

MAKAROV, S.V.

Probability calculation of multicycle systems. Vych. sist. no.13:
3-21 '64.

Peak reliability of single-cycle systems. Ibid.:22-32
(MIRA 18:2)

MAKAROV, S.V.

Upper bound of the mean length of a disjunctive normal form.
Disk. anal. no.3:78-80 '64. (MIRA 18:9)

D 25251-65

ACCESSION NO: AR5000883

Time moment with equal probability will take on the values 0 and 1. The stochastic matrices $A = (p_{ij})$ are discussed, for each of which there exists a number m such that $p_{ij} = b_{ij}/2^m$ for all i, j , where all b_{ij} are integer numbers. The algorithm is presented which will afford construction of the class of automata to realize any such stochastic matrix. V. Martynuk

SUB CODE: MA, DP

ENCL: 00

Card 3/3

L 25251-63 ENP(d)/T IJP(e)

ACCESSION NR. AR5000993

8/0044/64/000/009/V023/V023

SOURCE Ref. zh. Matematika. Abs. 9V134

AUTHOR: Malafey, S. V.

TITLE: The realization of stochastic matrices by finite automata

CITED SOURCE: Sb. Vychisl. sistemy. Vyp. 9. Novosibirsk, 1963, 65-70

TOPIC TAGS: finite automaton, Boolean logic, Markov chain, stochastic matrix, stochastic matrix algorithm

TRANSLATION: Finite automata are discussed, synthesized from Boolean logic elements and single delays. If the random vector of inputs at time t does not depend upon the information referring to the preceding time moments, then the sequence of automaton states will form the homogenous Markov chain characterizing some stochastic matrix of transient probabilities. The given finite automata will realize this stochastic matrix. It is assumed that each input fed at any

Card 1/2

12/24/59
DISSEM NR: AT5 05635

In the present article, and is based on the method of moments of probability theory. A simple example illustrates the procedure. Orig. art. has: 2 figures and 2 formulas.

IN CONCLUSION: Institut matematiki SO AN SSSR (Institute of Mathematics, SO AN SSSR)

SUBMITTED: 00 ENCL: 00 SUB CODE: DP, MA
REF SOV: 005 OTHER: 000

1/2 3

REF ID: A66278 (h)/RMT(d)/RMT(1)/RMT(3) Pg-A/PK-A/PQ-A/PAB TIP(c) GC/BB

CLASSIFICATION: TOP SECRET

8/30/63/000/001/0003/0012

AUTHOR: Yakovlev, S. V.

35
34
2+1

TITLE: Method of means for probability calculations of multi-sequence networks

NOTE: In BSSR, Sibirskaya otdeleya, Institut matematiki, Vychislitel'nyye mashiny, no. 7, 1963, 3-12

SYNOPSIS: computer circuit, logic network, computer reliability, probability

ABSTRACT: This is a continuation of earlier work by the author (Vychislitel'nyye mashiny, Novosibirsk, no. 4, 1962 and no. 5, 1963 [Accession no. AT 005628])

concerns with a probability-theory analysis of computer reliability. As in the earlier work, the multi-sequence network is defined in the sense of N. Ye. Kobrinskiy (Prilozheniya k teorii konechnykh avtomatov [Introduction to the theory of finite automata]) and its operating reliability is related to the probability of the appearance of the correct result (unity) at the output during an operating cycle of a single step. The method of solving the problem is different

Page 1/2

MAKAROV, S.V.

Reliability of multicycle networks with a small memory. W. S.
sist. no. 583-9'63 (MIRA 12:7)

MAKAROV, B.V.

Probability calculations of single-cycle circuits. Vych. sist.
no.4:29-54 '62. (MIRA 18:1)

29658

S/169/61/000/005/014/049

Some calculations of counter telescopes. The ... A005/A130

where $S(\theta, A)$ is the section of the plane of the lower base of the telescope on which the cosmic rays impinge from the direction (θ, A) .

[Abstractor's note: Complete translation.]

X

29658
S/169/61/000/005/014/049
A005/A130

3.2100

AUTHOR: Makarov, S.V.

TITLE: Some calculations of counter telescopes. The light transmission power of a vertical telescope

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 5, 1961, 2-3, abstract 5 G 16. (Tr. Yakutskogo fil. AN SSSR: Ser. fiz., 1960, no. 3, 46-49)

TEXT: The author solves the problem of determining the absolute intensity N of cosmic rays recorded per unit time by a counter telescope. The angular distribution of radiation intensity is assumed to be $I(\theta, A) = I_0 \cos^2 \theta$, where θ is the zenith angle, A is the azimuth, I_0 is the vertical intensity ($\text{cm}^{-2}\text{sec}^{-1}\text{steradian}^{-1}$). On the basis of the general solution obtained for the problem, the directivity pattern of a vertical counter telescope located 20 m below the earth's surface is calculated. The definitive expression has the form: $b(\theta, A) = I_0 \cos^2 \theta \cdot S(\theta, A)$.

Card 1/2

X

MAKAROV, S.V.; SVECHNIKOV, M.A.

Outline of the earth's umbra during the lunar eclipse of September
26, 1950. Uch.zap.Len.un. no.153:158-165 '52. (MLRA 8:6)
(Eclipses, Lunar--1950)

MAKAROV, S.V.; SVECHNIKOV, M.A.

Observations of the Perseids in 1950. Biul.VAGO no.11:20-21 '52.
(MLPA 6:6)

1. Leningradskiy gosudarstvennyy ordena Lenina universitet imeni A.A.
Zhdanova, astronomicheskiy kruzhok vtorogo kursa. (Metears--August)

ACCESSION NR: AP4009782

ducing five fractions without distillation. The demonstration showed that the first fraction contained 60% of C₂₁-C₂₅ acids; the second- 57% C₁₇-C₂₀ acids; the third - 85% C₁₀-C₁₆ acids. Their purity is higher than that of commercial acids prepared by distillation. The fourth fraction is a 90% concentrate of C₇-C₂₀ acids containing all resinous substances from which pure acids can be separated by distillation at 1480 and 5 mm Hg. The fifth fraction is a mixture of 35-40% monocarboxylic C₄-C₆ acids and 50-55% dicarboxylic C₈-C₁₆ acids. These acids can be readily separated by simple distillation since the former boil up to 1200, while the latter in the 205-2450 range at 5 mm Hg. Orig. art. has 5 figures, no formulas, 2 tables.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 10Feb64

ENCL: 00

SUB CODE: CH

NO REF SOV: 002

OTHER: 000

Card 2/2

ACCESSION NR: AP4009782

S/0065/64/000/001/0023/0026

AUTHORS: Man'kovskaya, N.K.; Udovenko, S.A.; Makarov, S.V.

TITLE: Synthetic fatty acids prepared by carbon dioxide decomposition of soaps

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 1, 1964, 23-26

TOPIC TAGS: monocarboxylic acids, dicarboxylic acids, soap decomposition, synthetic fatty acids

ABSTRACT: Decomposition of technical soaps by carbon dioxide under pressure (not described) permits the preparation of synthetic fatty acids different from the commercial grades prepared by distillation. The reason for this difference is the concentration in the first fraction of all unsaponified compounds left after thermal processing; all dicarboxylic acids concentrate in the last fraction. To demonstrate the results of soap decomposition by carbon dioxide, the SZhK and ZhK technical soaps made by the Shebekinskiy Kombinat, were treated in an experimental installation in three steps, pro-

Card 1/2

MAKAROV, B.V.

The theory of series. Trudy IAFAN SSSR. Ser. fiz. no.4:157
152. (MIRA 15:12)

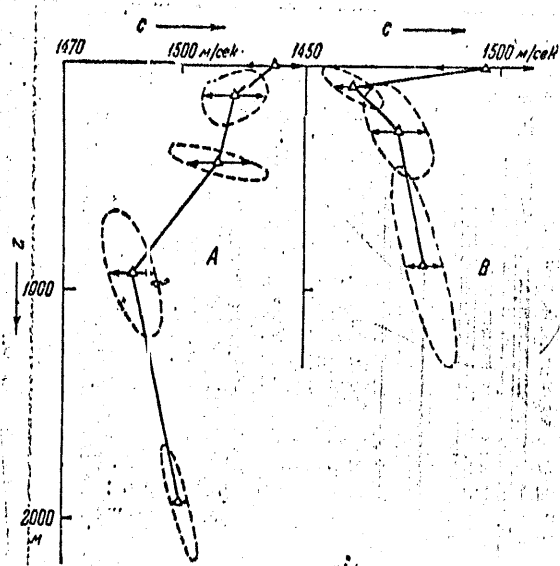
(Mathematical statistics)

BLAGOVESHCHENSKAYA, N.M.; ZARUBINA, L.V.; KONDRATENKO, V.F.; MAKAROV, S.V.;
MESHCHANNIKOVA, M.F.

Natural focus of *Leptospira hebdomadis* infections in Rostov Province.
Zool. zhur. 40 no.10:1457-1460 O '61. (MIRA 14:9)

1. Rostov-on-Don Institute of Epidemiology, Microbiology and
Hygiene.

(ROSTOV PROVINCE--LEPTOSPIROSIS)
(RODENTS AS CARRIERS OF DISEASE)



06038 06035
S/020/60/135/003/020/039
B019/B077

Рис. 2

86038

Vertical Profile of Sound Propagation
Velocity in the Ocean

3/ 03/020/039
B019/B077

when there are sharp deviations of the dc/dz gradient. The new method is advantageous through these parameters used to analyze acoustic processes. The authors were able to determine two types of vertical distributions of the sonic velocity in a 10 degree square of the North-west Atlantic. The warm Gulfstream influences the first distribution type and can be divided into five layers. The cold Labradorstream influences the other distribution type and can be divided into four layers. Fig. 2 shows both distribution types. The authors thank V. Ya. Tolkachev, G. I. Merinova, N. P. Markova, and N. A. Smirnova for the calculations done. The Gosudarstvennyy okeanograficheskiy Institut (State Institute of Oceanography) is mentioned. Legend to Fig. 2: A is the first type of the velocity distribution and B the second. There are 2 figures and 4 Soviet references. ✓

ASSOCIATION: Akusticheskiy institut Akademii nauk SSSR (Institute of Acoustics of the Academy of Sciences, USSR)

SUBMITTED: August 20, 1960

Card 2/3

86038

S/020/60/135/003/020/039
B019/B077

6.8000 (3201, 1099, 1162)

AUTHORS: Brekhovskikh, L. M., Corresponding Member of the AS USSR,
Yevtushenko, V. A., Makarov, S. S., and Pisarenko, V. F.

TITLE: Vertical Profile of Sound Propagation Velocity in the Ocean

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 3, pp. 581-583

TEXT: The authors describe a new method of determining the sonic velocity in dependence of the depth of the ocean, using the so-called "characteristic points". The ocean depth is divided into a certain number of layers, taking their physical and chemical characteristics into account. Each curve which characterizes the mutual dependence of sonic velocity and ocean depth is approximated by a broken line, where the dc/dz gradient is constant within each individual layer (c is the sonic velocity, z is the ocean depth). The salient points of this curve are the characteristic points in the c - z plane, for which the mean depth and the sonic velocity are determined. By changing in time the curve $c = c(z)$, a family of curves is obtained which describe the actual conditions much better especially

Card 1/3

MAKAROV, S.P.; YAKUBOVICH, A. Ya.; DUBOV, S.S.; BUDVILIN, A.A.

