MATVEYEVA, N.A.

Change in the phagocytic activity of the leucocytes of peripheral blood in children under the influence of a tonsillectomy. Trudy mol. nauch. sotr. MONIKI no.1:77-81 '59
(MIRA 16:11)

1. Iz pediatricheskoy kliniki (zav. prof. M.I.Olevskiy) Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo instituta imeni Vladimirskogo.

MATVEYEVA, N. A. Cand Med Sci -- "Immediate and remote results of tonsillectomy in children." Mos, 1960 (2nd Mos State Med Inst im N. I. Pirogov). (KL, 1-61, 209)

MARCHENKO, V.I., kand.med.nauk; VORONKOVA, O.I., doktor med.nauk;
PINEGINA, N.L., kand.med.nauk; MATVEYEVA, N.A.

On the role of adenoviruses in chronic tonsillitis. Vest.otorin.
22 no.2:13-19 Mr-Ap '60. (MIRA 13:12)

1. Iz eksperimental'nogo otdela (zav. - doktor med.nauk O.I.
Voronkova), Laringologicheskoy kliniki (zav. - prof.I.Ya.
Sendul'skiy) i detskoy kliniki (zav. - prof.M.I.Olevskiy)
Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo
instituta imeni M.F.Vladimirskogo.
(TONSILLITIS virol.)

MARCHENKO, V.I., kand.med.nauk; PINEGINA, N.L., kand.med.nauk;
MATVEYEVA, N.A.; USHAKOVA, S.P.

Relationship between adenoviruses and rheumatism. Terap.arkh. no.6:72-75 '61. (MIRA 15:1)

1. Iz nauchno-eksperimental'nogo otdela (zav. - doktor med.nauk O.I. Voronkova), otorinolaringologicheskoy kliniki (zav. - prof. I.Ya. Sendul'skiy), detskoy kliniki (zav. - prof. M.I. Olevskiy) Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo instituta imeni M.F. Vladimirskogo.

(ADENOVIRUS INFECTIONS) (RHEUMATISM)

MARCHENKO, V.I.; PINEGINA, N.L.; MATVEYEVA, N.A.

Incidence of discovery of antibodies to adenoviruses in healthy subjects and those with different diseases based on complement fixation data. Vop.virus. 7 no.3:357-360 My-Je '61. (MIRA 14:7)

1. Nauchno-eksperimental'nyy otdel, pediatricheskaya i otolaringologicheskaya kliniki Moskovskogo oblastnogo klinicheskogo instituta imeni M.F.Vladimirskogo.

(ADENOVIRUS INFECTIONS) (COMPLEMENT FIXATION)

MARCHENKO, V.I., kand.med.nauk; VORONKOVA, O.I., doktor med.nauk;
PINEGINA, N.L., kand.med.nauk; MATVEYEVA, N.A.

Problem of chronic adenovirus infection in chronic tonsillitis.
Vest.otorin. 23 no.1:54-57 Ja-Fe '61. (MIRA 14:2)

1. Iz nauchno-eksperimental'nogo otdela (zav. - doktor med.nauk O.I. Voronkova), Moskovskoy nauchnoy otorinolaringologicheskoy kliniki (zav. - prof. I.Ya. Sendul'skiy), pediatricheskoy kliniki (zav. - prof. M.I. Olevskiy), Oblastnogo nauchno-issledovatel'skogo klinicheskogo instituta imeni M.F. Vladimirskogo, Moskva.

(TONSILS—DISEASES) (ADENOVIRUS INFECTIONS)

MARCHENKO, V.I.; PINEGINA, N.L.; MATVEYEVA, N.A.; USHAKOVA, S.P.

Autoimmune reaction against antigens from tonsils in chronic tonsillitis. Zhur.mikrobiol. epid. i immun. 32 no.4:50-53 Ap '61. (MIRA 14:6)

1. Iz Moskovskogo oblastnogo nauchno-issleodvatel'skogo klinicheskogo instituta imeni Vladimirskogo.
(TONSILS—DISEASES) (ANTIGENS AND ANTIBODIES)

MATVEYEVA, N.A.

