0020/70/190/004/0857/0859

CIRC ACCESSION NO--AT0100180
UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0100180

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UV IRRADN. OF C SUB6 H SUB6 FEC SUB5 H SUB5.BF SUB4 YIELDS UP TO 100PERCENT FERROCENE, FREE AROM. HYDROCARBON, AND INORG. FE AS FE(BF SUB4) SUB2. THE FOLLOWING PERCENT YIELDS OF THE REACTION WERE OBSD. IN INDICATED SOLVENTS: THF 76; DIOXANE 42; (CH SUB2 OME) SUB2 15; ET SUB2 O 10; MEOPH, 0; ETOAC, TRACE; MECN, 20; ME SUB2 CO, 15; AC SUB2 O, 8; ACOH, 0; H SUB2 O, TRACE; MEOH, 0; ETOH, 0; C SUB6 H SUB6 TRACE; PHNH SUB2, 3; PYRIDINE, 2. THE YIELDS WERE 0 IN PETROLEUM ETHER, MENO SUB2, ME SUB2 NCHO, ME SUB2 SO, MORPHOLINE, AND PIPERIDINE. NO DIRECT CONNECTION BETWEEN THE ABSORPTION SPECTRUM OF THE SOLVENT AND ITS REACTION EFFECTIVENESS WAS OBSD. THE FOLLOWING PERCENT YIELDS OF FERROCENE FROM SIMILAR DISPROPORTIONATION OF ARFEC SUB5 H SUB5 CATIONS WERE OBSD. UNDER THESE CONDITIONS (RUN IN THF): C SUB6 H SUB6, 42; MEPH, 32; 2,5-ME SUB2 C SUB6 H SUB4, 30; 1,3,5-ME SUB3 C SUB6 H SUB3, 20; CLPH, 30; MEOPH, 25; HO SUB2 CPH, 30; WITH ZERO YIELD FOR AR EQUALS PH SUB2, ETO SUB2 CPH, PHCN. THE FOLLOWING PERCENT YIELDS WERE OBTAINED WITH ANALOGS: 1,3,5-ME SUB3 C SUB6 H SUB3 FEC SUB5 H SUB4 ET PRIME POSITIVE 0; C SUB6 H SUB6 FEC SUB5 H SUB4 PH PRIME POSITIVE 48; C SUB6 H SUB6 FEC SUB5 H SUB4 CL PRIME POSITIVE 20; 1,3,5-ME SUB3 C SUB6 H SUB3 FEC SUB5 H SUB4 AC PRIME POSITIVE 5PERCENT. ALL REACTIONS WERE RUN IN DRY ARGON ATM.

UNCLASSIFIED

USSR UDC 542.91:547.257.2:547.514.72:546.725

NESMEYANOV, A. N., MAKAROVA, L. G., and VINOGRADOVA, V. N., Institute of Metal Organic Compounds, Academy of Sciences USSR

"Synthesis of σ-Ferrocenyl and σ-Ferrocenoyl Derivatives of Iron and Tungsten Cyclopentadienylcarbonyls"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 12, Dec 73, pp 2796-2798

Abstract: Reaction of ferrocenyl lithium with π-cyclopentadienyliron-dicarbonyl bromide yields π-cyclopentadienylirondicarbonyl-σ-ferrocenyl (I). Ferrocenoyl chloride reacted with π-cyclopentadienylirondicarbonyl sodium gives π-cyclopentadienylirondicarbonyl-σ-ferrocenoyl. Respective tungsten derivatives were obtained in an analogous manner. Decarbonylation of the ferrocenyl-tungsten complex by heating yields cyclopentadienyl-tungstentricarbonyl-σ-ferrocenyl. The iron complex requires more drastic conditions and some decomposition takes place in this reaction.

USSR UDC 542.943:547.257.3

NESMEYANOV, A. N., LEONOVA, Ye. V., KOCHETKOVA, N. S., RUKHLYADA, N. N., and BYCHKOV, N. V., Institute of Metal Organic Compounds, Academy of Sciences USSR

"Oxidation of 1,1'-Diethylcobalticinium Hexafluorophosphate"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 12, Dec 73, pp 2791-2792

Abstract: In presence of excess $KMnO_4$ in acid medium the hexafluorophosphate of 1,1'-diethylcobalticinium (I) is converted to the salt of 1,1'-diacetyl- and 1,1'-dicarboxycobalticinium. Other oxidation agents such as MnO_2 and CrO_3 in acidic medium fail to react with (I).

1/1

Food Technology

USSR

NESMEYANOV, A. N., Academician, Director of the Institute of Hetero-Organic Compounds of the Academy of Sciences USSR

"Our Food: What Will It Be Like?"

Moscow, Leninskoye Znamya, 22 Apr 73, p 4

Abstract: While agriculture is capable of supplying carbohydrates and fats, at least one half of the world's people do not get enough protein, the only component of food which gives nitrogen. In view of the fact that even the best protein foods, milk, eggs, and meat, are the products of the animal stage of the food chain and during this stage large percentages (75-90%) of the original protein in the animals' feed is lost, the question has naturally arisen: would it be more economical to derive the protein directly from the feed and use it as food. A method has been developed in England for extracting protein from grass and making milk and cheese out of it, and similar experiments have been conducted in the United States. The costs of producing such food are substantially lower. Industrial production of yeast protein is most promising; in the USSR the production of yeasts is increasing rapidly and will reach 1 million tons in the next decade. At the Institute of Hetero-Organic Compounds a cavitation mill suggested by S. V. Rogozhin is used to extract protein from

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NESMEYANOV, A. N., Leninskoye Znamya, 22 Apr 73, p4

yeast. Another method, developed jointly by the institute and the All-Union Scientific Research Institute of Biosynthesis of Protein Substances, involves extracting amino acids from the yeast and collecting them together with larger protein fragments on an ion exchanger. Both preparations are the nutritional equivalent of meat and offer a realistic raw material for food during the current five-year plan and the next one. Another method involves synthesis of replaceable and irreplaceable amino acids. These acids can be given to patients with specific deficiencies, but their use in normal food is a task of the more remote future. Concerning the taste of synthetic foods, all four distinguishable taste sensations can be developed. Odor presents a more complex problem. The composition of food odors can be analyzed with current chromotographic equipment, but they contain dozens of components and creating synthetic odors will be a labor-consuming task. In the United States, a protein solution is "spun" in a way similar to that used with synthetic yarn to reproduce the texture of meat. In the USSR a simpler method is being employed of manufacturing articles with homogenous structure, such as sausages and filling for "pirogi" [meat-filled pastries]. This overcomes the problem of taste and odor, and there are many products in which protein additives can be used, such as candies, jellies, and fruits. Today the world has entered the age of synthetic foods just as, some decades ago, it entered the age of synthetic fibers. But there

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NESMEYANOV, A. N., Leninskoye Znamya, 22 Apr 73, p 4

are still many problems ahead, not just for medical scientists and physiologists, but also for chemists, microbiologists, food experts, and others.

USSR UDC 542.957:547.559.77:547.559.78:547.1'118

NESMEYANOV, A. N., USTYNYUK, N. A., BOGATYREVA, L. V., and MAKAROVA, L. G., Institute of Element Organic Compounds, Academy of Sciences USSR

"Reactions of the Phenyl Derivatives of the Metal Carbonyls of Molybdenum and Tungsten With Triphenylphosphine and Triphenyl Phosphite"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, 1, Jan 73, pp 62-67

Abstract: The products of the reaction of $C_5H_5W(CO)_3C_6H_5$(I) with $P(C_6H_5)_3$ and $P(OC_6H_5)_3$ -- e.g., $C_5H_5W(CO)_2LC_6H_5+CO$; $C_5H_5W(CO_2)LCO\ C_6H_5$; or $W(CO)_3L_3+\{C_5H_5\} + \{C_6H_5\}$ -- depend on the condition. (L is either of the P ligands). A series of C_{31} to C_{57} phospho derivatives of W and Mo were prepared and characterized by physical data, elemental composition, and spectral and NMR data. Stereochemistry, exchange of the ligands, and the effects of a limited number of solvents were considered.

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USSR UDC 541.49:547.558.1:547.355.9

NESMEYANOV, A. N., PEREVALOVA, E. G., KRIVYKH, V. V., KOSINA, A. N., FRANDBERG, K. I., and SMYSLOVA, E. I., Moscow State University imeni M. V. Lomonosov

"Triphenylphosphine Complexes of Benzyl- and Vinylgold"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 653-654

Abstract: Alkyl and aryl compounds of monovalent gold are stable only in the form of triphenylphosphine complexes. The benzyl compound was synthesized according to the reaction

$$C_6H_5CH_2MgCl + Cl\ Au \cdot P\ (C_6H_5) \longrightarrow C_6H_5CH_2Au \cdot P\ (C_6H_5)_3$$

The yield was 85% in toluene and 40% in tetrahydrofuran. The nmr spectrum of the product indicated a proton signal in the phenyl group (in the range of 6.9-7.3 m.d.) and two signals from the methylene group (in the range of 2.54 to 2.76 m.d.). By using the double nuclear magnetic resonance of H^1-P^{31}, it was shown that the interaction of the protons from the methylene group with phosphorus caused peak splitting. The vinyl compound was obtained from the reaction

$$CH_2 = CHMgBr + Cl\ Au \cdot P\ (C_6H_5)_3 \xrightarrow[50^\circ]{THF} CH_2 = CH\ Au \cdot P\ (C_6H_5)_3$$

The yield was 90%. 1/1

USSR UDC 541.124:541.57:541.49:547.514.72:546.72

NESMEYANOV, A. N., MAKAROVA, L. G., and POLOVYANYUK, I. V., Institute for Organic Elemental Compounds, Academy of Sciences USSR

"The Influence of the Nature of the Phosphorus Ligand on the Character of Interaction Between the Central Atom and the Surrounding Ligands in σ-Aryl Cyclopentadienyliron Carbonyl Complexes"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 607-609