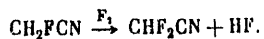
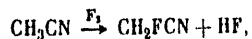
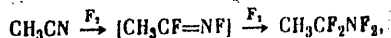
Synthesis of hexafluoro-dimethylhydroxylamine and hexafluoro-dimethyl-nitrogen oxide. Dokl. Akd. Nauk SSSR 160 no. 4:1335-1338, 1964.

1964-1965

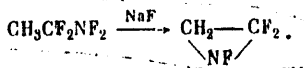
1. Submitted December 8, 1964.

L 05870-67

ACC NR: AP60211898



The cyclic product could have been formed by dehydrofluorination of N,N-difluoro-1,1-difluoroethylamine ↓



[BO]

SUB CODE: 07/ SUBM DATE: 17Jul65/ ORIG REF: 001/ OTH REF: 004

kh

Card 2/2

L 05870-67 BWP(j)/EWT(m) RM/WW/JW

ACC NR: AP6028898 SOURCE CODE: UR/0079/66/036/008/1419/1420

AUTHOR: Makarov, S. P.; Yermakova, I. V.; Shpanskiy, V. A.

30
29
B

ORG: none

TITLE: Fluorination of liquid acetonitrile with free fluorine

SOURCE: Zhurnal obshchey khimii, v. 36, no. 8, 1966, 1419-1420

TOPIC TAGS: fluorination, acetonitrile, free fluorine, *fluorine*

ABSTRACT: A study has been made of the fluorination of liquid acetonitrile with free fluorine rarefied with nitrogen. The reaction was conducted at 10—15C with vigorous agitation. There were no flares or explosions. Hydrogen fluoride formed in the reaction slowed down fluorination and had to be bound with sodium fluoride. The reaction products were fluoroacetonitrile, difluoroacetonitrile, N-fluoro-1,1-difluoroethylenimine, and N,N-difluoro-1,1-difluoroethylamine. The reactions can be represented as follows:

Card 1/2

UDC: 547.23

L 32643-66

ACC NR: AP6015613

decomposition (I is stable at temperatures up to 2000). The authors express their
gratitude to F. N. Chelobov and A. M. Khokhloy for mass spectrophotometric study of
some compounds. This paper was presented by Academician I. L. Knunyants on 29
September 1965. Orig. art. has: 1 table and 17 equations. 2

SUB CODE: 07/

SUBM DATE: 24Sep65/

ORIG REF: 003/ OTH REF: 001

Card 2/2-20

L 32643-66 EWT(m)/EWP(j)/T WW/JW/RM

ACC NR: AP601;613 (A)

SOURCE CODE: UR/0020/66/168/002/0344/0347

AUTHORS: Makarov, S. P.; Englin, M. A.; Videyko, A. F.; Tobolin, V. A.; Dubov, S. S.

55
53
B

ORG: none

TITLE: Reactions of hexafluorodimethylnitroxide¹

SOURCE: AN SSSR. Doklady, v. 168, no. 2, 1966, 344-347

TOPIC TAGS: chemical reaction, halogen oxygen nitrogen compound, fluorinated organic compound

ABSTRACT: Reactions of hexafluorodimethylnitroxide (I), which was described in an earlier paper by S. P. Makarov, A. Ya. Yakubovitch i dr. (Zhurn. Vsesoyuzn. khim. obshch. im. D. I. Mendeleeva, no. 1, 106, 1965; DAN, 160, 1319, 1965), with ethylene, tetrafluoroethylene, acetylene, benzene, tetrafluorohydrazine, phosphorus trichloride and trifluoride, lead and tin are described. Photolysis and pyrolysis of I were also investigated. The structure of the reaction products was analyzed by means of elementary analysis, mass spectroscopy, determination of molecular weight, and by formation of derivatives. It was established that in some reactions I acts as a typical free radical, while in others as an oxidizing agent releasing its oxygen. Photolysis leads to dimerization of I, while pyrolysis at 350C results in

Card 1/2

ENGLIN, M.A.; MAKAROV, S.P.; DUBOV, S.S.; YAKUBOVICH, A.Ya.

Heterogeneous fluorination by elementary fluorine. Part 5:
Fluorination of silver and potassium thiocyanates. Zhur. ob.
khim. 35 no.8:1412-1415 Ag '65.

Heterogeneous fluorination by elementary fluorine. Part 6:
Fluorination of cyanuric chloride. Ibid. 1416-1418
(MIRA 18:8)

ENGLIN, M.A.; YAKUBOVICH, A.Ya.; MAKAROV, S.P.; NIKIFOROVA, T.Ya.;
LYSENKO, V.V.; DUBOV, S.S.

Heterogeneous fluorination with elementary fluorine. Part 7:
Fluorination of hydrochlorides of aliphatic amines. Zhur. ob.
khim. 35 no.7:1167-1171 J1 '65. (MIRA 18:8)

1 35150-45

ACQUISITION NRT: AP50068AA

Orig. xrt. Desc: 1 figure, 1 table.

ASSOCIATION: None

SUBMITTED: 250-68A

ENGL: 00

SUB CODE: GC

NO REP SOV: 00

OTHER: 004

Page 2/3

1 35035-65

ACCESSION NR: AF5006844

This compound is a gas of violet-rose color with b.p. -20°C , condensing into a dark-violet liquid which at -55 to -70°C solidifies into yellow-colored crystals. The IR spectrum lacks absorption bands in the region characteristic of double bonds. These as well as other findings are presented to prove that this compound is indeed a stable free radical for which the following structure is the most probable



With respect to the EPR spectrum, the value of the g-factor ($g = 2.0046$) established indicates the spin nature of the paramagnetic in the molecule. The curves of the hyperfine structure, observed for this compound in carbon tetrachloride and fluorinated oil, are given; the NMR spectrum was found to consist of nine equidistant lines with a corresponding intensity ratio. It is noteworthy that, when exposed to UV light, nitrogen hexafluorodimethyl oxide is dimerized into a diamagnetic compound which, on heating, readily dissolves and forms $(\text{CF}_3)_2\text{N}-\text{O}$.

Cont 2/3

1 35130-55 EPR(S)/EPR(SNF(S))/EPR(S)/EPR(S) P-24/P-24/P-24 HPL RM/WW

ACCESSION NO. AF3006844

8/0063/65/010/001/0106/0107

37
B

AUTHOR: Makarov, E. P.; Yakubovich, A. Ya.; Dubov, S. S.; Medvedev, A. N.

TITLE: Stable free radical of nitrogen hexafluorodimethoxy; its production, structure and properties

SOURCE: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal, v. 10, no. 1, 1965, 106-107.

TOPIC TAGS: hexafluorodimethylhydroxylamine, nitrogen hexafluorodimethoxy, stable free radical, potassium permanganate, acetic acid, electron paramagnetic resonance, hyperfine structure, infrared spectrum, ultraviolet spectrum, spin, paramagnetic, diamagnetic compound

ABSTRACT: The oxidation of hexafluorodimethylhydroxylamine by potassium permanganate in an acetic acid solution, or by other oxidizing agents (chlorine, fluorine, etc.) results in the free-radical molecule O_2F_6NO .



Card 1/3

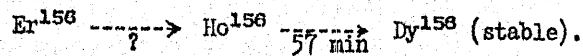
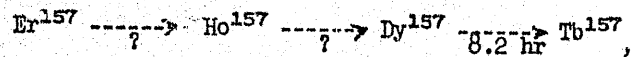
MIROSHNICHENKO, I.V.; LARIN, G.M.; ~~MAKAROV, S.F.~~; VIDEYKO, A.F.

Electron paramagnetic resonance method of studying a free radical of hexafluorodimethyl nitrogen oxide. Zhur. strukt. khim. 6 no.5:776-777 S-0 '65. (MIRA 18:12)

1, Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova AN SSSR. Submitted March 27, 1965.

L 23256-66

ACC NR: AP6009155



The half lives of Er^{157} and Ho^{157} were found to be 24_{-4}^{+2} and 18_{-4}^{+2} minutes, respectively. While the existence of Er^{157} and Ho^{157} was previously predicted in the literature, no data on the existence of Er^{156} have ever been published. The half life of Er^{156} could not be reliably identified, but an upper limit of 10--12 minutes was estimated for it. It is pointed out in the conclusion that observation of the same isotopes was subsequently reported by A. Gizon et al. (Phys. Nucl. Ann. 1964, Inst. du Rad., Paris, April, 1965) with somewhat different values of the half lives. Orig. art. has: 1 formula.

SUB CODE: 20/ SUBM DATE: 04Jun65/ ORIG REF: 001/ OTH REF: 001

Card 2/2 B.C.

L 23256-66 EWT(m) DIAAP

ACC NR: AF6009155

SOURCE CODE: UR/0367/65/002/005/0956/0957

AUTHOR: Zhelev, Zh. T.; Kalinnikov, V. G.; Kudryavtseva, A. V.; Lebedev, N. A.;
Makarov, S. P.; Muziol', G.; Kherrmann, E.

ORG: Joint Institute of Nuclear Research (Ob'yedinennyy institut yadernykh issle-
dovaniy)

TITLE: New isotopes Er¹⁵⁷, Ho¹⁵⁷, and Er¹⁵⁸

SOURCE: Yadernaya fizika, v. 2, no. 5, 1965, 956-957

TOPIC TAGS: erbium, holmium, isotope, half life

ABSTRACT: The search for new erbium and holmium isotopes was made with the aid of a magnetic β spectrometer with three successive foci and with a scintillation γ spectrometer. The compounds for the investigation were separated chromatographically from a tantalum target bombarded with 660-Mev protons in the OIYaI synchrocyclotron. The chemical separation of the rare earths started approximately ten minutes after the end of the irradiation, and that of the erbium and holmium fractions after two hours. The genealogical connections were investigated in the following proposed chains of decay reaction:

Card 1/2

MARTYNOV, I.V.; KRUGLYAK, Yu.L.; MAKAROV, S.P.; TKACHEV, V.G.

Halo- α -nitrocarboxylic acids. Part 4: Derivatives of fluoro-
chloro- α -nitropropionic acids. Zhur.ob.khim. 33 no.10:
3388-3391 0 '63. (MIRA 16:11)

MARTYNOV, I.V.; KRUGLYAK, Yu.L.; MAKAROV, S.P.

Halo- α -nitrocarboxylic acids. Part 1: Derivatives of chloro-nitroacetic acid. Zhur.ob.khim. 33 no.10:3382-3384 0 '63.

Halo- α -nitrocarboxylic acids. Part 2: Derivatives of fluoro-chloronitroacetic acid. 3384-3386

Halo- α -nitrocarboxylic acids. Part 3: Derivatives of α -nitro-perfluorocarboxylic acids. 3386-3388 (MIRA 16:11)

GINSBURG, V.A.; VLASOVA, Ye.S.; VASIL'YEVA, M.N.; MIRZABEKOVA, N.S.;
MAIKAROV, S.P.; SHCHEKOTIKHIN, A.I.; YAKUBOVICH, A.Ya.