Immediate and remote results of tonsillectomy in children. Pediatriia 39 no.2:55-60 F '61. (MIRA 14:2)

1. Iz pediatricheskoy kliniki (zav. - prof. M.I. Olevskiy) i otorinolaringologicheskoy kliniki (zav. - zasluzhenny deyatel' nauki prof. I.Ya. Sendul'skiy) Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo instituta imeni M.F. Vladimirskogo (dir. - kand.med.nauk P.M. Leonenko).
(TONSILS—SURGERY)

MATVEYEVA, N.A. (Kazan', ul. Shmidta, 37, kv. 40)

Structure of the receptor apparatus of the iris. Arkh. anat. gist. i embr. 41 no.10:38-40 O '61. (MIRA 14:12)

1. Kafedra gistologii (zav. - zasl. deyatel' nauki prof. A.N.Mislavskiy [deceased]) Kazanskogo gosudarstvennogo meditsinskogo instituta.
(IRIS (EYE)__INNERVATION)

MARCHENKO, V.I.; PINEGINA, N.L.; MATVEYEVA, N.A.

Virological and microbiological parallels in chronic tonsillitis in children. Vop.virus 7 no.4:78-83 Jl-Ag '62. (MIRA 15:8)

1. Moskovskiy oblastnoy nauchno-issledovatel'skiy klinicheskiy institut imeni M.F.Vladimirskogo.
(TONSILS—DISEASES) (ANTISTREPTOLYSINS) (ADENOVIRUS INFECTIONS)

MATVEYEVA, N.A.

Changes in the nervous elements of the retina in glaucoma in man. Nauch. trudy Kaz. gos. med. inst. 14:227-228 '64.
(MIRA 18:9)

1. Kafedra gistologii (zav. - prof. G.I.Zabusov) Kazanskogo meditsinskogo instituta.

MATVEYEVA, N.A. (Kazan', ul. Shmidta, 37, kv.30)

Pathomorphology of the nerve elements of the human retina in glaucoma. Arkh. anat., gist. i embr. 47 no.12:50-57 . '64.
(MIRA 18:4)

1. Kafedra gistologii (zav. - prof. G.I.Zabusov) Kazanskogo gosudarstvennogo meditsinskogo instituta.

32-24-6-23/44

AUTHOR: Matveyeva, N.A.

TITLE: Increasing the Sensitivity of the Spectral Analysis of Gases by Enrichment in the Discharge of a Direct Current (Povysheniye chuvstvitel'nosti spektral'nogo analiza gasov putem obogashcheniya v razryade postoyannogo toka)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 6, pp 746-748 (USSR)

ABSTRACT: This work was carried out under the supervision of S.E. Frish. The highest degree of sensitivity is attained in high-frequency discharges, on which occasion a further increase of sensitivity can be attained by previous enrichment of the gas mixture. It was found that within range of a cathode discharge the concentration of the gas with the lower ionization potential is increased, so that this phenomenon may be utilised for the purpose of gas enrichment, the stage of enrichment increasing with the voltage of the discharge current. This method can, however, be employed only in the case of gases with a lower ionization potential; in the present instance it was employed for the enrichment of an argon-helium mixture having a content of 10^{-4} - 10^{-5}% argon. From the working method described it may e.g., be seen that a spectrograph

Card 1/2

Increasing the Sensitivity of the Spectral Analysis of Gases by Enrichment in the Discharge of a Direct Current

32-24-6-23/44

produced by NIFI LGU was used together with a discharge tube which is described in form of a schematical drawing. Two calibration diagrams are given, one without enrichment, and one with enrichment of the gas mixture. The average quadratic error in the analysis is given as ± 25%; it may be seen by comparing calibration curves that argon was enriched to five times the previous amount. This method can also be employed for the purification of gas and the separation of isotopes. There are 3 figures and 5 references, 2 of which are Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova (Leningrad State University imeni A.A.Zhdanov)

1. Gases--Spectra 2. Gases--Test results 3. High frequency discharges

Card 2/2

24(3) SOV/20-122-3-14/57

AUTHORS: Frish, S. E., Corresponding Member, Academy of Sciences, USSR, Matveyeva, N. A.