Abstract: During the study of the characteristics of σ-aryl cyclopentadienyliron carbonyl complexes, we examined the influence of the nature of the phosphorus ligand on the character of the interaction of the iron atom with the carbonyl and σ-aryl ligands. To do this, a series of fluorophenyl complexes of the type $C_5H_5Fe(CO)(L)C_6H_4F$-m,p were synthesized where L = $(C_6H_5)_3$, $P(OC_6H_5)_3$, and CO. The IR and nmr spectra were made. In the IR spectra $\nu_{C\equiv O}$ for the meta form is 1927; 1957; 1963 and 2018 for the above "L" series; and for the para form, 1925; 1949; 1961 and 2015. The nmr spectra of F^{19} showed δ vales of +4.47, +4.29, +2.35 for the meta form and +13.64, +13.10, and +10.95 for the para form. The carbonyl group can act as a donor through both induction and resonance. The aryl groups, however, participate only through induction. 1/1

NESMEYANOV, A. N.

organic chemistry

JPRS 54353
29 Oct 71

SOME POINTS OF GROWTH OF ORGANIC CHEMISTRY

[Report of Academician ~~A. N. Nesmeyanov;~~ Moscow, Vestnik Akademii Nauk SSSR, Russian, Vol 41, No 8, August 1971, pp 25-41]

In a brief report one can speak only of a few fragments
of organic chemistry, arbitrarily selected from many possible
ones and given on at times a small, at times a very large plane.
Organic chemistry is the structural architecture of molecules.
Everything therefore will be subordinated to structure and trans-
formation in their interrelations. The arrangement and rear-
rangement of the carbon skeleton is the main task in syn-
thesis, and hydrocarbons form the starting raw material and class-
ification group of compounds. It is natural to start with it.

In 1942, at the session of the Academy of Sciences USSR
dedicated to the 25th anniversary of Soviet power, it fell to
me to present a report on organic chemistry in the USSR during
the 25 years. I began it with the following scheme, which
summed up the contemporary results of investigations of N. D.
Zelinskiy and his school on heterogenic catalytic transformations
of hydrocarbons. That work had "revived chemical corpses," in
the expression of Zelinskiy, petroleum hydrocarbons, and had
transformed them into plastic material. Along with pyrolysis,
cracking and alkylation of olefins those reactions served later
as the foundation of petrochemistry and petrochemical synthesis.
Cyclization, aromatization, ring scission, and dehydrogenation
into olefins and diolefins, achieved by Zelinskiy's school, were
studied exhaustively in the works of B. A. Kazanskiy, A. A. Ba-
landin and their pupils. Hydrocarbons of certain types of struc-
tures either are used as such (various fuels, polymerization in-
to polyethylene, polypropylene, rubbers, etc) or are transformed
into their derivatives (containing halogen, oxygen, nitrogen,
etc).

In recent years polyhedral hydrocarbons have proven to
be on the crest of the wave of chemical science. Those closed

Organometallic Compounds

USSR UDC 247.13

PEREVALOVA, E. G., LEMENOVSKIY, D. A., GRANDBERG, K. I., and NESMEYANOV, A. N., Moscow State University imeni M. V. Lomonosov

"Ferrocenylgoldtriphenylphosphine Complexes With Monovalent Gold Salts"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 1, Jan-Feb 72, pp 93-96

Abstract: Reacting hydroborofluoric acid with ferrocenylgoldtriphenylphosphine (I) yields the borofluoride of (triphenylphosphineferrocenylgold)-triphenylphosphinegold (II). Excess of HBF_4 shows no particular effect on the reaction course or on the yield. PMR spectrum of (II) resembles the spectra of ferrocenylcarbcations. The data of NMR and UV spectroscopy indicate that a considerable positive charge is located on the gold atom next to the cyclopentadienyl ring in the compound (II). Compound (II) is believed to be monovalent gold borofluoride bound with two stabilizing ligands - triphenylphosphine and ferrocenylgold triphenylphosphine; the positive charge is evidently delocalized between the gold atoms. Compound (II) is also obtained by reacting (I) with $(C_6H_5)_2Fe^+BF_4^-$, $NO_2^+BF_4^-$, $CH_3CO^+BF_4^-$, except that with these reagents their excess lowers the yield of (II). Reacting (I) with concentrated H_2SO_4 produces

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PEREVALOVA, E. G., et al., Doklady Akademii Nauk SSSR, Vol 202, No 1, Jan-Feb 72, pp 93-96

the sulfate analogue of the compound (II), somewhat less stable than the borofluoride complex. The UV and PMR spectra of the sulfates are identical with those of the borofluorides.

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USSR

UDC 547.13

NESMEYANOV, A. N., Academician, POSTNOV, V. N., LESHCHEVA, I. F., SURKOV, B. A., and SAZONOVA, V. A., Moscow State University imeni M. V. Lomonosov

"Ferrocenylvinylcarbonium Ions"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 4, 1971, pp 858-861

Abstract: The vinylog of the diphenylferrocenylcarbonium ion during its formation under goes an allyl shift to give an α-ferrocenylcarbonium ion. Since the p-dimethylamino group is a strong carbonium ion stabilizer, the authors undertook to compare the part played by the p-dimethylaminophenyl and ferrocenyl groups simultaneously in the stabilization of the allyl cation. The tetraphenylborate of the vinylog of p-dimethylaminodiphenylferrocenylcarbonium was obtained from β-ferrocenylvinyl-p-dimethylaminodiphenylcarbinol by precipitation with sodium tetraphenulborate in glacial acetic acid. The salt was bound by its α-carbon atom (relative to ferrocene) with dimethylaniline in the p-position. To determine the structure of the resultant carbonium ion, spectra were taken of its salts -- tetraphenylborate and borofluoride, as well as the spectrum of β-ferrocenylvinyl-p-dimethylaminodiphenylcarbinol. The results indicate that the allyl cation reacts

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USSR

NESMEYANOV, A. N., et al., Doklady Akademii Nauk SSSR, Vol 200, No 4, 1971, pp 858-861

like a typical α-ferrocenylcarbonium ion with its α-carbon atom. This indicates localization of a significant part of the formed positive charge on the latter. The almost quantitative reaction on the α-carbon indicates the prevailing influence of the ferrocenyl group in the stabilization of the carbonium ion as compared with the p-dimethylamino group.

Acc. Nr: AT0049879

Abstracting Service: CHEMICAL ABST. 5/70

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Ref. Code: UR 0020

100859s **Metalation of dibenzenechromium and some of its homologs.** Nesmeyanov, A. N.; Yur'eva, L. P.; Levchenko, S. N. (Inst. Elementoorg. Soedin., Moscow, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190(1), 118-21 [Chem] (Russ). Treating 4.3 g BuLi in $(CH_2NMe_2)_2$-hexane over 1 hr with 0.67 g dibenzenechromium (I), refluxing 2 hr, and adding 16.7 ml MeI with ice cooling gave a small amt. isomeric xylenes, MePh, and 1,2,4- and 1,3,5-$Me_3C_6H_3$; a similar reaction with ditoluenechromium (II) and di-*m*-xylenechromium (III) gave similar results. The 1st Li atom enters only the benzene ring and the Me group is unaffected in reaction of II; the 2nd Li atom enters the benzene ring predominantly also, but some of it does attack the Me group, yielding 1,2,4- and 1,3,5-$Me_3C_6H_3$ as well as isomeric methylethylbenzenes. The Me group directs the Li atom to *m*- and *p*-positions of the ring. In reaction of III the 1,3,5-isomer is formed predominantly also. G. M. Kosolapoff

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19801811

Organophosphorous Compounds

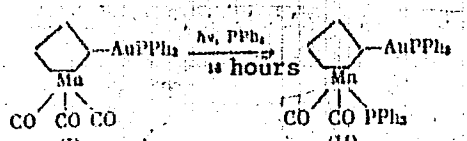
USSR UDC 541.49:547.558.1:541.1'13

NESMEYANOV, A. N., NEREVALOVA, E. G., BAUKOVA, T. V., GRANDBERG, K. I.

"Triphenylphosphine Complex of Cyclopentadienyl (Manganesedicarbonyltriphenylphosphine) Gold"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, 1973, pp 2641-2642

Abstract: The triphenylphosphine complex of cyclopentadienyl (manganesedicarbonyltriphenylphosphine) gold (II) was obtained:



(I) (II)

The structure of the (II) complex was established on the basis of spectral data and confirmed by the chemical behavior of the compound. In the infrared spectrum of (II) a shift of the two intense absorption bands of the CO groups toward the long-wave range is observed by comparison with the spectrum of

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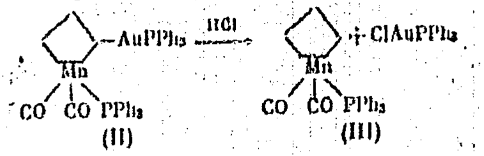
NESMEYANOV, A. N., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, 1973, pp 2641-2642

cyclopentadienyltricarbonylmanganese (I). This usually occurs on replacement of one of the CO groups in the cymantrene by a stronger electron-donor ligand /Kursanov, D. N., et al., Izv. AN SSSR, Ser. Khim., 2842, 1969/. In the paramagnetic resonance spectrum of (II) signals are revealed from the protons of the phosphine groups along with two multipleths of the protons of the substituted cyclopentadienyl ring shifted to the stronger field by comparison with the signals in (I). In the nuclear magnetic resonance spectrum of ^{31}P of (II), two signals of the phosphorus nuclei from nonequivalent triphenylphosphine groupings are observed.

When (II) reacts with concentrated hydrochloric acid, (III) and the triphenylphosphine complex of gold chloride are formed:



The complex (II) is less stable than (I) especially in solutions, and it decomposes during chromatographic studies in a column with aluminum oxide in contrast to (I).