Photoreaction of hexafluoroazomethane with unsaturated compounds.
Dokl.AN SSSR 149 no.1:97-99 Mr '63. (MIRA 16:2)

1. Predstavleno akademikom M.I.Kabachnikom.
(Azomethane) (Photochemistry) (Unsaturated compounds)

Reactions of polyfluorinated...

S/020/62/142/003/017/027
B106/B110

PRESENTED: June 1, 1961, by M. I. Kabachnik, Academician

SUBMITTED: May 30, 1961

Table 1. Compounds synthesized for the first time.

Legend: (a) Compound; (b) Bp. (Fp.), °C/mm; (c) determined, %;
(d) calculated, %; (e) Fp. * Non-distillable yellow oil; ** molecular
weight (in acetic acid) : determined 580, calculated for the pentamer 565.

X

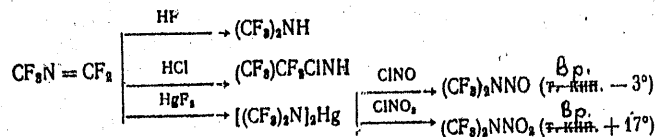
Card 5/6

S/020/62/142/003/017/027
B106/B110

Reactions of polyfluorinated...

reacts with diphenyl ketene to form the adduct $(C_6H_5)_2CCO \cdot 2CF_2NH$.

Addition reactions with hydrogen fluoride, hydrogen chloride, and mercuric fluoride following the schemes



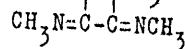
are very characteristic for the polyfluorinated azomethines in question. The tendency of polyfluorinated substances with double bonds to addition reactions with olefins therefore decreases as follows: $N=O > N=N > N=C$. Table 1 shows the physical constants of the compounds synthesized for the first time. There are 1 table and 12 references: 4 Soviet and 8 non-Soviet. The three most recent references to English-language publications read as follows: E. E. Griffin, R. N. Haszeldine, Proc. Chem. Soc., 1959, 369; 1960, 1151 - 1155; C. E. Griffin, R. N. Haszeldine, J. Chem. Soc., 1960, 1398; J. Crawford, J. Polym. Sci., 45, No. 145, 261 (1960).

Card 4/6

Reactions of polyfluorinated...

S/020/62/142/003/017/027
B106/B110

vigorously when heated to 25°C in an autoclave to form $O-NCF_3$ which



decomposes into trifluorinated dimethyl carbodiimide and methyl isocyanate when heated to 350 - 400°C in vacuo. These reactions demonstrate the great tendency of the N=O groups of trifluoronitroso methane to addition reactions with nucleophilic and electrophilic compounds. For comparison, some additions similar to the above reactions were conducted with polyfluorinated azomethines: $CF_3N=CF_2$ (Bp. -33°C) and $CF_3N=CFCl$ (Bp. -5°C). In all cases, the additivity of the C=N groups of these compounds was much lower. On reaction of $CF_3N=CF_2$ with diphenyl ketene (autoclaved for 12 hrs at 180°C), not addition, but dimerization of the initial substance took place. The dimer also formed in almost quantitative yields by reaction between $CF_3N=CF_2$ and pyridine at -70 - 50°C. With aniline, the dimer converts into the anilide of the monomer, when subjected to pyrolysis (> 500°C) it dissociates into the monomer ($CF_3N=CF_2$). Unlike the polyfluorinated azomethines above, difluoro formimine easily

Card 3/6

2/020/62/102/003/017/023
B106/B110

Reactions of polyfluorinated...

ketene even more easily under the formation of $(C_6H_5)_2C-CO$ which
 $\begin{matrix} | \\ O-NCF_3 \end{matrix}$

decomposes when heated to 300°C mainly forming trifluoromethyl isocyanate (Bp. 33°C, yield 35%) and traces of trifluoronitroso methane. The latter also reacts with $R_F C \equiv CX$ alkynes ($X = Cl, Br; R_F = CF_3, CF_2Cl, CFC l_2$) at room temperature in an autoclave. $O-NCF_3$ forms on heating trifluoro-



nitroso methane with azodicarbonic acid esters to 100 - 150°C under pressure. Diazomethane and trifluoronitroso methane react at 70°C to give a polymeric nitron $[CF_3N(O)CH_2]_n$ under nitrogen separation.

Phosphazines and trifluoronitroso methane react violently at 70°C following the scheme $(C_6H_5)_3P=N-N=CH_2 + CF_3NO \rightarrow CH_2O$

+ $[C_6H_5)_3P=N-N=NCF_3] \xrightarrow{-N_2} (C_6H_5)_3P=NCF_3$. The product of this reaction also forms from triphenyl phosphine and trifluoromethyl azide under the same conditions. Trifluoronitroso methane and methyl isocyanide react

11.1135
5.2420
11.2131

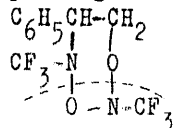
34750
S/020/62/142/003/017/027
B106/B110

AUTHORS: Makarov, S. P., Shpanskiy, V. A., Ginsburg, V. A.,
Shchekotikhin, A. I., Filatov, A. S., Martynova, L. L.,
Pavlovskaya, I. V., Golovaneva, A. P., and Yakubovich, A. Ya

TITLE: Reactions of polyfluorinated nitroso-alkanes with unsaturated
compounds

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 3, 1962, 596 - 599

TEXT: Trifluoronitroso methane is used as an example of some reactions of
polyfluorinated nitroso-alkanes with unsaturated compounds. These addition
reactions take place easily (in an autoclave at -70 to 0°C). Monomers and
polymers containing 1 mole of nitroso compound per olefin mole, form.
Styrene and trifluoronitroso methane also form a compound with the molar
ratio 1 : 2 which decomposes into 1 mole of nitroso compound, formaldehyde,
and the corresponding imine when heated to 70 - 80°C. Therefore it has
the structure $C_6H_5CH-CH_2$. Trifluoronitroso methane adds to diphenyl

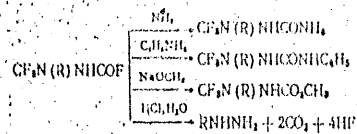


Card (1/5)

328.59
S/020/62/142/002/020/029
B106/B101

Heterolytic transformations of...

polyfluoro alkyl-(aryl)-hydrazino carboxylic acids $CF_nN(R)NHCOF$, from which a number of further derivatives was obtained:



There are 1 table and 3 references: 2 Soviet and 1 non-Soviet.

PRESENTED: June 1, 1961, by I. L. Knunyants, Academician, and M. I. Kabachnik, Academician

SUBMITTED: June 1, 1961

Table 1. Compounds synthesized for the first time.

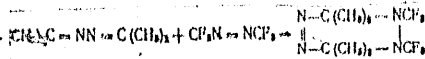
Legend: (a) compound; (b) boiling point; (c) melting point; (d) does not melt below 300°C.

Card 5/11

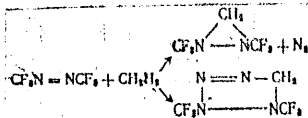
32639
S/020/62/142/002/020/029
B106/h101

Metastolytic transformations of...

conditions (cooling with dry ice). On heating, the adduct decomposes to nitrogen, tetrafluoro ethylene, diethyl ether, ethyl fluoride, diethyl fluoro phosphite, and diethyl ethano phosphinate. In analogy to azodicarboxylic acid esters, hexafluoro azo methane with dienos readily yields the Diels-Alder addition, reacts with azines according to the scheme



and with diazomethane as follows:



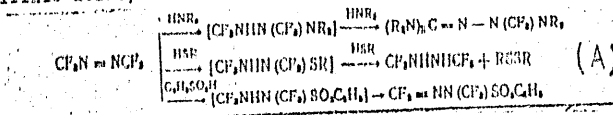
Hexafluoro azo methane reacts smoothly with organo-magnesium compounds at low temperatures and forms the hitherto unknown acid fluorides of

Card 4/7

32839
S/020/62/142/002/020/029
B106/0101

Heterolytic transformations of...

fluorinated azo compounds are particularly sensitive to nucleophilic reagents. The reaction rate with amines grows with the amino basicity, and the reactivity in azo compounds of the type CF_3N-NR drops in the sequence $R-CF_3 > CF_2H > CH_3$. With secondary amines, mercaptans, and sulfinic acids, the azo compounds react as follows:



These conversions probably begin with the formation of a transition complex of the type of a π -complex, e. g., CF_3N-NCF_3 . This assumption

is backed by the fact that the transition complex, in the reaction of hexafluoroazomethane with trialkyl phosphites, can be isolated under mild

Card 3/4

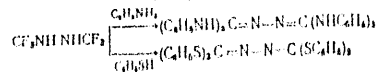
5

32839

S/020/62/142/002/020/029

B106/B101

Heterolytic transformations of...



Hexafluoro hydrazomethane reacts with aluminum chloride to form the dimer of tetrafluoro formazine, and, if oxidized in anhydrous media ($KMnO_4 + CH_3COOH$), it passes over to the intensively yellow cis-form of hexafluoro azo methane, which readily takes the almost colorless trans-form under the action of light, alkali lyes, or metals. In the reduction of azoalkanes which contain the groups CF_2Cl or R_fCF_2 , the corresponding hydrazo compounds cannot be isolated, due to hydrolysis. The compound $CF_3NHNHC_6H_5$ can be distilled in vacuo (b.p. $56^\circ C/1 \text{ mm Hg}$), and passes over to indazole under the action of hydrogen iodide. Under the action of strong acids, the azo group of polyfluoro azoalkanes is able to add one proton which, in the case of asymmetric azoalkanes, is added to the nitrogen atom adjoining the more electronegative substituent. These reactions take place most readily in anhydrous hydrofluoric acid, whereby polyfluoro azoalkanes are dimerized into benzidine derivatives. Poly-

Card 2/3

MAKAROV, S. P.

5

32039

S.3610 2209

S/020/62/142/002/020/029
B136/B10:

11.2214

AUTHORS: Ginsburg, V. A., Yakubovich, A. Ya., Filatov, A. S., Zelenin, G. Ye., Makarov, S. P., Shpanokiy, V. A., Kotel'nikova, G. P., Sergiyenko, L. F., and Martynova, L. L.

TITLE: Heterolytic transformations of polyfluorinated azoalkanes

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 2, 1962, 354-357

TEXT: A number of heterolytic transformations of polyfluorinated azoalkanes was discovered for the first time. The said azoalkanes, while being highly resistant to oxidizing agents, easily react with reducers (HI, H₂S, H₂P) in polar media (ether, methanol) at low temperatures, whereby the azo group is converted into the hydrazo group. Hexafluoro hydrazomethane presents acid properties and is relatively stable in the solvate form in ether or acetone. The etherate reacts with ketene, and the normal diacyl derivative is formed as a result. Hydrogen fluoride is readily separated from hexafluoro hydrazomethane under the action of bases:

Card 1/15

GINSBURG, V.A.; YAKUBOVICH, A.Ya.; FILATOV, A.S.; SHPANSKIY, V.A.;
VLASOVA, Ye.S.; ZELENIN, G.Ye.; SERGIYENKO, L.F.; MARTYNOVA, L.L.;
MAKAROV, S.P.