TITLE: The Investigation of the Mechanism of the Separation of Inert Gases in a Discharge of Constant Amperage (Issledovaniye mekhanizma razdeleniya inertnykh gazov v razryade postoyannogo toka)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 3, pp 375-377 (USSR)

ABSTRACT: The passing of a constant electric current through a mixture of gases causes their separation. There are 2 hypotheses concerning the mechanism of this separation: 1) The separation is caused by the transfer motion of the positive ions towards the cathode. 2) The separation is caused by a transfer motion of neutral atoms (which appear under the influence of electron collisions) towards the anode. The existence of a transfer motion of the ions in the separation of the gases is proved, but the experimental material available is not sufficient for the total explanation of the mechanism of the separation of gases by an electric discharge. The authors, therefore, systematic-

Card 1/4

SOV/20-122-3-14/57

The Investigation of the Mechanism of the Separation of Inert Gases in a Discharge of Constant Amperage

ly investigated the separation of gases by a discharge in a mixture of inert gases. The discharge tube used for these experiments is discussed in short. After the beginning of the discharge, the concentration of the components varies rapidly and reaches a steady value. The time necessary for reaching the equilibrium increases linearly with the pressure of the mixture, and it slightly depends on the amperage and on the composition of the mixture. The time necessary for the separation increases with the length of the discharge tube. Also the time necessary for the intermixing of the separated mixture after the beginning of the discharge was determined. The following dependences were found by the authors: 1) The degree of the separation increases linearly if the tube becomes longer. 2) In the region of low pressures (0,5 - 1,5 mm), an increase of pressure noticeably intensifies the separation. 3) An increase of the amperage of the discharge current intensifies the degree of separation. Initially, this increase is a linear one, but later it becomes slower. 4) If the concentration of the easily ionizable mixture increases, the degree of the separation decreases, and its pressure dependence

Card 2/4

SOV/20-122-3-14/57

The Investigation of the Mechanism of the Separation of Inert Gases in a Discharge of Constant Amperage

becomes less distinct. 5) The dependence of the separation on the ionization potential of the mixture components cannot be found in a pure form. The results given above may be explained (qualitatively) by the assumption that the separation of the gases is caused mainly by the transfer motion of the ions. The higher the difference of the ionization potentials of the mixture components, the higher the difference of the concentration of their ions and the more distinct will be the separation effect. For a more detailed explanation of the observed laws, the dependence of the velocity of the transfer motion of the ions on the discharge conditions and the role of the diffusion have, at the same time, to be taken into account. There are 2 figures and 4 references, 2 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gosudarstvennogo universiteta im. A. A. Zhdanova (Scientific Physics Research Institute of Leningrad State University imeni A. A. Zhdanov)

Card 3/4

24(3), 5(3) SOV/54-59-1-2/25

AUTHOR: Matveyeva, N. A.

TITLE: Separation of Mixtures of Noble Gases in a Direct-current Discharge (Razdeleniye smesey inertnykh gazov v razryade postoyannogo toka)

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1959, Nr 1, pp 11-25 (USSR)

ABSTRACT: For the purpose of investigating the separation of gas mixtures in direct-current discharge tubes gas samples were taken out of the range surrounding the electrodes after establishing a dynamic equilibrium of the individual discharge processes. The gas samples were then subjected to spectroscopic analysis. The time required for the establishment of a steady state in the discharge tube is dependent on the pressure of the gas mixture in the tube and on its length. In addition, the investigation covered: 1) The dependence of the separation degree on the pressure of the gas mixture to be measured. In this connection it was shown that the dependence of the voltage gradient along the tube on the pressure of the gas mixture is analogous to the dependence of the separation degree on the pressure of the gas mixture (Figs 8,9).

Card 1/3

2)The influence exercised by the tube length on the degree of separation (Tables 1, 2). Therefrom it results that the difference in concentration of part of the mixture such as the readily ionized portion increases at both ends of the tube as soon as it is lengthened. 3) The dependence of the separation degree on the intensity of the discharge current. With increasing amperage also the separation degree increases as observed by many authors. 4) The influence exercised by concentration of the readily ionized component on the separation degree. Once again a similar effect on the separation degree and the voltage gradient along the tube was found. Further, the author investigated the separation of a gas mixture in which the impurity has a higher ion potential than the basic substance as well as the influence exercised by the ion potential and the atomic weight of the mixture components on its separation. The following conclusion was drawn from the results obtained: The separation of gas mixtures in a direct-current discharge may be employed to the purification of gases from impurities with an ion potential lower than that of the basic substance. The enrichment of the mixture with readily ionized impurities in front of the cathode in the

SOV/54-59-1-2/25

Separation of Mixtures of Noble Gases in a Direct-current Discharge

discharge tube may be used for increasing the sensitivity of the analysis of gas mixtures. The analysis of an argon-helium mixture is given as an example, in which a calibration curve was plotted within the range of argon concentrations of from 2.10^{-5} to 10^{-4}% by way of argon enrichment. The author thanks Professor S. E. Frish, Corresponding Member, AS USSR, for having both proposed and supervised the work. There are 22 figures, 3 tables, and 16 references, 7 of which are Soviet.