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Organometallic Compounds

USSR UDC 542.944:546.14:547.258.11

NESMEYANOV, A. N., NOGINA, O. V., DROGUNOVA, G. I., and LOKSHIN, B. V.,
Institute of Hetero-Organic Compounds, Academy of Sciences USSR

"Bromination of Pentamethylcyclopentadienyltitanium Tribromide"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, 1973,
pp 406-410

Abstract: Studies were conducted on the reactivity of the titanium-cyclopentadienyl bond as influenced by the substituents on the cyclopentadienyl ring. Pentamethylcyclopentadienyltitanium tribromide (I) was obtained by dropwise addition, with mixing, of 8.8 g of acetyl bromide in 4 ml hexane to 7.7 g of $C_5(CH_3)_5Ti(OC_2H_5)_3$ in 7 ml of hexane. The crystals formed overnight represented a 91% yield (9.36 g) of C_5-$(CH_3)_5TiBr_3$, m.p. 242-250° (from hexane), and were dark-red. The synthesis and other experiments were conducted in an atmosphere of inert gas. I was characterized by IR, PMR, and NMR spectroscopy. The substitution of a single bromine atom for a hydrogen atom in a methyl group was achieved under the following conditions: 1) 2.34 g of bromine was added with mixing to 5 g of I in 250 ml of CCl_4. The mixture was irradiated with a 220 watt Hg-quartz lamp for 10 h at 45-50° at a distance of ∼50 cm; the yield of

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NESMEYANOV, A. N., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, 1973, pp 406-410

[$C_5(CH_3)_4CH_3Br$] $TiBr_3$(II) was 40%.2) II could also be obtained with an excess of bromine and longer exposure times in 48% yield. Bromination of I could also be obtained with N-bromosuccinamide in the presence of either azodiisobutyronitrile or UV irradiation; the respective yields were 13 and 28%. Introduction of even a single bromine atom into I markedly alters the reactivity of the titanium-cyclopentadienyl bond to nucleophilic reagents. Ethanol was capable of breaking the π -bound ring of II even after a few minutes at room temperature. The data indicate that in addition to breaking the $Ti\text{-}C_5(CH_3)_4CH_2Br$ bond, there occurs dehydrobromination of the organic fragment of the molecule which, apparently, results in fulvene formation.

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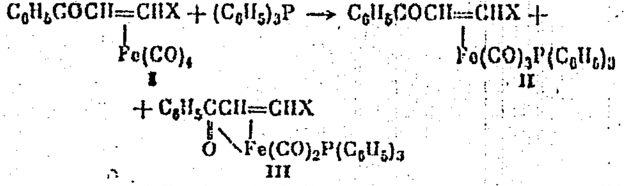
USSR UDC 547.241

NESMEYANOV, A. N., RYBIN, L. V., GUBENKO, N. T., PETROVSKIY, P. V., and RYBINSKAYA, M. L., Institute of Elemental Organic Compounds Academy of Sciences USSR

"The Reaction of Triphenylphosohine with Iron Carbonyl Complexes of β-Substituted α, β -Unsaturated Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2473-2477

Abstract: It was shown that the stability of the metal lignad bond in mono-olefin π complexes of iron may be determined by the reaction of the complex with triphenylphsophine such as in the following reaction:



a) $X = COC_6H_5$, б) $X = COOCH_3$.

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NESMEYANOV, A. N., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2473-2477

The reaction of trans dibenzoylmethylene and trans methyl esters of β -benzoylacrilic acid with triphenylamine in methyl alcohol and heptane in room temperature and at heating to 60-70°C resulted in the replacement of the CO ligand with the formation of complexes II and III above. The order of increasing ease of substitutions of the ligands is

$$-CO-CH=CH-CO < CO < -CH=CH-Co-.$$

From this it can be seen that the relative ease of substitution increases with the increasing strength of the π acids. Structures were confirmed by IR and NMR spectra.

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Organometallic Compounds

USSR UDC 542.91:547.1'13:546:72

NESMEYANOV, A. N., MAKAROVA, L. G., and VINOGRADOVA, V. N., Institute of Metalorganic Compounds, Acad. Sc. USSR

"Synthesis and Properties of π-Cyclopentadienylirondicarbonyl-σ-ferrocenyl"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, Jul 72, pp 1600-1604

Abstract: Reaction of diferrocenylmercury with cyclopentadienylirondicarbonyl iodide yields π-cyclopentadienylirondicarbonyl-σ-ferrocenyl (I) -- a crystalline compound of orange color. In solid state it is stable in air, dissolves easily in organic solvents, but the solutions are less stable. The structure of (I) was proven by IR, PMR and NGR spectroscopy as well as by reactions with HCl, bromine, and mercuric chloride. Reaction of (I) with $(C_6H_5)_3P$ takes place without rearrangement, evidently one CO group being replaced by $(C_6H_5)_3P$.

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1/2 037 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--CHEMICAL EFFECTS OF ELECTRON CAPTURE BY CERTAIN IODINE-125
COMPOUNDS STUDIED BY THE MOSSBAUER EFFECT ON TELLURIUM-125 -U-

AUTHOR-(04)-BABESHKIN, A.M., LAMYKIN, E.V., LEBEDEV, V.A., NESMEYANOV,
A.N.

N

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV. KHIM. 1970, 11(1), 117-18

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTROSCOPIC ANALYSIS, MOSSBAUER EFFECT, TELLURIUM, IODINE,
FROZEN FLOW, NITRIC ACID, AQUEOUS SOLUTION, ELECTRON CAPTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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CIRC ACCESSION NO--AP0107212

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PROCESSING DATE--02OCT70

UNCLASSIFIED

2/2 037

CIRC ACCESSION NO--AP0107212

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE MOESSBAUER EFFECT OF PRIME125 TE, WITH THE ABSORBER BETA PRIME125 TEO SUB3 AND THE SOURCE PRIME125 I, IN VARIOUS CHEM. FORMS (NAI, NAI.2H SUB2 O, KIO SUB3, NA SUB3 H SUB2 IO SUB6, FROZEN SOLNS. OF NAI IN H SUB2 O, AND OF NA SUB3 H SUB2IO SUB6 IN 0.1 N HNO SUB3). FOR NAI A SINGLET LINE OF REGULAR SHAPE AND WITHOUT BROADENING WAS FOUND. FOR NAI.2H SUB2 O AND THE FROZEN SOLN. OF NAI IN H SUB2 O, A SPECTRUM WITH QUADRUPOLE SPLITTING WAS OBTAINED, DELTA IS GREATER THAN 10 MM-SEC. FOR KIO SUB3 THE SPECTRUM WAS BROADENED GREATLY, ASYM., AND SEPD. INTO 2 SINGLETS WITH AN INTENSITY RATIO OF SIMILAR TO ONE HALF, INDICATING THAT, AFTER ELECTRON CAPTURE IN KIO SUB3, THE TE IS STABILIZED IN MORE THAN 1 FORM. FOR THE FROZEN SOLN. OF NA SUB2 H SUB2 IO SUB6 IN 0.1 N HNO SUB3, THE SPECTRUM WAS GREATLY BROADENED AND ASYM. DUE TO THE PRESENCE OF MORE THAN 1 STABILIZED FORM OF TE.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--EUROPIUM AND DYSPROSIUM VALENCE STATES IN LAVES PHASES AND ISOMER
SHIFTS IN MOESSBAUER SPECTRA -U-

AUTHOR-(03)-YEFREMOV, E.N., BABESHKIN, A.M., NESMEYANOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV. KHIM. 1970, 11(1), 46-8

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTRON DENSITY, ISOMER, ELECTRON STRUCTURE, RARE EARTH
METAL, ZINC COMPLEX, NICKEL COMPLEX, ALUMINUM COMPLEX, COPPER COMPLEX,
DYSPROSIUM, EUROPIUM, GALLIUM, RHODIUM, PALLADIUM, MOSSBAUR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0610 STEP NO--UR/0189/70/011/001/0046/0048

CIRC ACCESSION NO--AP0107207
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107207

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ISOMER SHIFTS AND ELECTRON DS. ARE TABULATED FOR THE INTERMETALLIC COMPDS. OF DY AND EU WITH GA, CU, PT, AL, RH, NI, PD, AND ZN. THE VALENCE OF EU DEPENDED ON THE POPULATION OF THE D LEVEL IN THE TRANSITION METALS WHICH WERE THE 2ND CONSTITUENT OF THE LAVES PHASES. THE ELECTRON D. AND THE VALENCE STATE FOR A RARE EARTH METAL DEPENDS ON THE ELECTRONIC STRUCTURE OF THE 2ND COMPONENT.

UNCLASSIFIED

UDC 547.13

USSR

PEREVALOVA, E. G., LEMENOVSKIY, D. A., BAUKOVA, T. V., SMYSLOVA, YE. I.,
GRANDBERG, K. I., and NESMEYANOV, A. N., Moscow State University imeni
M. V. Lomonosov

"Reaction of Ferrocenyl- and Phenyl(triphenylphosphine)gold with Electrophilic Reagents"

Leningrad, Doklady Akademii Nauk SSSR, Vol 206, No 4, Oct 72, pp 883-996

Abstract: Reactions of ferrocenyl- and phenyl(triphenylphosphine)gold with electrophilic reagents was studied. No electrophilic substitution at the gold atom took place in these reactions, the products indicating that a homolytic process occurred in these reactions. For example, when gerrocenyl-(triphenylphosphine)gold reacted with acetic anhydride or acyl chlorides of acetic or trichloroacetic acids, only ferrocene, biferrocenyl and a salt of the composition $XAuP(C_6H_5)_3$ where X = Cl or $OCOCH_3$ were formed. No acylferrocene was isolated. Analogous reactions occur with phenyl(triphenylphosphine)gold, no electrophilic substitution taking place. The results obtained can be explained by the single electron transfer mechanism, this being the first step in a series of reactions. The electron from the C-Au bond is transferred to the splitting reagent, which acts as an electron acceptor.