Production, pyrolysis, and photolysis of polyfluorinated azo
compounds of the aliphatic series. Dokl. AN SSSR 142 no.1:88-91
Ja. '62. (MIRA 14:12)

1. Predstavleno akademikami I.L. Krunyantsem i M.I. Kabachnikom.
(Azo compounds) (Fluorination)

MAKAROV, S.P.; YAKUBOVICH, A.Ya.; GINSBURG, V.A.; FILATOV, A.S.; ENGLIN,
~~M.A.~~; PRIVEZENTSEVA, N.F.; PRIVEZENTSEVA, N.F.; NIKIFOROVA, T.Ya.

Reactions of polyfluorinated nitrosoalkanes with amines. Dokl.
AN SSSR 141 no.2:357-360 N '61. (MIRA 14:11)

1. Predstavleno akademikami I.L.Knunyantsem i M.I.Kabachnikom.
(Nitroso compounds) (Amines)

YAKUBOVICH, A.Ya.; MAZANOV, S.P.; SHENBERG, V.A.; PRIVALNENKOVA, N.P.;
MERTKOVA, L.L.

Pyrolysis and photolysis of polyfluoronitrosoalkanes, a
reaction of nitroso compounds with nitrogen oxide.
Dokl. AN SSSR 141 no.1:125-128 N '61. (USSR 14:11)

1. Predstavleno akademikami A.I. Konyantsem i M.I. Kabachnikom.
(Nitroso compounds)
(Nitrogen oxide)

YAKUBOVICH, A.Ya.; GINSBURG, V.A.; MAKAROV, S.P.; SHPANSKIY, V.A.;
PRIVEZENTSEVA, N.F.; MARTYNOVA, L.L.; KIR'YAN, B.V.; IEMKE, A.L.

Oxidation, reduction, and disproportionation of polyfluoronitrosoal-
kanes. Dokl. AN SSSR 140 no.6:1352-1355 O '61. (MIRA 14:11)

1. Predstavleno akademikami I.L.Knunyantsem i M.I.Kabachnikom.
(Paraffins) (Nitroso compounds) (Oxidation-reduction reaction)

YAKUBOVICH, A.Ya.; GINSBURG, V.A.; MAKAROV, S.P.

Preparation of fluorine derivatives of phosphorus. Zhur.ob.khim.
31 no.5:1517-1518 My '61. (MIRA 14:5)
(Phosphinic acid) (Fluorine compounds)

DUBOV, S.S.; GINSBURG, V.A.; KADINA, M.A.; RODIONOVA, N.P.; RODKIN, S.A.;
MAKAROV, S.P.; FILATOV, A.S.; YAKUBOVICH, A.Ya.

Appearance of the azo group in vibration and electron spectra.
Zhur.VKHO 6 no.5:596-597 '61. (MIRA 14:10)
(Azo compounds--Spectra)

GINSBURG, V.A.; ZELENIN, G.Ye.; DUBOV, S.S.; MAKAROV, S.P.; YAKUBCVICH,
A.Ya.

Synthesis of esters of thioazocarboxylic acids. Zhur.ob.khim.
30 no.8:2689-2692 Ag '60. (MIRA 13:8)
(Azo compounds) (Acids)

8/079/09/090/007/019/030
2001/5661 02XII

5-3700C

ATTACHES:
GUREBIZ, V. A., PRIVEZHENKOVA, K. E., SHUMSKIK, V. A.,
RUBOV, S. I., BOKHOLOVA, A. I.,
MAKAROV, S. I., ZUBOVICH, A. I.

TITLE:
Reaction of Halogens, Nitrogen Oxide, and Polyfluorinated
Ethylenes in Ultraviolet Light. Synthesis and Radical
Decomposition of Polyfluorinated Aliphatic Nitrogen
Compounds

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7,
PP. 2409 - 2415

TEXT: In continuation of their earlier paper (ref. 1) the authors studied the reaction of polyfluorinated ethylenes with HO and halogens in ultraviolet light. These reactions, which are accompanied by a color change or bromine would also lead to the formation of β -halogenated ethylenes. In fact, the authors of the present paper showed that in the reaction of HO with symmetrical difluoro-dichloro ethylene, 1,2-difluoro-1,1,2-trichloro-nitroso ethane results in good yields. This compound proved sufficiently stable and could be isolated (compound 6 in the table). The experiments showed, as had been theoretically expected, that the corresponding nitroso alkenes were obtained in sufficient yields on irradiation of the gas mixtures $HO + Cl_2$ or $HO + Br_2$ with polyfluorinated ethylenes (such as tetrafluoro-1,1-difluoro-chloro-2,2-difluoro ethylene at the ratio olefin : HO : $Hal_2 = 1 : 1 : 1/2$). These compounds have an intensive blue color, and are stable in the dark. The authors also studied the corresponding alkyne dihalides as well as β -nitrogen halides. These compounds are always separated from the reaction mass. Probably they are products of the oxidation of the nitroso compounds. In reducing the nitroso compounds to the corresponding ethylenes by means of hydrogen iodide the corresponding tetrafluoro-1,1,2-trifluoro- and bromo-difluoro-acetohydroxamic acids are formed. This indicates the addition of the halogen to the CF_2 group of the olefin in the reaction between HO , Hal_2 , and olefin. The pyrolysis of

Card 2/3

the $C_2F_2Cl_2O$ and HO_2CF_2O nitroso compounds at $120-130^\circ C$ yields the polyfluorinated ethylenes $C_2F_2Cl_2$ - CF_2Cl and HO_2CF_2O - CF_2O , respectively. There are 1 table and 8 references. 3 Soviet, 1 US, and 2 German.

Submitted: June 4, 1959

Card 3/3

MARKEV, S. I.

S/OT9/60/050/007/016/020
B001/0057 82900

5 37000

AVTHORS: Glaburg, V. A., Prizantseva, N. F., Rodionova, N. F.,
Chern, S., Makarov, S. P., Yakubovich, A. Ya.
TITLE: Reaction of Nitrogen Oxides With Polyfluorinated
Ethylene Synthesis and Reduction of Polyfluorinated
Nitroso Compounds

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7,
pp. 2406 - 2409

TEXT: In continuation of the papers (Refs. 1-7) on the reactions of
nitroso halides with halogenated olefins the authors studied the reac-
tion of N_2O with polyfluorinated ethylenes where nitroso compounds
might have been expected as is the case with non-fluorinated unsaturated
compounds. In the reaction of N_2O in the gaseous state with tetrafluoro-
ethylene at room temperature a liquid of deep-blue color, 2-nitro-1,1,2,2-
tetrafluoro-nitroso-ethane, is readily formed (Refs. 6,7). Besides this
main product (yield more than 60%) a dinitro derivative of tetrafluoro

Card 1/3

ethylene and a small amount of non-identified high-boiling products is
formed. In the same way a chlorine-substituted nitroso compound is
formed from F_2O and trifluoro-chloro ethylene. The nitroso compound is
synthesized by the authors and some other scientists (Refs. 2,5,7), as
well as other polyfluorinated nitroso compounds (Refs. 2,5,7), as
form no dinitro. In the infrared spectrum the nitroso compounds NO_2 and
with tetrafluoro ethylene show characteristic frequencies of the valence
practically the bands ν_{C-O} and ν_{C-N} at 6.2 μ and 12.25 μ which
by J. Mason (Ref. 10). The absorption observed in analogous compounds
action of N_2O with tetrafluoro- or trifluoro-chloro ethylene in the re-
sults with ultraviolet light. The reduction of the nitro-nitroso com-
pounds with hydroiodic acid in ether medium yields the acid fluoride of
($NO_2CF_2CF_2NO$). The structure of the nitro-nitroso compound which was
obtained from N_2O and trifluoro-chloro ethylene shows that in the

Card 2/3

Reaction the addition of H_2O takes place in such a way that the nitroso
group is linked with the carbon atom which has a higher electron density.
There are 17 references: 4 Soviet and 4 German.

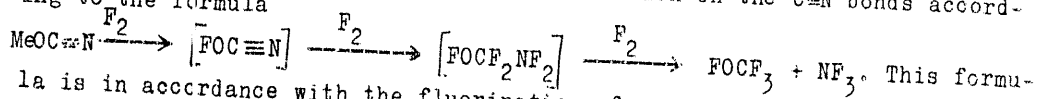
SUBMITTED: June 4, 1959

Card 3/3

MAKAROV, S. P.

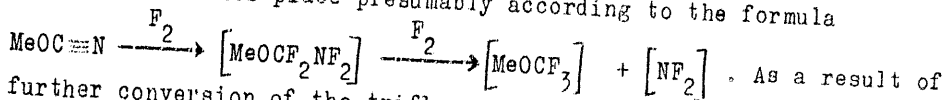
Fluorination of Silver and Potassium Cyanates S/079/60/030/007/036/039/XX
B001/B066

hypofluorite FOCN could not be detected in the fluorination products, which may be explained by a further fluorination on the C≡N bonds according to the formula



This formula is in accordance with the fluorination of potassium cyanate, but not with that of silver cyanate. Thus, another formula had to be found for the fluorination of the cyanates. The authors have previously found that in the heterogeneous fluorination of the complex $\text{CH}_3\text{CN}\cdot\text{BF}_3$ fluorine adds chiefly to the C≡N bond to form $\text{CH}_3\text{CF}_2\text{NF}_2$ (Ref. 9). Therefore, the above

fluorination takes place presumably according to the formula



As a result of further conversion of the trifluoro-methylate of the metal, which is formed as an intermediate, carbonyl fluoride or trifluoro methyl-hypofluorite may be formed. There are 12 references: 2 Soviet, 12 US, and 3 German.

SUBMITTED: July 1, 1959

Card 2/2

S/079/60/C30/007/036/039/XX
B001/B066

AUTHORS: Yakubovich, A. Ya., Englin, M. A., and Makarov, S. P.

TITLE: Fluorination of Silver and Potassium Cyanates

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7, pp. 2374-2377

TEXT: The authors describe the heterogeneous fluorination of silver and potassium cyanates. The initial cyanate was mixed with calcium fluoride and treated with elementary fluorine diluted with nitrogen at 25-55°C. The fluorination of silver cyanate gives carbonyl fluoride COF_2 (72%) and carbonic acid (24.5%). No nitrogen-containing products were detected, which may be due to the conversion of cyano-nitride to elementary nitrogen; it was difficult to confirm the presence of the latter because of the considerable dilution of the initial fluorine with nitrogen. Silver cyanate is quantitatively converted to silver difluoride. On fluorination of potassium cyanate, trifluoro methyl-hypofluorite, CF_3OF (80%), and nitrogen trifluoride, NF_3 (60%), were separated in addition to potassium fluoride and small quantities of carbonic acid and carbonyl fluoride. The expected

Card 1/2

85611

Fluorination of the Complex of Acetonitrile With Boron Trifluoride S/079/60/030/007/035/039/XX
B001/B066

that the structure suggested for the product is that of α, α, N, N -tetrafluoro ethyl amine. On fluorination of the complex $CH_3CN \cdot BF_3$ with elementary fluorine, 36% of acetonitrile remains unchanged. The yields of the fluorination products referred to the initial acetonitrile are the following: for NF_3 - 6.5%, CH_3CF_3 - 5%, CH_2CF_2NF - 3%, $CH_3CF_2NF_2$ - 2.5%, CHF_2CN - 1%. There are 12 references: 1 Soviet, 7 US, 3 British, 3 German, 1 French, and 1 Belgian.

SUBMITTED: July 1, 1959

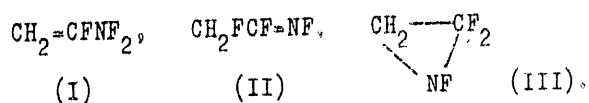
Card 3/3

85613

Fluorination of the Complex of Acetonitrile
With Boron Trifluoride

S/079/60/030/007/035/039/XX
B001/B066

the isomeric formulas (I), (II), (III):



To confirm the structure of this product its infrared spectrum was examined. There is a band characteristic of the C-H bond. One band group is caused by vibrations of the C-F bond. An intense band may be assigned to stretching vibrations of the N-F bond. These results and further spectroscopic data (Ref. 6) indicated that the structures (I) and (II) of the product $\text{C}_2\text{H}_2\text{NF}_3$ are not confirmed spectroscopically, which fact speaks in favor of formula (III). This assumption is also supported by the presence of two bands in the infrared, which may be regarded as deformation vibrations of a three-membered ring. The structure of the products discussed may be that of fluorinated ethylene imine. The second product with the molecular weight 117 does not decolorize the aqueous-alkaline KMnO_4 solution. Its molecular weight and elementary composition correspond to the formula $\text{C}_2\text{H}_2\text{NF}_4$. In its infrared spectrum there are absorption bands which may be assigned to the N-F and C-H bonds, and a band group appears which is due to C-F vibrations. All these properties indicate

Card 2/3

85613

S/079/60/030/007/035/039/XX
B001/B066

// 2130

AUTHORS: Englin, M. A., Makarov, S. P., Dubov, S. S., Krasnousev,
L. A., and Yakubovich, A. Ia.TITLE: Fluorination of the Complex of Acetonitrile With Boron Tri-
fluoride

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7, pp. 2371-2374

TEXT: On the basis of Refs. 1-5, the above reaction was carried out with dilute fluorine in a copper reaction vessel at room temperature. NF_3 , CH_2CF_3 , CHF_2CN , and two new products were separated by distillation (one of them boiled at -25 - -24.5°C , the other at -4.8 - -4.7°C) in addition to a considerable quantity of unchanged acetonitrile. The first product, a colorless gas, is completely decomposed by alcoholic alkali lye, does not separate any iodine from alcoholic potassium iodide solution, is easily soluble in organic solvents and difficultly in water. Its elementary composition and molecular weight correspond to the formula $\text{C}_2\text{H}_2\text{NF}_3$. Its structure, which is probably due to the fluorination of acetonitrile, can be possibly represented by

Card 1/3

5.3400

77900

SOV/79-30-2-51/78

AUTHORS: Yakubovich, A. Ya., Makarov, S. P.

TITLE: Synthesis of Vinyl Monomers. VII. β -(Vinylethynyl)-
Ethanol and γ -Hydroxybutyronitrile.PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 2, pp 606-607
(USSR)

ABSTRACT: The reaction between vinylacetylene and ethylene oxide in liquid ammonia yielded β -(vinylethynyl)-ethanol (b.p. 63-64 ° C at 8 mm, $n_D^{20} = 1.4932$) which on hydrogenation was converted to n-hexanol. A similar condensation of sodium salt of acetonitrile with ethylene oxide in liquid ammonia yielded γ -hydroxy-butyronitrile (b.p. 235-240 ° C). Evidently the reactions are general and can be used to obtain en-yn-ols and γ -hydroxynitriles. There are 4 references, 1 Belgian, 2 Soviet, and 1 German.

SUBMITTED: December 29, 1958

Card 1/1

79-28-4-40/60

A Production Method for Fluorine Derivatives of the Organometal Compounds
of Silicon, Tin and Sulfur

fluoride, tin tetrafluoride, tributoxyfluorsilane, diethyl-
difluorsilane, ethyltrifluorsilane, and of the methyl ester
of the fluorsulfonic acid. There are 3 references, 1 of which
is Soviet.

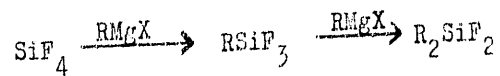
SUBMITTED: February 23, 1957

Card 4/4

79-28-4-40/60

A Production Method for Fluorine Derivatives of the Organometal Compounds
of Silicon, Tin and Sulfur

the authors already before in the synthesis of ethylsilane-
fluorides (Ref 3):



The reaction of acetyl fluoride with alkoxy compounds of sulfur was investigated at the example of dimethyl sulfate. On that occasion formed the methyl ester of the fluorsulfonic acid with a yield of 60 % at conduction of acetylfluoride vapor into boiling dimethyl sulfats. From the experimental results comes out that the reaction of the carboxylic acid fluorides with alkoxy compounds of various elements is a commonly applicable important method for the synthesis of the concerned fluorine compounds. As the initial products - alkoxy compounds of the concerned elements and carboxylic acid fluorides - in general are easily accessible compounds, the described method earns general preparative interest. In an experimental part exactly are described the synthesis and the properties of diethylethoxy tin fluoride, diethyl tin

Card 3/4

79 28-4 49/60

A Production Method for Fluoride Derivatives of the Organometal Compounds of Silicon, Tin and Sulfur

to which the alkoxy groups are bound, is an electropositive element. Thus alkoxy compounds of tin exchange the alkoxy groups on heating if reaction with acetyl fluoride already in the cold for fluorine. As has corresponding compounds of silicon and sulfur, the exchange takes place at heating up. In all cases the fluorine compounds form with high yield. By alteration of the ratio of the reaction partners in the case of polyalkoxy compounds not only one but also a higher number of alkoxy groups can be exchanged. So, e.g. from diethyldiethoxy tin a mono- and a difluoride can be obtained; of tetraethoxy tin in case of surplus of acetylfluoride easily forms tin tetrafluoride.

The reaction of acetyl fluoride with alkoxy silanes was investigated at the example of tetrabutoxysilane. In this case forms in case of heating up to 180° tributoxyfluorsilane with a yield of 60 - 70%. The reaction of tetraethoxysilane with benzoyl fluoride was investigated already before by Peppard, Brown and Johnson (Ref 2), but these authors could not observe any exchange of the alkoxy groups for fluorine. Polyfluorsilanes are obtained more easily by Grignard's reaction from silicon tetrafluoride, which was observed by

Card 2/4

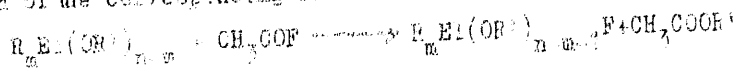
79 28 2 10/50

AUTHORS: Yakubovich, A. A. Makarev, S. P. Grinberg, I. A.

TITLE: A Production Method for Fluorine Derivatives of the Organometal Compounds of Silicon, Tin and Sulfur (Metod polucheniya ftorproizvodnykh kremnyay, olova i sery)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 4, pp. 1036-1036 (USSR)

ABSTRACT: In the series of the elementorganic compounds very often alkoxy groups, which are bound to the concerned element, are by action of acid chlorides exchanged for chlorine. The possibility of the analogous exchange of alkoxy groups for fluorine by reaction with acid fluorides has up to now been investigated yet specially. The authors investigated this reaction at alkoxy compounds of silicon, tin and sulfur. On that occasion showed up that the acid fluorides of carboxylic acids, in particular the easily accessible acetyl fluoride, react with the alkoxy compounds of the named elements under formation of the corresponding fluorides:



Card 1/4

The described reaction takes place faster if the central atom,

MAKAROV, S. P. Lt. Col. of Med. Services

"The Significance of the Vestibulometric Test for Determination of Vestibular Disturbances of the Flying Personnel," *Voyenno-medits. zhur.*, No.2, pp 51-56, 1955

Describes the author's experience with trying out N. N. Lozanov's method of vestibulometric examination.

Verbatim translation - D 311971, 16 Aug 55

MAKAROV, S. P.

5

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Organic Chemistry

Dchem
Synthesis of heteroorganic compounds of the aliphatic series by the direct method. V. Synthesis of compounds of elements of Group IV—organolead compounds. A. Ya. Yakubovich, E. N. Merkulova, S. P. Makarov, and H. L. Gavrilov. *J. Gen. Chem. U.S.S.R.* 23, 2115-17 (1952) (Engl. translation).—See *C.A.* 47, 9267a. H. L. H.

mf

MAKAROV, S.P.

YAKUBOVICI, A.Ya.; MAKAROV, S.P.; GAVRILOV, G.I.

Synthesis of heteroorganic compounds of the aliphatic series by the diazo method. IV. Synthesis of compounds of elements of group IV. Organotin compounds. Zhur. Obshchey Khim. 22, 1788-93 '52. (CA 47 no.18:9257 '53)

(MLRA 5:11)

MAKAROV, S.P.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Organic Chemistry

(3)

Synthesis of heteroorganic compounds of the aliphatic series by the diazo method. I. Synthesis of compounds of elements of group V: antimony, arsenic, and bismuth organic compounds. A. Ya. Yakubovich and S. P. Makarov. *J. Gen. Chem. (U.S.S.R.)* 22, 1569-74 (1952) (Engl. translation).—See *C.A.* 47, 8010c. II. Synthesis of compounds of group V elements—organophosphorus compounds. A. Ya. Yakubovich and V. A. Ginsburg. *Ibid.* 1575-82.—See *C.A.* 47, 9254g. III. Synthesis of compounds of elements of group IV. Organosilicon compounds. A. Ya. Yakubovich and V. A. Ginsburg. *Ibid.* 1821-5.—See *C.A.* 47, 9250c. IV. Synthesis of compounds of elements of group IV. Organotin compounds: A. Ya. Yakubovich, S. P. Makarov, and G. I. Gavrilov. *Ibid.* 1827-32.—See *C.A.* 47, 9257h.

USSR/Chemistry - Organometallic Com- Sep 52
pounds, Arsenic Compounds

"Synthesis of Organo-Elemental Compounds of the Aliphatic Series by the Diazo Method. I. Synthesis of Compounds of Group V Elements - Antimony, Arsenic, and Bismuth-Organic Compounds," A. Ya. Yakubovich, S. P. Makarov

"Zhur Obshch Khim" Vol 22, No 9, pp 1520-1534

The diazo method was successfully used for the synthesis of antimony, arsenic, and bismuth-organic compounds. From antimony trichloride and tri-(chloromethyl)-stibene, di-(alpha-chloroethyl)-chloroethane, di-(alpha-chloroethyl)-chloroarsine or stibene was obtained. Antimony pentachloride added in a molar ratio to diazomethane reacts under formation of antimony trichloride. In the reaction of arsenic trichloride with diazoethane, di-(alpha-chloroethyl)-chloroarsine or tri-(alpha-chloroethyl)-arsine may be obtained depending on the ratio of reagents. The latter is an unstable compound which normally decomposes on standing. Bismuth trichloride reacts with diazomethane to form an unstable oxide of chloromethylbismuth, which after treatment with HCl, yields unstable chloromethyldichlorobismuth.

232718

MAKAROV, S. P.