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Organometallic Compounds

USSR UDC 547.13

GRANDBERG, K. I., BAUKOVA, T. V., PEREVALOVA, E. G., NESMEYANOV, A. N., Academician, Moscow State University imeni M. V. Lomonosov

"[p-Tolyl-(triphenylphosphine)-gold]-triphenylphosphinegold Borofluoride"

Moscow, Doklady Akademii Nauk SSR, Vol 206, No 6, 1972, pp 1355-1358

Abstract: The synthesis of [ferrocenyl-(triphenylphosphine)-gold]triphenylphosphinegold borofluoride (I) -- a new type of organogold compound containing two gold atoms per molecule -- was reported earlier [E. G. Perevalova, et al., DAN., Vol 202, 97, 1972]. The formation of this type of complex is not a specific property of ferrocenyl-(triphenylphosphine)-gold. Organogold compounds of the benzene series -- p-tolyl-(triphenylphosphine)-gold (II) and phenyl-(triphenylphosphine)-gold (III) -- also react with HBF_4 yielding similar complexes; p-tolyl-(triphenylphosphine)-gold was obtained from p-tolyllithium and the triphenylphosphine complex of gold chloride. The reaction of II and III with an ether solution of HBF_4 leads to the formation of borofluorides of [p-tolyl-(triphenylphosphine)-gold]-triphenylphosphinegold (IV) and [phenyl-tripenylphosphine)-gold]-triphenylphosphinegold (V), respectively. The auriferous ligand $CH_3C_6H_4\cdot Au\cdot P(C_6H_5)_3$ in

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USSR

GRANDBERG, K. I., et al., Doklady Akademii Nauk SSSR, Vol 206, No 6, 1972, pp 1355-1358

combination with IV is easily replaced by other electron donor ligands — triphenylphosphine, morpholine, ferrocenyl-(triphenylphosphine)-gold. In the presence of an aqueous solution of sodium chloride, II and the triphenylphosphine complex of gold fluoride are formed. The paramagentic resonance spectra . and ultraviolet spectroscopic data of some of the above organogold compounds were analyzed. The experimental procedures and results for the reaction HBF_4 and II, HBF_4 and phenyl-(triphenylphosphine)-gold, an aqueous solution of sodium chloride and IV, IV and triphenylphosphine, IV and ferrocenyl-(triphenylphosphine)-gold, IV and morpholine, and IV and ferrocenyl-(triphenylphosphine)-gold are described.

2/2

Organometallic Compounds

USSR UDC 542.957:547.357.2

NESMEYANOV, A. N., BORISOV, A. YE., and NOVIKOVA, N. V., Institute of Heteroorganic Compounds, Academy of Sciences USSR

"Reaction of Some Organometallic Monohydrides With Ethynylferrocene"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 72, pp 1372-1375

Abstract: Continuing their studies in the field of bimetallic derivatives of the ethylene series $R_{n-1}M^nCH=CHM^mR_{m-1}$ which contain various combinations of elements (Sn, Ge, Sb, As, Si, Hg) in the molecule, the authors studied the addition of triphenylstannane, triphenylgermane and diphenylstibine to ethynylferrocene and obtained respectively: (1-ferrocenyl-2-triphenylstannyl)ethylene (I), (1-ferrocenyl-2-triphenylgermyl)ethylene and (1-ferrocenyl-2-diphenylstibyl) ethylene. I reacts with corrosive sublimate to form β-ferrocenylvinylmercuric chloride, symmetrization of which with KI gives di-(β-ferrocenylvinyl)mercury, which under the action of corrosive sublimate is readily converted again to β-ferrocenylvinylmercuric chloride. Under the action of bromine I is converted into β-bromovinylferrocene. α-Chlorovinylferrocene reacts with lithiumtriphenylstannane to give (1-ferrocenyl-1-triphenylstannyl)-ethylene.

USSR

UDC 542.957:547.559.59'118:547.284.3

NESMEYANOV, A. N., GRANDBERG, K. I., SMYSLOVA, YE. I., and PEREVALOVA, E. G.,
Moscow State University Imeni M. V. Lomonosov

"Triphenylphosphinegoldacetone"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 72,
p 2375

Abstract: Reaction of vinylgoldtriphenylphosphine with an acetone solution of potassium permanganate at 0° yields triphenylphosphinegoldacetone (I). HCl, $HgCl_2$ and Br_2 add to (I) in the 1,2-position, while acetyl chloride reacts via 1,4-addition yielding isopropenylacetate and triphenylphosphinegold chloride.

UNCLASSIFIED PROCESSING DATE--11SEP70

1/2 017

TITLE--REACTIONS OF TRITIUM RECOIL ATOMS IN PI HEXANE-BENZENE BINARY MIXTURES -U-

AUTHOR--AVDONINA, E.N., ELZAKHIR, A., NESMEYANOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11(1), 42-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--HEXANE, BENZENE, TRITIUM, NEUTRON RADIATION, CHROMATOGRAPHY, CHEMICAL LABELING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0151
STEP NO--UR/0189/70/011/001/0042/0045

CIRC ACCESSION NO--AP0106811

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106811

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERACTIONS OF T RECOIL ATOMS WITH HEXANE AND C SUB6 H SUB6 IN THEIR MIXTS. WITHOUT I AND IN THE PRESENCE OF I (5 TIMES 10 PRIME NEGATIVE3 MOLE-L.) WERE STUDIED BY IRRADIATING THE MIXTS. IN QUARTZ AMPULS FOR 15 MIN WITH A N FLUX OF 1.2 TIMES 10 PRIME13 N-CM PRIME2 SEC AT 70DEGREES AND FOR 2 HR WITH A N FLUX OF 9 TIMES 10 PRIME19 N-CM PRIME2 SEC AT MINUS 170DEGREES. THE WALLS OF THE AMPULS WERE COATED WITH LI SUB2 CO SUB3 POWDER TO ACT AS THE SOURCES OF T RECOIL ATOMS. THE COMPNS. OF THE REACTION PRODUCTS WERE DETD. BY GAS LIQUID CHROMATOG. AND BY ACTIVITY MEASUREMENTS. THE MAIN PRODUCT OF THE REACTION OF T RECOIL ATOMS WITH HEXANE WAS HT (SIMILAR TO 55PERCENT). THE HIGH BOILING FRACTIONS AND THE PRODUCT OF HEXANE CLEAVAGE CONSTITUTE 7 AND 11PERCENT, RESP., OF THE TOTAL ACTIVE PRODUCTS. THE INTRODUCTION OF I HAS NO EFFECT ON ACTIVITY DISTRIBUTIO AMOG THE PRODUCTS OF THE T HEXANE REACTION, BUT DECREASES THE YIELD OF THE HIGH BOILING FRACTION AND INCREASES THE YIELD OF ACTIVE C SUB6 H SUB6 IN ITS REACTION WITH T RECOIL ATOMS. THE RECOIL T ATOMS ARE STABILIZED IN THE FOLLOWING REACTION PRODUCTS: HT, THE SUM OF LABELED GASES FORMED BY THE CLEAVAGE OF HEXANE BY THE RECOIL T ATOMS, AND PRODUCTS CONTG. T ATOMS IN THE COMPONENTS OF THE INITIAL MIXT. AND IN COMPLEX PRODUCTS FORMED DURING THE REACTION. THE TOTAL YIELD OF GASEOUS PRODUCTS IS LINEARLY DEPENDENT ON THE MIXT. CONCN. THE CONCN. DEPENDENCE OF THE YIELD OF LIQ. AND HIGH BOILING REACTION PRODUCTS IS ALSO CLOSE TO LINEAR AND IS ALMOST INDEPENDENT OF THE PRESENCE OF I; HOWEVER, THE ACTIVITY DISTRIBUTION IS MARKEDLY DEPENDENT ON THE PRESENCE OF I.

UNCLASSIFIED

UDC 616.24-002.1-085.849.112

USSR

NESMEYANOVA, E. I., Municipal Clinical Hospital, Vladivostok

"Use of Microwaves in the Comprehensive Therapy of Acute Pneumonia"

Moscow, Voprosy Kurortologii, Fizioterapii i Lechebnoy Fizicheskoy Kul'tury, No 4, 1972, pp 345-347

Abstract: A series of 79 patients with serious forms of acute pneumonia were treated with microwaves, sulfanilamides, antibiotics, cardiovascular stimulants, and vitamins while a control group received the same therapy without exposure to microwaves. The course of microwave treatment (50 to 60 w) consisted of 10 to 14 daily procedures lasting 15 to 20 minutes. After 3 to 7 procedures chest pains, cough, moist rales, and crepitation disappeared or diminished considerably compared to the control. Sleep, appetite, and sense of well-being improved more rapidly than in the control. X-rays signs of pneumonia disappeared completely after the course of microwave therapy in 56. All the patients tolerated the procedures very well and none showed any adverse cardiovascular changes.

1/1

Organometallic Compounds

UDC 547.242+542.957

USSR

MIKUL'SHINA, V. V., NESMEYANOV, N. A., and REUTOV, O. A., Academician, Moscow State University imeni M. V. Lomonosov

"Reactions of Arsonium Salts With Organolithium Compounds"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 3, 1972, pp 596-598

Abstract: In reactions of arsenium salts with organolithium compounds, the initial arsonium salt alkylates the ylide and is regenerated upon completion of the reaction. Heating decomposes the ylide. A 50% to 100% excess of $C_6H_5CH_2Li$ reacted with $(C_6H_5)_4As^+Br$ in tetrahydrofuron to yield diphenylmethane; 1,2-diphenylethane; diphenyl; triphenylarsine (80%); and benzene. an excess of methyllithium with tetraphenylarsonium bromide yields methane, trimethylarsine, dimethylphenylarsine, methyldiphenylarsine, triphenylarsine as well as diphenylmethane, 1,2-diphenylethane, diphenyl, and benzene. Butyllithium heated with benzyltriphenylarsonium iodide yields triphenylarsine, trans-stilbene, diphenyl, diphenylmethane, 1,2-diphenylethane, butydiphenylarsine, and dibutylphenylarsine. Thus, unlike analogous phosphorus compounds, compounds of pentacovalent arsenic do not decompose into hydrocarbon and ylide.