(3)

232718

157 AND 158 ORDERS PROCESSES AND PROPERTIES INDEX 159 AND 174 ORDERS

C.A. 10

SYNTHESIS OF HETERO-ORGANIC COMPOUNDS BY THE DIAZO METHOD. SYNTHESIS OF COMPOUNDS OF ELEMENTS OF GROUP IV. A.Ya. Yakubovich, S.P. Makarov, V.A. (Hinsburg), G.I. Gavrilov, and E.N. Merkulova. Doklady Akad. Nauk S.S.S.R. 72, 69-72 (1960); of. C.A. 44, 8320a -- Halides of

Sn, Pb, and Si react progressively with diazo compds. with formation of RCHX derivs. and elimination of N. Chlorides and bromides react well at 0-5° in C₆H₆ and give the entire possible spectrum of substituted products in 40-80% yields; usually the ease of reaction declines with increased degree of substitution around the central atom. The reagent ratio may control the relative ratios of the products formed only to a moderate extent. Mixed products may be similarly obtained with partly substituted halides. SnF₄ does not react, but SnCl₄ and SnBr₄ react well. SnCl₄ gives semisubstituted derivs. of 4-valent Sn; thus in Br₂O with CH₃N₂ it gave apparently $CH_3Sn(CH_2SnCl_2)_2O \cdot Et_2O$. In C₆H₆, high-mol. products form, apparently via formation of CH₃SnCl₂ which reacts with SnCl₄ and yields products of the type $-SnCl_2CH_2(SnCl_2CH_2)_n-$, polymerisation being aided by traces of moisture. PbCl₂ and the NH₄ salt of chloroplumbic acid fail to react, probably owing to insol. Pb(OAc)₂ reacts with CH₃N₂ yielding N, Pb(OAc)₂ and CH₃OAc. Alkylation of the Pb-X link was done only with di- or triethyl-lead chlorides when activated by Cu bromide; although chloromethyl derivs. were obtained the chloroethyl derivs. were too unstable to be isolated. SiCl₄ and SiBr₄ react too vigorously at room temp., but give normal products at -45°; RSiCl₃ and R₂SiCl₂ react slower than SiCl₄ or RCHXSiCl₃. Higher temp. favor formation

over

450-514 METALLURGICAL LITERATURE CLASSIFICATION

160000 02 161000 010 000 000 16210001

163000 01 164000 010 000 000 16510001

MAKAROV, S. P.

CA

25

Aniline black. S. V. KLYUCKARBY and S. P. MAKAROV. Russ. 27,322, Nov. 9, 1928. In the prepn. of aniline black from $p\text{-C}_6\text{H}_4\text{NH}_2$ and NH_4CNS , there is added (in order to prevent weakening of the fiber) to the usual mixts. a prepn. obtained by consecutively dissolving in water $p\text{-C}_6\text{H}_4\text{NH}_2$, *m*-tolylenediamine, resorcinol, NH_4CNS and NaHSO_3 , with or without the addn. of glycine, and followed by the addn. of hypsulphite.

AS-514 METALLURGICAL LITERATURE CLASSIFICATION

LAPIN, P.I.; KOMAROV, I.A.; LEONOV, A.G.; MAZURKEVICH, F.S.; MAKAROV,
S.N.; MARTEM'YANOV, P.B.; MOSUNOVA, D.I. [deceased]; SAKHAROV,
I.M.; SIDNEVA, S.V.; TSITSIN, N.V., akademik, otv.red.;
MAKAROV, S.N., red.izd-va; GUSEVA, A.P., tekhn.red.

[Trees and shrubs; results obtained in the Main Botanical
Garden of the Academy of Sciences of the U.S.S.R.] Derev'ia
i kustarniki; kratkie itogi introduktsii v Glavnom botanicheskom
sadu Akademii nauk SSSR. Moskva, Izd-vo Akad.nauk SSSR, 1959.
190 p. (MIRA 12:10)

1. Moscow. Glavnyy botanicheskiy sad.
(Trees) (Shrubs)

USSR/Plant Diseases. Diseases of Cultivated Plants.

N

Abs Jour : Ref Zhur - Biologiya, No 16, 25 Aug 57, 69564

Abstract : frosts. A double protective layer, by straw and soil, lowered the percentage of dry sleeves and shafts. Positive results were also obtained by sprinkling the vines before sheltering by 10% to 20% solution of green vitriol. The relatively resistant species against spotty necrosis in Moldavia, in Rostov Region, are pointed out. Bibl. 24 references.

Card 2/2

Makarov, S.N.

* USSR/Plant Diseases. Diseases of Cultivated Plants.

N

Abs Jour : Ref Zhur - Biologiya, No 16, 25 Aug 57, 69564

Author : Makarov, S.N.
Title : Spotty Necrosis and Shrivelled Arms of Grapes.

Orig Pub : Izv. Moldav. fil. AN SSSR, 1956, No 1, 91-113.

Abstract : Spotty necrosis, called "chernilka" in Bulgaria, causes mass shrivelling of sleeves and shafts (shrivelled arms) of grapevines. The disease appears in the shape of dark brown spots on the bast. Spots of dead tissue appear on the vine which comes in contact with the soil in the sheltering ditch, more often in the second half of winter. The main cause of the disease is the frequent change of positive and negative temperatures in the soil where the vine is sheltered. The previous summer's drought, and also other causes, worsen the physiological preparation for wintering and enhance the deterioration. Soil fungi may increase the damage caused by

Card 1/2

MAKAROV S. N.

Sexual differences in plants based on vegetative and biological characteristics. *Biul. Glav. bot. sada* no.17:42-48 '54. (MLRA 8:3)

1. Glavnyy botanicheskiy sad Akademii nauk SSSR.
(Plants, Sex in)

NAZAREVSKIY, S.L.---(continued) Card 4.

sad. Akademii nauk Usbaks koy SSR (for Rusanov, Bochantseva); 44.
Botanicheskiy sad Akademii nauk Turkmenskoy SSR (for Blinovskiy);
45. Respublikanskiy sad Akademii nauk Kazakhs koy SSR (for Klyshev,
Mushegyan).

(Botanical gardens)

NAZAREVSKIY, S.L.----(continued) Card 3.

Akademi nauk USSR (for Grishko, Likhvar', Vil'chinskiy); 24. Kiyevskiy sel'skokhozyaystvennyy institut (for Lypa); 25. Botanicheskiy sad Chernovitskogo gosudarstvennogo universiteta (for Orekhov); 26. Botanicheskiy sad pri L'vovskom gosudarstvennom universitete imeni Iv. Franko (for Shcherbina); 27. Botanicheskiy sad Khar'kovskogo gosudarstvennogo universiteta imeni A.M. Gor'kogo (for TSyganokova); 28. Botanicheskiy sad Zhitomirskogo sel'skokhozyaystvennogo instituta (for Baranovskiy); 29. Botanicheskiy sad Akademii nauk Belorusskoy SSR (for Georgiyevskiy); 30. Institut biologii Akademii nauk Belorusskoy SSR (for Stepunin); 31. Botanicheskiy sad Akademii Litovskoy SSR (for Lukaytane); 32. Botanicheskiy sad Latviyskogo gosudarstvennogo universiteta (for Ozolin); 33. Kabardinskiy krayevedcheskiy botanicheskiy sad (for Kos); 34. Sukhumskiy botanicheskiy sad Akademii nauk Gruzinskoy SSR (for Vasil'yev, Rukhadze); 35. Batsumskiy botanicheskiy sad Akademii nauk Gruzinskoy SSR (for Shanidze); 36. Tbilisskiy botanicheskiy sad Akademii nauk Gruzinskoy SSR (for Mandzhavidze); 37. Sochinskiy park Dendrariy (for Korkeshko); 38. Gosudarstvennyy Nikitskiy botanicheskiy sad imeni V.M. Molotova (for Sergeyev, Voloshin); 39. Krymskiy filial Akademii nauk SSSR (for Rybin); 40. Botanicheskiy sad Moldavskogo filiala Akademii nauk SSSR (for Ivanova); 41. Botanicheskiy sad Botanicheskogo instituta Akademii nauk Tadzhikskoy SSR (for Ryabova); 42. Botanicheskiy sad Kirgizskogo filiala Akademii nauk SSSR (for Gareyev); 43. Botanicheskiy (continued on next card)

NAZAREVSKIY, S.L.----(continued) Card 2.

gosudarstvennogo ordena Lenina universiteta (for Zaleskiy); 6. Pol'yarno-Al'piyskiy botanicheskiy sad Kol'skogo filiala imeni S.M. Kirova Akademii nauk SSSR (for Avrorin); 7. Botanicheskiy sad pri Tomskom gosudarstvennom universiteta (for Ivanov); 8. Botanicheskiy sad pri Tomskom gosudarstvennom universiteta imeni V.V. Kuybysheva (for Prik-ladov); 9. Tsentral'nyy Sibirskiy botanicheskiy sad Zapadno-Sibirskogo filiala Akademii nauk SSSR (for Salamatov, Sobolevskaya); 10. Botanicheskiy sad Irkutsko gosudarstvennogo universiteta imeni A.A. Zhdanova (for Malinovskiy); 11. Altayskaya plodovo-yagodnaya opyt-naya stantsiya (for Luchnik); 12. Bashkirskiy botanicheskiy sad (for Kravchenko); 13. Lesostepnaya selektsionnaya opyt'naya stantsiya dekorativnykh kul'tur tresta Goszelenkhoz Ministerstva kommunal'nogo kho-zyaystva RSFSR (for Vekhov); 14. Bryanskiy lesokhozyaystvennyy insti-tut (for Grozdov); 15. Botanicheskiy sad pri Voronezhskom gosudar-stvennom universitete (for Mashkin); 16. Orekhovo-Zuyevskiy pedago-gicheskii institut (for Bosse); 17. Botanicheskiy sad pri Rostovskom gosudarstvennom universitete imeni V.M. Molotova (for Matukhin); 18. Botanicheskiy sad Kuybyshevskogo gorodckogo otdela narodnogo obrazo-vaniya (for Zatvarnitskiy); 19. Zoobotanicheskiy sad pri Kazanskom universitete (for Grachev); 20. Gosudarstvennyy respublikanskiy proektnyy institut "Giprokommunistroy" (for Cherkasov); 21. Botani-cheskiy sad Odesskogo gosudarstvennogo universiteta imeni I.I. Mechni-kova (for Kirkopulo); 22. Botanicheskiy sad pri Dnepropetrovskom gosudarstvennom universitete (for Levitskaya); 23. Botanicheskiy sad
(continued on next card)