1/1

USSR

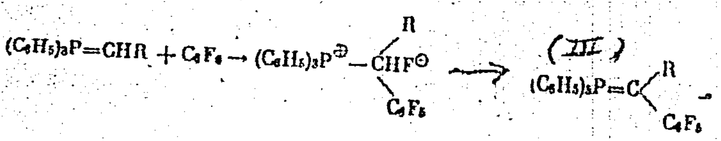
UDC 542.91:547.341:547.539.16

NESMEYANOV, N. A., BERMAN, S. T., and REUTOV, O. A., Moscow State University imeni M. V. Lomonosov

"Reaction of Phosphorus Ylids with Perfluorobenzene"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 605-606

Abstract: Perfluorobenzene is known to lose one of the fluorine atoms during nucleophilic attack. Five compounds were prepared; chemical equations and NMR data are presented for several of the compounds. All the reactions were carried out in anhydrous solvents in an atmosphere of dry pure nitrogen. For the nmr data, a working frequency of 60 MH_2 and a CF_3COOH standard were used. Triphenylphosphinepentafluorophenylmethylene (III) was prepared as follows:



$$(C_6H_5)_3P{=}CHR + C_6F_6 \rightarrow (C_6H_5)_3P^{\oplus}{-}\underset{C_6F_5}{\overset{R}{C}}HF^{\ominus} \longrightarrow (C_6H_5)_3P{=}C\langle^{R}_{C_6F_5}$$

(III)

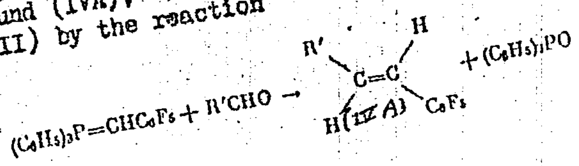
1/3

UDC 542.91:547.341:547.539.16

USSR

NESMEYANOV, N. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 605-606

From (III), 2,3,4,5,6-pentafluorobenzyltriphenylphosphonium iodide was prepared; nmr data gave δ, m.d.: 58.5 (multiplet), 72.7 (triplet) and 82.2 (multiplet). Compound (IVA), 2,3,4,5,6-pentafluoro-4'-nitrostilbene was synthesized from (III) by the reaction



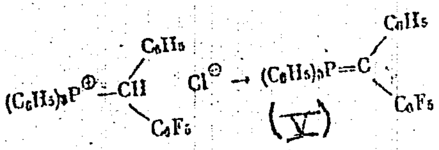
$$(C_6H_5)_3P{=}CHC_6F_5 + R'CHO \rightarrow R'(H)C{=}C(H)C_6F_5 \ (IVA) + (C_6H_5)_3PO$$

where R' = p - $NO_2C_6H_4$.

There are three peaks (2:1:2), δ, m.d.: 66.0 (multiplet), 78.5 (triplet), 86.2 (multiplet). Compound (IVB), 2,3,4,5,6-pentafluoro-4'-chlorostilbene was prepared using an analogous reaction for which R' = p - ClC_6H_4. The nmr characteristics were similar, with the triplet shifting to 79.2 the former multiplets to 66.2 and the latter remaining at 86.2. Compound (V), triphenylphosphine-(2,3,4,5,6-pentafluorophenyl)phenylmethylene, was prepared by the reaction

USSR

NESMEYANOV, HA. et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 605-606



(V)

The nmr spectra of ^{19}F has three multiplets, δ m.d.: 58.3, 81.4, and 86.6.

3/3

UDC 542.957+547.242+547.512

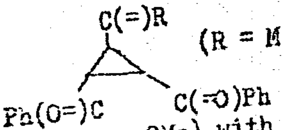
USSR

NESMEYANOV, Nik. A., and MIKUL'SHINA, V. V.

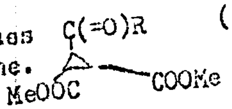
"Reactions of Stable Arsenic Ylides with Activated Double Bonds and the Synthesis of Trisubstituted Cyclopropanes"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 4, Apr 71, pp 696-699

Abstract: By reacting the stable As ylides $Ph_3As=CHC(O)R$ (I; R = Me, OMe, Ph) with transdibenzoylethylene (II) and the dimethyl ester of fumaric acid (III), difficultly accessible trisubstituted cyclopropanes with electron-acceptor substituents in the 1, 2, and 3 positions were obtained with good yields. Ph_3As formed from compounds I in the reactions. The As ylides were prepared from arsonium salts as described by Nesmeyanov et al in DAN SSSR, 155, 1364, 1964. On reacting compounds I (R = Me, OMe, Ph) with II, the cyclopropanes



(R = Me, OMe, Ph) were obtained. The reaction of compounds I (R = Me, OMe) with III led to the cyclopropanes



(R = Me, OMe). The reactions were carried out in anhydrous benzene.

USSR

NESMEYANOV, Nik. A., et al, Zhurnal Organicheskoy Khimii, Vol 7, No 4, Apr 71, pp 696-699

Ph_3As could be isolated in the form of its iodomethylate. Thermal or photochemical decomposition of I (R = Ph) in benzene led to the formation of 1,2,3-tribenzoylcyclopropane and Ph_3As. The first stage of this reaction apparently consisted of the formation of a carbene.

2/2

UDC 620.193.23

USSR

NESMEYANOVA, K. A.

"The Effect of Oxygen on the Corrosion of Steels in Steam-Water Flows at 280°C"

Moscow, Atomnaya Energiya, Vol 29, No 2, Aug 70, pp 86-91

Abstract: The effect of oxygen on the corrosion resistance of structural steels in high-temperature steam-water media was investigated at 280°C in a series of experiments in which 1Kh18N9T austenitic stainless steel and 22K, 20, 12KhM, and 12Kh2MS perlitic carbon steels were tested in flows of water, in a steam-water mixture, and in saturated steam. Corrosion of perlitic steels in water and in a steam-water mixture was lower than corrosion of austenitic steel in deaerated media. Both types of steel corrode in approximately the same manner independently of any presence of oxygen in the saturated steam. The investigation results were confirmed by control tests of 5000-hr duration in oxygen-containing media.

UNCLASSIFIED PROCESSING DATE--09OCT70

1/2 007

TITLE--ADDITION OF A GRIGNARD REAGENT TO THE DOUBLE BOND OF CYCLOPROPENE HYDROCARBONS -U-

AUTHOR-(03)-LUKINA, M.YU., RUDASHEVSKAYA, Y.YU., NESMEYANOVA, O.A.

N

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1109-12

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GRIGNARD REAGENT, PROPYLENE, CYCLIC GROUP, CARBOXYLIC ACID, NMR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/2007

STEP NO--UR/0020/70/190/005/1109/1112

CIRC ACCESSION NO--AT0112963

UNCLASSIFIED

PROCESSING DATE--09OCT70
UNCLASSIFIED
2/2 007
CIRC ACCESSION NO--AT0112963
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF RMGX, WHERE R WAS
SELECTED FROM ME, ET, PR AND BU AND X FROM BR OR I, WITH
1,3,3,TRIMETHYLCYCLOPROPENE (I) OR 1,METHYLCYCLOPROPENE (II) WAS RUN
WITH 10-15PERCENT EXCESS OF THE HYDROCARBON AT SIMILAR TO 0DEGREES
OVERNIGHT IN INERT ATM., AFTER WHICH THE EFFLUENT GAS WAS IDENTIFIED
(THIS AMOUNTED TO 1-4PERCENT CH SUB4-C SUB4 H SUB10, RESP.) AND THE
REACTION MIXT. POURED ON DRY ICE AND ACIDIFIED TO GIVE THE RESP.
CARBOXYLIC ACIDS, WHICH WERE CHARACTERIZED BY THEIR NMR SPECTRA EITHER
DIRECTLY OR AS ME ESTERS. NO CYCLOPROPENECARBOXYLIC ACIDS WERE DETECTED
IN ANY OF THE EXPTS. I AND MEMGI GAVE 83PERCENT
2,2,3,3,TETRAMETHYLCYCLOPROPANE,1,CARBOXYLIC ACID, M. 117-18DEGREES
(HYDROLYSIS OF THE REACTION MIXT. GAVE 1,1,2,2,TETRAMETHYLCYCLOPROPANE);
I AND ETMGBR GAVE 40PERCENT
CIS,2,2,3,TRIMETHYL,3,ETHYLCYCLOPROPANE,1,CARBOXYLIC ACID, M.
80-10DEGREES; II AND RMGBR GAVE
CIS,2,METHYL,2,(R,SUBSTITUTED)CYCLOPROPANE,1,CARBOXYLIC ACID: R EQUALS
ET, 78PERCENT, B SUB12 106-7DEGREES, N PRIME20 SUBD 1.4468; R EQUALS PR,
19.5PERCENT, B SUB7 108-10DEGREES, 1.4489; BU, 36.5PERCENT, B SUB26
156-8DEGREES, 1.4485. THE GEMINAL POSITION OF THE TWO ALKYL GROUPS IN
REACTIONS OF II WAS CONFIRMED BY THE NMR SPECTRA. THUS THE MAIN
DIRECTION OF THE REACTION IS CIS ADDN. OF RMGX TO THE DOUBLE BOND WITH
THE ALKYL GROUP GOING TO THE C ATOM OF CYCLOPROPENE WHICH IS
SUBSTITUTED, WHILE MG GOES TO THE UNSUBSTITUTED C ATOM OF THE RING.
ONLY 1-4PERCENT OF THE REACTION PROCEEDS VIA REPLACEMENT OF ACTIVE H.
FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--02OCT70

1/2 019

TITLE--ELECTROMYOGRAPHIC INVESTIGATION INTO INVOLVEMENT OF THE BODY AND LOWER EXTREMITIES MUSCLES IN THE LOCOMOTOR ACTIVITY IN PATIENTS WITH

AUTHOR-(02)-NESMEYANOVA, T.N., TRANKVILLITATI, A.N.