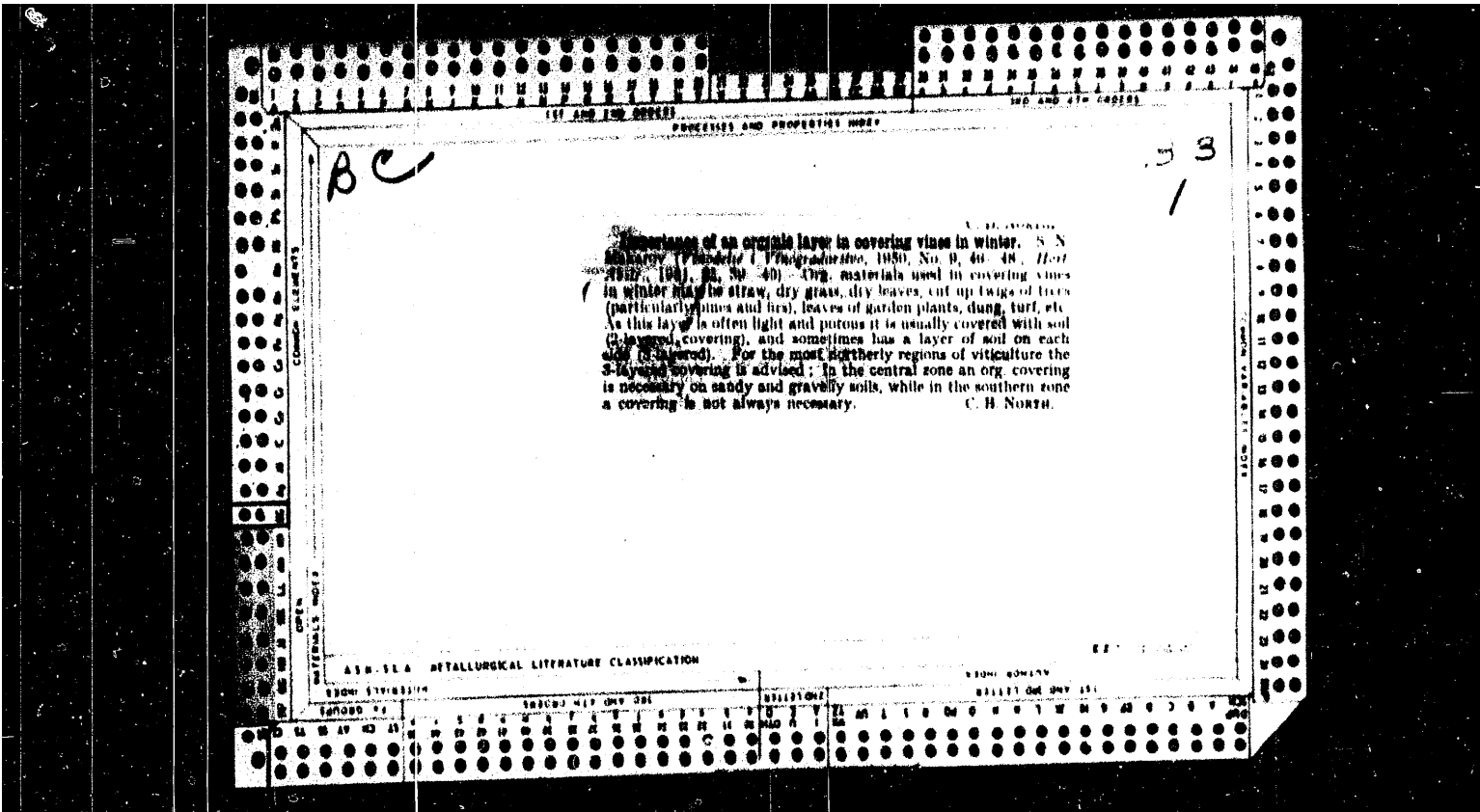
NAZAREVSKIY, S.I.; MAKAROV, S.N.; PILIPENKO, F.S.; GERASIMOV, M.V.; IL'INSKAYA, M.L.; VEKSLER, A.I., [deceased]; VASIL'YEV, I.M.; IL'INA, N.V.; SOKOLOV, S.Ya.; LOZINA-LOZINSKAYA, A.S.; SAAKOV, S.G.; ZALESSEIY, D.M.; AVGRIN, N.A.; IVANOV, M.I.; PRIKLADOV, N.V.; SOBOLEVSKAYA, K.A.; SALAMATOV, M.N.; MALINOVSKIY, P.I.; LUCHNIK, A.I.; KRAVCHENKO, O.A.; VEKHOV, N.K.; GROZDOV, B.V.; MASHKIN, S.; BOSSE, G.G.; PALIN, P.S., (g. Shuya, Ivanovskoy oblasti); MATUKHIN; ZATVARNITSKIY, G.F.; GRACHEV, N.G.; CHERKASOV, M.I.; KIRKOPULO, Ye.N.; LEVITSKAYA, A.M.; GRISHKO, N.N.; LIKHVAR', D.F. VIL'CHINSKIY, N.M.; LYPA, A.L.; OREKHOV, M.V.; SHCHERBINA, A.A.; TSYGANKOVA, V.Z.; BARANOVSKIY, A.L.; GEORGIYEVSKIY, S.D.; STEPUNIN, G.A. OZOLIN, E.P.; LUKAYTENE, M.K.; KOS, Yu.I.; VAIL'YEV, A.V.; RUKHADZE, P.Ye.; VASHADZE, V.N.; SHANIDZE, V.M.; MANDZHAVIDZE, D.V.; KORKESHKO, A.L.; KOLESNIKOV, A.I., (g. Sochi); SERGEYEV, L.I.; VOLOSHIN, M.P.; RYBIN, V.A.; IVANOVA, B.I.; RYABOVA, T.I.; GAREYEV, E.Z.; RUSANOV, F.N.; BOCHANTSEVA, Z.P.; BLINOVSKIY, K.V.; KLYSHEV, L.K.; MUSHEGYAN, A.M.; LEONOV, L.M.

Talks given by participants in the meeting. Biul.Glav.bot.sada no.15:
85-182 '53. (MLRA 9:1)

1. Glavnyy botanicheskiy sad Akademii nauk SSSR (for Makarov Pilipenko, Gerasimov, Il'inskaya, Veksler); 2. Akademiya komunal'nogo khozyaystva imeni K.D. Pamfilova for Vasil'yev); 3. Vsesoyuznaya sel'skokhozyaystvennaya vystavka (for Il'ina); 4. Botanicheskiy sad Botanicheskogo instituta imeni V.L.Komarova Akademii nauk SSSR (for Sokolov, Lozina-Lozinskaya, Saakov); 5. Botanicheskiy sad Leningradskogo
(continued on next card)

1. MAKAROV, S. N.
2. SSSR (600)
4. Oak
7. Biological forms of English "summor" oak in the Ostankinskaya Forest.
Biul. Glav. bot. sada No. 13, 1952

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.



Minor systems of differential . . . S/044/62/000/008/009/073
C111/C333

$x_1^{(m)} = (x_{k1}^{(m)}, \dots, x_{N1}^{(m)})$ of (3).

The equation (1) and (3) are identical for $m = 1$, for $m = n$ (3) is a scalar equation $d|X|/dt = |X| \operatorname{tr} P$, where $\operatorname{tr} P = \sum_{i=1}^n p_{ii}$ is the trace of P . If all $p_{ij}(t)$ are limited in one interval, then so are all $p_{kl}^{(m)}(t)$; if all $p_{ij}(t)$ are periodic, then the scalar system of equations (2) is regular and reducible. The expressions of the elements $p_{kl}^{(m)}$ by the p_{ij} are given for all $m = 2, 3, \dots, n-1$ and $n = 1, \dots, 6$; the corresponding matrices are found in an appendix. As application of the properties of (2), mention is made of the A. M. Lyapunov method for calculating the invariants of the characteristic equation of system (1) with periodic $P(t)$.

[Abstracter's note: Complete translation.]

Card 3/3

Minor systems of differential . . . S/044/62/000/008/009/073
C111/C333

$x_{ij}^{(m)}$ which are compiled from the elements of the determinant $|X|$ of matrix X . It is proven that the matrix X^m of the matrix equation (which the author designates as a minor equation) satisfies

$$\frac{d}{dt} X^m = P^m(t) X^m \text{ for all } 1 \leq m \leq n \quad (2)$$

where the elements of the matrix $P^m(t) = (p_{kl}^{(m)}(t))$ ($k, l = 1, \dots, N$; $N = C_n^m$ -- the number of combinations of m elements from n) depend linearly on the elements $p_{ij}(t)$ of $P(t)$. Since (2) is a Cayley-Hamilton equation relative to the equation

$$\frac{d}{dt} X = P(t)X \quad (3)$$

X^m is, therefore, the matrix of the fundamental system of the solutions

Card 2/3

16-6500

40512

S/044/62/000/008/009/073
C111/C333

AUTHOR: Makarov, S. M.

TITLE: Minor systems of differential equations and their application in the determination of the invariants of the characteristic equation

PERIODICAL: Referativnyy zhurnal, Matematika, no. 8, 1962, 36, abstract 8B161. ("Tr. Kuybyshevsk. aviats. in-t", 1961, no. 12, 371-383) f

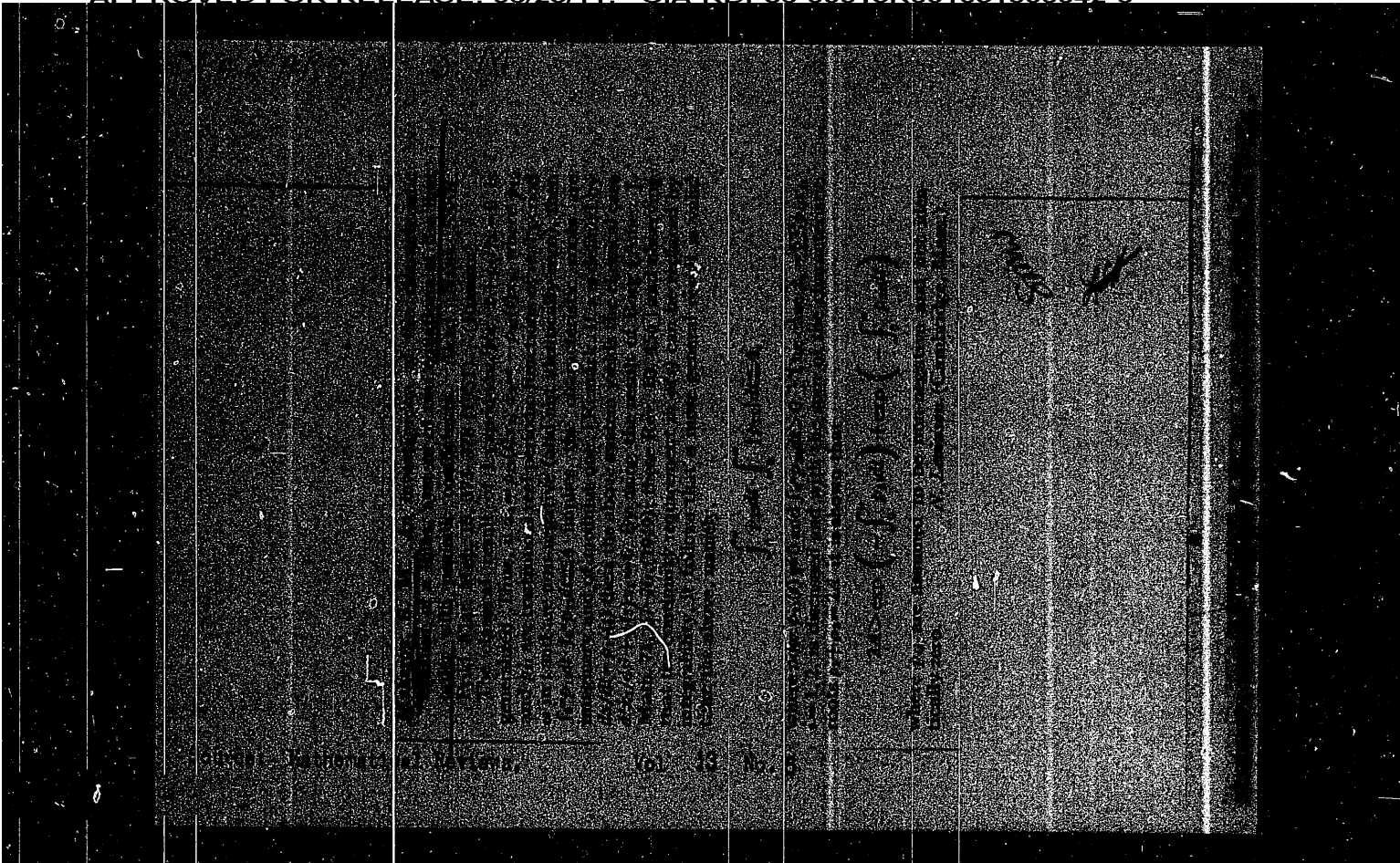
TEXT: Let $X = (x_{ij})$ be the matrix of the fundamental system of the solutions $x_j = (x_{1j}, \dots, x_{nj})$ of the vector equation

$$\frac{d}{dt}x = P(t)x \quad (1)$$

where the matrix $P(t) \equiv (P_{ij}(t))$ satisfies the usual conditions for the existence and uniqueness of the solution for all $t \geq t_0$. The elements of the matrix $X^m = (x_{ij}^{(m)})$ are the various minors of m -th order

Card 1/3

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031500042-6



MAKAROV, S.V.