N

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 4, PP 40-44

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SPINAL CORD, CENTRAL NERVOUS SYSTEM, MUSCULAR DISORDER, EXERCISE, ELECTROMYCOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0219/70/069/004/0040/0044

PROXY REEL/FRAME--1988/1592

CIRC ACCESSION NO--AP0106338

UNCLASSIFIED

PROCESSING DATE--02OCT70

UNCLASSIFIED

2/2 019

CIRC ACCESSION NO--AP0106338

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF THE LIMB MUSCLES TO PARTAKE IN THE VOLUNTARY ACTIVITY IN PATIENTS WITH COMPLETELY OR PARTIALLY SEVERED SPINAL CORD IS DEMONSTRATED. THE PATIENTS ARE MADE TO UNDERGO THERAPEUTIC EXERCISES CONCURRENTLY WITH PYROGENAL MEDICATION. IN THE COURSE OF TREATMENT THEY PRACTISE IN WALKING, CLIMBING THE STAIRS UP AND DOWN AND IN MAKING OTHER MOVEMENTS. THE AUTHORS BELIEVE THAT ACTIVE INVOLVEMENT OF MUSCLES INNERVATED FROM THE DISTAL LENGTH OF THE SPINAL CORD BECOMES POSSIBLE THANKS TO PLASTIC PROPERTIES WHICH THE SPINAL CORD ACQUIRES IN CONDITIONS OF DISSOCIATION WITH SUPERJACENT PORTIONS OF THE CENTRAL NERVOUS SYSTEM, AND ALSO BECAUSE OF INTENSIVE FUNCTIONAL USE,

UNCLASSIFIED

USSR UDC 621.791.89.546.56:546.78

NESMIKH, V. S., MALEVSKIY, YU. B., GUBENKO, B. G., and KHORUNOV, V. F., Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences UkrSSR

"Contact-Reaction Soldering of Copper With Refractory Metals"

Kiev, Avtomatisheskaya Svarka, No 8, Aug 70, pp 59-61

Abstract: A method for the contact-reaction soldering of copper with tungsten, molybdenum, chromium, and other metals using a titanium interlayer was developed by the authors. Experiments were conducted in a vacuum chamber with electron-beam heating. The 10-mm-diameter cylindrical samples were made of tungsten, molybdenum, chromium, niobium, and copper, The titanium foil interlayer was 12 microns. The samples were subjected to compression at different times during soldering (before the appearance of the liquid phase, immediately after contact soldering, or after a certain isothermic holding time). The soldered joints were tested for tensile strength and heat resistance. Phase content and joint structure were studied by metallographic and x-ray spectral analysis. The results show that pressure application immediatelt after the end of contact soldering is the most expedient procedure. A technology for the production of x-ray tube anodes was developed on the basis of these results.

1/3 018 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--STRUCTURE OF THE SOLAR CORONA ON 22 SEPTEMBER 1968 -U-

AUTHOR--NESMYANOVICH, A.T.

N

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, ASTRONOMICHESKIY VESTNIK, VOL IV, NO 2, 1970, PP 123-172

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--SOLAR CORONA, GEOPHYSIC EXPEDITION, SOLAR ECLIPSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0070 STEP NO--UR/0454/70/004/002/0123/0172

CIRC ACCESSION NO--AP0137252

UNCLASSIFIED

2/3 018 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137252

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF THE SOLAR CORONA WAS STUDIED ON 22 SEPTEMBER 1968 USING MATERIALS OBTAINED DURING A JOINT EXPEDITION OF THE DEPARTMENT OF ASTRONOMY KIEV STATE UNIVERSITY AND THE KIEV DIVISION OF THE ALL UNION ASTRONOMICAL GEODETIC SOCIETY. THE EXPEDITION MADE ECLIPSE OBSERVATIONS BY RADIOASTRONOMICAL AND OPTICAL METHODS. FOUR TYPES OF STRUCTURAL FORMATIONS IN THE CORONA WERE DETECTED. (1) ARCHED SYSTEMS. IN THE INNER CORONA THERE ARE A NUMBER OF ARCHED SYSTEMS AT WHOSE BASE THERE ARE PROMINENCES WITH A SMALL EXTENT ALONG THE LIMB. THEY ARE EVIDENTLY ORIENTED ALONG THE PARALLELS AND THE ARCHED SYSTEMS OVER THEM LIE IN THE MERIDIONAL PLANE. CORONAL SURFACE BRIGHTNESS OVER THESE PROMINENCES IS EXTREMELY NONUNIFORM, POSSIBLY ASSOCIATED WITH THE PRESENCE OF ARCHED SYSTEMS OF COMPLEX STRUCTURE IN THESE REGIONS WHICH DO NOT LIE IN THE MERIDIONAL PLANE. CORONAL REGIONS ADJACENT TO PROMINENCES WITHIN THE ARCHED SYSTEMS ARE CHARACTERIZED BY A REDUCED BRIGHTNESS. OVER THEM THERE IS AN ALTERNATION OF LIGHT AND DARK ARCHES. (2) PLAR RAY SYSTEM. THIS IS A SYSTEM WITH AN EXTENT OF 20PERCENT OF THE LIMB, OBSERVED ONLY IN THE SOUTHERN HEMISPHERE AND ARRANGED ASYMMETRICALLY RELATIVE TO THE SUN'S AXIS OF ROTATION. THE EXCESS OF RAY BRIGHTNESS OVER THE BACKGROUND IS INSIGNIFICANT. (3) CORONAL CONDENSATIONS. AT THE WESTERN AND EASTERN LIMBS THERE ARE TWO BRIGHT DOUBLE CORONAL CONDENSATIONS. ACTIVE REGIONS ARE PRESENT AT THE BASE OF THE CONDENSATIONS. (4) LARGE CORONAL RAYS. LINEARITY AT DISTANCES GREATER THAN 2R SUN ARE CHARACTERISTIC FOR LARGE CORONAL RAYS. FACILITY: KIEV DIVISION, ALL UNION ASTRONOMICAL GEODETIC SOCIETY.

UNCLASSIFIED

3/3 018 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137252

ABSTRACT/EXTRACT--FACILITY: ASTRONOMY DEPARTMENT KIEV STATE UNIVERSITY.

UNCLASSIFIED

USSR

UDC 547.962

LIKHTENSHTEYN, G. I., FROLOV, YE. N., NESNAYKO, N. F., LEVCHENKO, L. A., and SKLYAR, YU. S., Institute of Chemical Physics, Academy of Sciences USSR Moscow

"An Investigation of the Structure of a Modeled Iron-Sulfur Protein by the Method of Spin and Luminescence Labels"

Moscow, Molekulyarnaya Biologiya, Vol 6, No 2, Mar/Apr 72, pp 201-209

Abstract: The research described in the present article concerned the problem of the mutual arrangement and interaction of iron ions in iron-sulfur proteins. Artificial iron-sulfur proteins, synthesized from human serum albumin, were analyzed by the method of spin and luminescence labels, with the aid of an electron microscope, paramagnetic sound, nuclear gamma-resonance, and analytic ultracentrifugation in the density gradient. The spin label method is based on the specific reaction of the iron- and sulfur-containing centers of the given proteins with a paramagnetic iminoxyl derivative of n-chlormercurobenzoate. The luminescence labels method is based on the phenomenon of the migration of energy via an inductive-resonance mechanism between luminescence donor centers and luminescence-extinguishing acceptor centers. The results obtained by both methods indicate that the iron ions do not act as individual active centers, but instead form a

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USSR

LIKHTENSHTEYN, G. I., et al., Molekulyarnaya Biologiya, Vol 6, No 2, Mar/Apr 72, pp 201-209

polynuclear complex which participates in catalysis as a single unit. This appears to be an extemely general characteristic of nonhemin enzymes and carriers.

2/2

USSR

UDC 62-567.2

BELOUSOV, A. I., CHEGODAYEV, D. YE., and NESOLENOV, G. E., Kuybyshev Order of the Labor Red Banner Aviation Institute imeni S. P. Korolev

"Bilateral Hydrostatic Bearing"

USSR Author's Certificate No 366286, Filed 9 Jun 70, Published 16 Jan 73 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar(a) 73, Claim No 1445447/25-28)

Translation: A bilateral hydrostatic bearing containing a cylindrical pivot with a ring-shaped section, forming a ring-shaped central chamber in the pivot, with a radial-throttling aperture, two ring bands with scrolls, in one of which an axial aperture is formed for delivery of the working medium, distinguished by the fact that in order to improve the shock-absorbing properties of a socket, the front parts which penetrate the scroll band rings, forming with each of them a supporting chamber and two concentric ring-shaped apertures, serving as delivery and outlet of the working medium for the chamber.

USSR UDC 617-001.28-07:616.153.756-092:616.36-07

DOROFEYEV, V. M., ZYABLITSKIY, V. M., SOBOLEVA, E. L., and NESTAYKO, G. V., Institute of Medical Radiology, Academy of Medical Sciences USSR, Obninsk

"Role of the Liver in the Mechanism of Lowering the Blood Serotonin Level in Acute Radiation Sickness"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 1, 1973, pp 33-34

Abstract: In rabbits irradiated once at 600 r (Co^{60} gamma rays, dose rate 120 r/min), the serotonin concentration in the portal vein was the same as in the control, showing that the entry of serotonin from the argentaffine cells into the blood was not blocked at the height of acute radiation sickness. However, the serotonin concentration in the vena cava inferior was almost half that in the portal vein. This suggests that at the height of acute radiation sickness a substantial part of the serotin coming from the intestine was destroyed in the liver before reaching the blood by monamine oxidase whose activity in the liver increased sharply in the irradiated animals.

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UDC 616-001.28-036.11-07:616.155.25-007

DOROFEYEV, V. M., ZYABLITSKIY, V. M., and NESTAYKO, G. V., Laboratory of Experimental Hematology, Division of Radiation Pathophysiology and Group of Electron Microscopy, Scientific Research Institute of Medical Radiology, Academy of Medical Sciences USSR, Obninsk

"Changes in Thrombocyte Aggregation Brought About by ADP and Serotonin in Acute Radiation Sickness"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 72, No 11, Nov 71, pp 32-34

Abstract: Changes in the aggregation of thrombocytes under the effects of ADP and serotonin were studied in experiments on rabbits subjected to irradiation with gamma-rays in a dose of 600 R. The aggregation of thrombocytes under the effect of ADP was significantly lowered on the 1st, 7th, and 15th day after irradiation and the thrombocyte aggregates became less stable vs. those for control animals. The aggregation of thrombocytes under the action of serotonin was lowered only at the peak of radiation sickness (on the 7th day after irradiation). The reduced capacity of thrombocytes to be aggregated under the effect of serotonin was presumably associated with a reduction in the amount of 5-OT-receptors or a change in the state of these membrane structures.

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USSR UDC 616-001.28-092.9-07:[616.153.757+616.155.25-008.937.57

DOROFEYEV, V. M., and NESTAYKO, G. V., Laboratory of Experimental Hematology, Department of Radiation Pathophysiology, Scientific Research Institute of Medical Radiology, Academy of Medical Sciences USSR, Obninsk

"Change in Blood Serotinin Level and 5-HT-Organelles in Rabbit Thrombocytes During Acute Radiation Sickness"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 10, 1971, pp 21-24

Abstract: The blood serotinin concentration of rabbits decreased 35% and 50% on days 1 and 4, respectively, after whole-body gamma irradiation (600 r, 140 r/min), and by day 10 it was one-tenth that of the control. The decrease in thrombocyte count at various times after irradiation was not as pronounced. The serotoninopenia was caused not only by a reduction in the number of blood platelets, but by a decrease in the serotonin concentration of the thrombocytes themselves, as indicated by the sharper drop in serotonin level compared with the thrombocytopenia and by the slower restoration of the serotonin concentration (by day 21, 66% of the control and same as the control, respectively). A count of 5-HT- (5-hydroxytryptamine) organelles also indicated a decrease in the serotonin content of the thrombocytes. There was both a decrease in the number of serotonin granules at the different stages of acute radiation sickness

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DOROFEYEV, V. M., and NESTAYKO, G. V., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 10, 1971, pp 21-24

and qualitative changes in the thrombocytes. The decrease that occurs in the serotonin concentration of thrombocytes after irradiation is apparently caused by an increase in the number of blood platelets with a low content of the amine.

Physical Properties

USSR

UDC 669.293:[669.018.2+537.311.3]:669.787

YERMAKOVA, M. P., KALININA, Z. G., and NESTERENKO, A. G.

"Study of the Effect of Small Quantities of Oxygen on the Properties of Niobium"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronics Engineering. Collection of Scientific and Technical Works: Materials), 1970, vyp. 5, pp 6-9 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I762 by authors)

Translation: A procedure was devised for introducing small quantities of O into Nb by the anodizing method. Data were obtained on the effect of small O concentrations (0.001-0.1%) on the hardness, microhardness, and electrical resistance of Nb. The results make it possible to determine the O concentration of Nb by simply measuring the physical properties of the metal.

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NESTERENKO, A. I.

JPRS 55570
29 Mar 72

UDC: 613.816:061.3(47)"1909-1910"

FIRST ALL-RUSSIAN CONGRESS ON THE CONTROL OF HEAVY DRINKING

[Article by Kh.I. Idel'chik, candidate of medical sciences, M.I. Arkin, and A.I. Nesterenko, candidate of medical sciences, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko, Moscow; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 2, 1972, submitted 29 July 1971, pp 61-65]

The urgency of the problem of controlling alcoholism makes it imperative to study not only its state today but also to pursue an indepth historical analysis. Until now there had not been an exhaustive and generalizing study dealing with the history of excessive drinking and control thereof in prerevolutionary Russia and the Soviet Union. In the department of history of medicine of the All-Union Scientific Research Institute imeni N.A. Semashko, work is being done in order to fill the gap in this area. The present article is one of the parts of that investigation.

The culminating element in the history of studying alcoholism in prerevolutionary Russia was the First All-Russian Congress on the Control of Heavy Drinking, which convened in Petersburg from 28 December 1909 to 6 January 1910. This congress was an extremely interesting event in Russian public life. In its work were reflected several of the socioeconomic phenomena typical of Russia in the early 1900s. An effort was made there to consider the problem of alcoholism in all its diversity from medical-health, socioeconomic, political, legal, and moral-ethical positions. The congress participants inevitably encountered a wide circle of social hygienic problems. The program of the congress was extremely broad. More than 150 papers were delivered and discussed at plenary sessions and three sections ("Alcohol and the Human Organism," "Alcohol and Society," and "Means of Controlling Alcoholism").

The Russian community was drawn more and more to the problem of controlling heavy drinking since the late 19th century. As it became more and more widespread, alcoholism became an extremely acute socioeconomic problem. In spite of the fact that the government hypocritically covered up the monopoly on sale of alcoholic beverages initiated in 1894 by aspiring to reduce heavy drinking, the share of revenue in the state budget from the sale of alcoholic beverages grew consistently. The income from liquor sales grew from 24.9 percent in 1894 to 30 percent in 1909 [1].

N

UDC 621.315.592

USSR

ROZUMNYUK, V. T., NESTERENKO, B. A., TSBULYA, G. G., LISITSA, M. P., SNITKO, O. V., Institute of Semiconductors, Academy of Sciences of the UkrSSR, Kiev

"Optical Properties of Germanium with a Clean Surface and with an Oxidized Surface"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 9, Sep 70, pp 1770-1775

Abstract: The authors investigate the effect which the physicochemical state of the surface has on the reflectivity of semiconductors. The study specimens were single crystals of germanium with atomically clean and oxidized (etched) surfaces. In addition to reflection, the specimens were studied for edge absorption and photoconductivity. It was found that the reflection spectra of germanium with an atomically clean surface have two peaks with energies of 2.6 and 2.8 eV in addition to the peaks at 2.1 and 2.3 eV inherent in specimens with oxidized surface. A surface origin is attributed to the maxima at 2.6-2.8 eV, while the maxima at 2.1-2.3 eV are assumed to stem from transitions within the specimen. The atomically clean surface also shows a shift of 0.02 eV toward the short-wave region as compared with the oxidized surface in studies of edge absorption and photoconductivity. This

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ROZUMNYUK, V. T., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 9, Sep 70, pp 1770-1775

shift is attributed to the simultaneous effect of various mechanisms involving optical transitions on surface levels, quantum effects associated with the strong electrical field on the atomically clean surface and simple physical changes such as surface tension.

USSR

UDC 681.326

ZBARYSHEVSKIY, V. M., MARCHUK, A. A., [redacted], and PANCHISHIN, V. I.
Institute of Mathematics, Academy of SSR

"Device for Controlling the Structure of a Computer Medium"

USSR Authors' Certificate No 312273, Cl. G 06 g 7/46, filed 7 Apr 70, published 7 Oct 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B221P)

Translation: The invention has to do with computer devices used to control the structure of an optron analog network in the solution of partial differential equations. Special-purpose devices for solving partial differential equations by the modeling method are well known: for example, the "USM-1" and the "Vega," which use a network of resistors as the analog medium. However, the USM-1 network model does not permit control of the network structure at sufficient speed: i.e., changing of the resistances of the resistors according to the necessary law. The automated Vega network model permits the resistances of the resistors constituting the networks to be changed automatically according to a given program as an equation is solved. This is done by connecting to the network a resonator of the requisite rating from an available set by means of an electromagnetic relay. Such a principle of controlling the structure of

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ZBARYSHEVSKIY, V. M., et al., USSR Authors' Certificate No 312273

the medium makes the entire device cumbersome and requires the presence of a large number of precision resistors with various ratings. The purpose of the invention is to develop a device for electronically setting and controlling the structure of a computer medium (analog network) that is based on optrons. The proposed device makes it possible to set the resistance values of the photoresistors of the optrons automatically according to a given program and to change them according to the requisite law during the solution of an equation by changing the filament current of the optron light sources according to the corresponding law.

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USSR UDC: 681.325.65

MARCHUK, A. A., NESTERENKO, B. B., Institute of Mathematics, Academy of Sciences of the UkrSSR

"An Analog-Digital Converter"

USSR Author's Certificate No 329668, filed 16 Oct 70, published 10 Apr 72 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 73, abstract No 1B467 P)

Translation: This invention, which pertains to the field of computer technology, is designed for converting the internal language of an analog-digital complex. Translation devices for analog-digital complexes are well-known; e. g., the "Saturn". However, use of the M-220 computer in the "Saturn" complex makes specific demands on the translation device. The device made in accordance with these requirements cannot be used in a small analog-digital computer complex utilizing a keyboard computer.

The proposed analog-digital converter differs in that its functional possibilities are extended by adding a kipp oscillator, trigger device, and rewrite device. One input of the trigger device is connected to the computer module, and the other input is connected through a frequency meter

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MARCHUK, A. A., NESTERENKO, B. B., USSR Author's Certificate No 329668

and a converter to a network model. The output of the trigger device is connected through the kipp oscillator to the rewrite device, which is connected, in turn, to the computer module and to the counting decades of the frequency meter.

The output of the rewrite device is connected to the first input of the computer module. In addition, the converter is simplified by incorporating an inverter, coincidence gate, and register in the computer module. The input of the inverter is connected to the first input of the computer module, and the output of the inverter is connected through the coincidence gate to the register whose output is connected to the coincidence gate. The input of the register is connected to the second input of the computer module.

USSR UDC: 621.396.6-181.5

SUPLIVENKO, V. N., NESTERENKO, B. O., OVCHINNIKOV, Yu. A.

"Recording the Static Parameters of Integrated Circuitry"

V sb. Obmen opytom v radioprom-sti (Experience Pooling in the Radio Industry --collection of works), vyp. 1, Moscow, 1971, pp 53-55 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V177)

Translation: A method is outlined for recording the static parameters of integrated microcircuits by using the appropriate measuring device and the N-373-2 microammeter-millivoltmeter chart recorder. An attachment is developed for reading out the measurement results from the chart. Resumé.