Evaluation of the complexity of a splitting algorithm.
Kibernetika no. 4:31-37 J1-Ag '65. (MIRA 18:12)

1. Submitted Jan. 18, 1965.

MAKAROV, S. K.

USSR

V 1963. FIVE-YEAR-CHEMICAL LINE OF DEVELOPMENT FOR PETROLEUM PROCESSING
 MAKAROV, S. K., GURIN, D. I., PONOMAREV, L. I. and
 KREMLIN, M. M. (Inst. Chem. (Oil Ind., Moscow), Feb. 1962, 6-71). The
 most profitable line of development for the U.S.S.R. oil industry is seen in
 the production, in addition to fuels and lubricants, of large quantities
 of benzene, ethyl alcohol, fatty acids and detergents.
 Hydrogenation should help to increase utilization of the crude but the
 production of hydrogen needs to be made cheaper by the use of new
 methods of treating refinery wastes. (L)

3
62

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
LST AND ENG GROUPS										PROCESSES AND PROPERTIES INDEX										MFG AND STM GROUPS																													
CA																																																	
Poisoning of alumina-silica catalyst by water vapor. S. K. Makgroy and M. A. Kaliko. <i>Neftyanoe Khoz.</i> 25, No. 2, 42-6 (1947). A Houdry-type alumina-silica catalyst normally capable of producing a 40% yield of gasoline, gave only a 35% yield after storage in open air. The deactivation is due partly to adsorption and capillary condensation of water vapor from the air. In addition, there is also absorption, which takes place at a lower rate than the first-mentioned effect and which decreases with rise in temp. At 500-600° enough absorbed moisture remains in the catalyst to cause subsequent deactivation at higher temps. Exothermic effects exhibited in the absorption and desorption isotherms at 400-600° are apparently due to catalytic action of moisture on the process of recrystn. of the catalyst. The injurious influence of absorption can be prevented by the use of vacuum during the period of thermal "formation" of the catalyst structure, or by removing the residual physically bound moisture from the catalyst by calcining it <i>in vacuo</i> at a temp. up to 550-600°. Bruno C. Metzner																																																	
22																																																	
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION																																																	
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LST AND ENG GROUPS																																																	

1ST AND 2ND COVERS PROCESSES AND PROPERTIES INDEX 3RD AND 4TH COVERS

CA

Catalyst. S. K. Makenov, B. L. Moldavskii, and E. I. Rabinovich. U.S.S.R. 65,828, Feb. 28, 1946. A mechanically strong catalyst, e.g., for the purification of oil-cracking products or the like, is made by first molding the clay and calcining the molded shapes at approx. 600°. The calcined clay is then activated by the usual means.
M. Hosh

COMMON ELEMENTS

MATERIALS INDEX

ASB-11A METALLURGICAL LITERATURE CLASSIFICATION

FROM SWISS

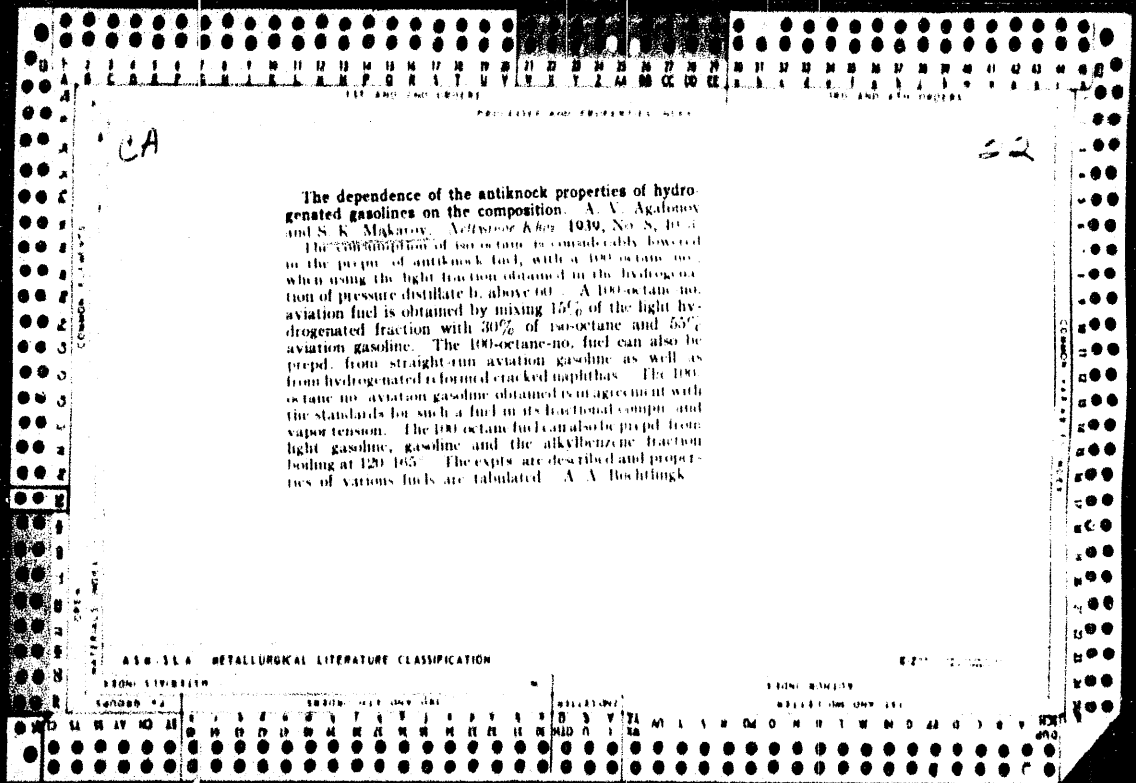
FROM ROMANOV

FROM LETTERS

FROM ONE QNY

FROM

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
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GONCHARENKO, Mikhail Nikolayevich; MAKAROV, S.I., spets. red.;
GRIGOR'YEVA, A.I., red.; GUREV, V.Z., tekhn. red.

[Automatic control in military science] Kibernetika v voen-
nom dele. Moskva, DOSAAF, 1963. 343 p. (MIRA 16:10)
(United States--Fire control (Gunnery))
(United States--Guided missiles)
(United States--Electronics in military engineering)

MAKAROV, S.I.; KUZ'MIN, I.G.

Automatic coke sampler. Sbor.rats,predl.vnedr.v proizvod. no.5:43-44
'50. (MIRA 14:8)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Coke--Testing)

BOCHAROV, N.F., kand. tekhn. nauk; GUSEV, V.I.; KRABINOV, Ye.B., kand. tekhn. nauk; MAKAROV, S.G.; SEMENOV, V.M., kand. tekhn. nauk

Torque distribution in the transmission of motor vehicles having several driving wheels with wide-lug tires. Avt. prom. 31 no.2: 14-17 F '65. (MIRA 18:3)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni Baumana i Tsentral'nyy ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skiy avtomobil'nyy i avtomotorny institut.

BOCHAROV, H.F., kand. tekhn. nauk, dokent; EL' - BUL, Ye.n., kand. tekhn. nauk;
GUMOV, V.I., inzh.; IKHAROV, E.G., inzh.

Balloon tires and the design of their rims. *Tr. Vuzovskogo VNIIT*
 Mashinostr. no.9:125-129 '64. (Moscow 1964)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche imeni N.S.
Baumana.

BOCHAROV, N.F., kand. tekhn. nauk, dotsent; GUSEV, V.I., inzh.;
KRADINOV, Ye.B., kand. tekhn. nauk; MAKAROV, S.G., inzh.

Tensometering device for measuring the deformations of a
balloon tire. Izv. vys. ucheb. zav.; mashinostr. no.2:119-
123 '64. (MIRA 17:5)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni
Baumana.

ACCESSION NR: 125001166

work was related to theoretical equations developed by Ye. A. Chudakov (Kachaniya
 avtomobil'nykh kolens, Izd. AN SSSR, M., 1948). Rolling resistance was related to
 vertical deflection and rolling radius, and these resistance forces were found to be
 in close agreement with Chudakov's hypotheses. Testing apparatus described by N. F.
 Gochanov, V. L. Gusev, and Ye. B. Kravtsov (Avtomobil'nye pomy'shennost', 1967,
 No. 1) was used to measure dynamic radius under braking conditions, nearly free
 movement, and controlled movement. Sixteen circumferential points were measured
 with results plotted on an oscillogram. Rolling radius and dynamic radius were com-
 pared periodically for certain test parameters. The measurements are summarized, and
 the variations caused by the hardness of the road surface are noted. Orig. art.
 has 7 equations and 2 figures.

ASSOCIATION: M. P. Ibrani Baumanns, NAMI

SUBMITTED: 00

ENCL: 00

SVR CODE: 00, 1

NE REF SOV: 00

OTHER: 000

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TITLE: Peculiarities of pneumatic roller rolling along a hard road and deformable soils

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TOPIC TAGS: Transportation, dynamic tire radius, road surface material, rolling radius, I-220 roller, I-245 roller, Ya-194 roller

ABSTRACT: The results of a series of investigations of the mechanics of a pneumatic roller in contact with surfaces of various descriptions are presented. The rollers used were of types I-220, I-245, and Ya-194. The first series of tests was for measuring the radial deformation of the rollers under several loadings and for separate values of pneumatic pressure. Account is made of stiffness of the rubber material in comparison with that of certain production tires. A constant velocity of travel was allowed for tests of variation of rolling radius with load and internal pressure; the results were plotted and compared for the different roller types. The

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MAKAROV, S., trener moskovskoy sbornoy komandy po podvodnomu plavaniyu

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