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USSR UDC 546.45:543.27:543.544.25

DRUGOV, Yu. S., MURAV'YEVA, G. V., GRINBERG, K. M., NESTERENKO, G. N., SOKOLOV, D. N.

"Gas Chromatographic Method of Determination of Beryllium in Air"

Moscow, Zavodskaya Laboratoriya, No 11, 1972, pp 1305-1306.

Abstract: The authors have developed a gas chromatographic method for determination of microquantities of beryllium in the air at industrial enterprises, based on the formation of a volatile beryllium chelate with trifluoroacetyl acetone. A linear dependence of the signal of the detector on beryllium content is observed in the range of concentrations of 0.4 to $2 \cdot 10^{-5}$ mg/ml Be. The sensitivity of the determination is $1 \cdot 10^{-5}$ mg/ml Be.

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USSR

UDC 632.936.2

PRISTAVKO, V. P., NESTERENKO, L. P., and DOVZHENOK, Ukrainian Scientific Research Institute of Plant Protection

"Study of the Activity of the Sexual Attractant of the Codling Moth"

Moscow, Khimiya v Sel'skom Khozyaystve, No 9, 1971, pp 37-40

Abstract: The present work is devoted to isolating the sexual attractant of the codling moth and testing its activity under laboratory and field conditions. The research has been performed since 1968 at the Laboratory of Biophysical Methods of Controlling Harmful Insects of the Ukrainian Scientific Research Institute of Plant Protection. Solvents suitable for extracting the sexual attractant of the female coddling moths and the concentrations to which the males react were investigated.

Methylene chloride, ethyl alcohol and ethyl ether were the most advantageous solvents for extracting the sexual attractant from the glands of female codling moths. The biological material had to be ground before extraction. When testing extracts containing 5-10 female-equivalents of attractant, 5 to 10 minute exposure was sufficient. With a lower concentration the exposure time had to be increased. The minimum attractant concentration

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PRISTAVKO, V. P., et al., Khimiya v Sel'skom Khozyaystve, No 9, 1971, pp 37-40

to which the male codling moths reacted was 0.001 female-equivalent per milliliter of solvent. When testing the attraction of live females in an orchard, the largest number of males were caught by traps with three-day old females. The optimal number of females in a trap was 10. The traps were most effective when placed in the upper part of the crown.

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USSR

UDC 546.791'161

OPALOVSKIY, A. A., KUZNETSOVA, Z. M., NESTERENKO, M. N., and SHINGAREV, V. G.

"The System HF-UF_6-NH_4F"

Leningrad, Radiokhimiya, Vol 15, No 4, 1973, pp 615-618

Abstract: Study of the isothermal solubility in the systems HF-MoF_6-NH_4F and HF-UF_6-NH_4F leads to several observations. One of the universal characteristics of this system is the formation of ammonium heptafluoromolybdates and uranates with the formula NH_4MeF_7, representing a new synthetic route for such materials. In this system uranium hexafluoride is more soluble than molybdenum hexafluoride with increasing concentration of ammonium fluoride in the solution, probably because of the formation of NH_4UF_7. The reaction mechanism in this system consists of dissociation of the NH_4F followed by formation of $[NeF_7]^-$ and finally of the reaction product NH_4MeF_7.

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USSR

UDC 621.378.325:658.382.3

PRONIN, V. R., VYSOKOSOV, Ye. P., NESTERENKO, M. T., LAZAREV, Yu. I.

"Recommendations for Setting up Temporary Sanitary Rules for Working With Lasers"

Moscow, Kvantovaya Elektronika, No 2, 1971, pp 87-91

Abstract: The authors consider recommendations for setting up sanitary rules in working with lasers. The recommendations are based on analyzing current Soviet and non-Soviet data in the literature on problems of evaluating the biological effect, levels of threshold action and safe levels of laser emission from studies with consideration to the optical and physiological properties of the eye. Requirements for production areas where quantum electronic devices are located are also considered. One table, bibliography of 25 titles.

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UDC 632.951:633.63

USSR

NESTERENKO, N. I., Toxicological Laboratory, All-Union Institute of Plant Protection

"Organic Phosphorus Preparations Against Sugar Beet Pests"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 2, 1973, pp 33-36

Abstract: Organic phosphorus compounds have the advantages over other pesticides of possessing relatively low persistence and of decomposing almost totally in the course of one growing season. These advantages encouraged tests of baytex, phthalophos, phosalone and demuphos against gnawing pests, at the Cherkasskaya Agricultural Experimental Station, the Salivonkovskiy Elite Seed Research Sovkhoz and the Experimental Farm Glevakha of the Academy of Sciences of the Ukrainian SSR. The various preparations proved highly effective in dosages ranging from 0.5 kg/ha to 1.6 kg/ha. Demuphos is of special interest due to its low toxicity for warmblooded animals. It had a high selective effect on beet weevils when sprayed on beet sprouts at a dosage of 1.5-2.0 kg/ha., and when used to treat seeds at a rate of 2.0-2.5 kg/c. The effectiveness of bromophos and trichlorometaphos-3 was studied for control of sucking beet pests, while for aphid control, bromophos, amiphos and trichlorometaphos-3 in dosages from 0.3-0.5 kg/ha. were tested. Sayfos was found to help in controlling both aphid infestation and virus yellowing disease.

USSR UDC 632.95

PROTOPOPOVA, G. V., NESTERENKO, N. I., NESYNOV, Ye. P., BESPROZVANNAYA, M. M., and PEK'KIS, P. S.

"Insecticide Activity of Some Arylhydrazones and Aryl Esters E of Iminothioacids for Rice Weevils and for Grain and Chard Aphids"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiological Effects of Compounds, Republic Interscience Symposium), Vyp 4, 1972, pp 68-71 (from Referativnyy Zhurnal -- Khimiya, No 4(II), 1973, Abstract No 4N613 by T. A. Belyayeva)

Abstract: Insecticidal properties of the compounds $PhN=C(CN)SC_6H_4R$ (compound I), $PhN+C(NHPh)SC_6H_4R$ (compound II), $(EtOOC)_2C=NNHC_6H_4R$ (compound III), and the 2-arylthiobenzazols were determined. The highest insecticidal activity for the rice weevils was shown by I (R = p-Me), 67% mortality for a 1% concentration; I (R = p-Br), 94% mortality; II (R = m-Cl), 100% mortality; 2-parachlorophenylthiobenzothiazole, 95% mortality for a 0.1% concentration; and III (R = o-OMe), 100% mortality. It should be noted that for the stereoisomers, the insecticidal properties are stronger for the β-form than the α-form.

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USSR UDC 632.954

BUZANOV, I. F., NESTERENKO, N. I., MAKOVETSKIY, K. A., All-Union Scientific Research Institute of Sugar Beets

"Testing Ronite on Sugar Beet Fields"

Moscow, Khimiya v Sel'skom Khozyaystve, No 9, 1971, pp 47-50

Abstract: In 1968-1969, a study was made of the effect of ronite (S-ethylcyclohexylthiolcarbamate) on weeds and sugar beets (under field conditions) and also on some physiological processes occurring in sugar beet plants (under laboratory conditions). Application of the herbicide ronite to the sugar beet fields either before planting or before appearance of shoots destroyed 40-80 percent of the weeds. The ronite was identically effective against monocotyledonous and dicotyledonous weeds. Increased doses of ronite delayed the shoots somewhat and suppressed the young sugar beet plants. During the initial period, as a result of suppression by the herbicide the sugar and hydrocarbon content increased in the plants, and the respiration intensity decreased. The herbicide had practically no effect on the intake of mineral nutritive elements. On application of the ronite, the sugar beet root harvest did not drop, but the sugar content and quality were reduced.

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1/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--USE OF ORGANOPHOSPHORUS PREPARATIONS AS SUBSTITUTES FOR DDT AND
HEXACHLOROCYCLOHEXANE TO COMBAT SUGAR BEET PESTS -U-

AUTHOR--NESTERENKO, N.I.

N

COUNTRY OF INFO--USSR

SOURCE--KHIM. SEL. KHOZ. 1970, 8(4), 382-3

DATE PUBLISHED--------70

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHTHALOPHOS (0.5-0.9 KG-HECTARE), PHOSALONE (1-1.26 KG-HECTARE), AND LEBAYCID (1-1.6 KG-HECTARE) PROVED TO BE MORE EFFECTIVE AGAINST BOTHYNODERES PUNCTIVENTRIS AND OTHER BEET PESTS THAN DDT, HCCH, AND POLYCHLOROPINENE.

UNCLASSIFIED

N

USSR

UDC: 632.951:661.718.1

NESTERENKO, N. I., Ukrainian Toxicological Laboratory, All Union Institute of Plant Protection, Leningrad, All Union Academy of Agricultural Sciences imeni V. I. Lenin

"Utilization of Organophosphorus Preperations as Substitutes for DDT and HCCH in Control of Sugar Beet Pests"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 4 (78), Apr 70, pp 42-43

Abstract: Organophosphorus insecticides, leybacid, phthalophos, and phozalon may be used instead of DDT and HCCH (hexachlorocyclohexane) in controlling common sugar beet snout beetle and other sugar beet peses with suckling or gnawing mouths. Phozalon is also active against cabbage moth caterpillar, sugar beet caterpillar, sugar beet root, and maggots of sugar beet agromyzidae. Its insecticidal action is longer lasting than that of metaphos, chlorophos and polychloropinene. Leybacid also proved to be active against the above pests, being stronger than polychloropinene or even heptachlor. Phthalophos was more effective than polychloropinene against sugar beet snout beetle and showed activity against sugar beet root, sugar beet agromyzidae, leafhoppers, and others.

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1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ANISOTROPY OF MANGANESE TUNGSTATE -U-

AUTHOR-(03)-MOISEYEV, V.A., ZVYAGIN, A.I., NESTERENKO, N.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1551-2

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