SUBMITTED: June 10, 1958

Card 3/3

MATVEYEVA, N.A.

66702

24.2/20 SOV/109-4-8-22/35

AUTHORS: Granovskiy, V.L., Luk'yanov, S.Yu., Spivak, G.V. and Siretenko, I.G.

TITLE: Report on the Second All-Union Conference on Gas Electronics

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1339 - 1358 (USSR)

ABSTRACT: The conference was organised by the Ac.Sc.USSR, the Ministry of Higher Education and Moscow State University.
A.A. Timofeyev - "Measurement of the Gas Density During the Dynamic Operation of a Discharge" (see p 1306 of the journal).A.V. Nedospasov - The Nature of a Striated Positive Column".
V.I. Parel' and Yu.M. Kagan - "The Theory of Probes for Arbitrary Pressures".
Yu.M. Kagan et al. - "The Positive Column of a Discharge in a Diffusion Regime".
M.V. Konyukov - "Influence of the Processes of the Annihilation of the Negative Ions on Their Concentration in the Column".
M.D. Gabovich and L.L. Pasechnik - "Anomalous Scattering, Excitation of Plasma Oscillations and Plasma Resonance"
Yu.L. Klimontovich - "Energy Lost by Charged Particles for the Excitation of the Oscillations in Plasma (the Langmuir paradox)" and "The Theory of Non-linear Plasma Oscillations".
Ye.G. Martinkov and I.G. Nekrashevich - "Dependence of the Temperature in the Near-electrode Region of a Pulse Discharge on the Material of the Electrodes".
N.A. Neratina and B.N. Klyarfel'd - "Formation of Light Spots on the Anode of a Gas Discharge (see p 1301 of the journal).
N.A. Matveyeva -"Distribution of Binary Mixtures of Inert Gases in a G.D. Discharge".
V.G. Stepanov and V.F. Zakharchenko - "Some Phenomena in Rarified Plasma".
V.G. Stepanov and V.S. Rozel' - "The Possibility of Obtaining Highly Concentrated Plasmas".
G.V. Smirnitskaya and E.M. Reykhrudel' - "Some Characteristics of the Discharge in an Ion Pump and in a Magnetic Ionisation Vacuum Gauge".
Ye.T. Kucharenko and O.K. Nazarenko - "Properties of a Discharge with Electron Oscillations in a Magnetic Field" (see p 1253 of the journal).
The paper by L.M. Biberman and B.A. Veklenko considered the approximate methods for determining the concentration of atoms at the radiation levels.
I.I. Sobel'man and L.A. Vaynshteyn read a paper on "A Non-stationary Theory of the Stark Broadening of the Spectral Lines in Plasma".
N.A. Mazing and S.L. Mandel'shtam - "The Broadening and the Shift of Spectral Lines in a Gas-discharge Plasma".
R. Lunt (England) - "The Kinetics of Electron Collisions Leading to the Excitation of the Molecular Hydrogen in a Hydrogen Discharge".
V.N. Kolesnikov et al. - "Some Properties of the Arc Discharge in an Atmosphere of Inert Gases".
A.A. Mak and M.P. Vanyukov - "Production of High Temperatures By Means of Spark Discharges".

Card 1/7

MATVEYEVA, N.A.

Separation of mixtures of inert gases in a d.c. discharge.
Vest.LGU 14 no.4:11-25 '59. (MIRA 12:5)
(Electric discharges through gases)
(Gases, Rare)

SOV/48-23-8-19/25

21(5)

AUTHOR: Matveyeva, N. A.

TITLE: Separation of Binary Mixtures of Rare Gases in Direct-current Discharge

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 8, pp 1021-1025 (USSR)

ABSTRACT: In the introduction the results hitherto obtained in other investigations (Refs 1-8) are discussed. It is pointed out that these investigations are carried out not to explain the properties of electric discharges in gas mixtures and their applicability to the separation of isotopes. The experiments described by the present paper were performed by means of a discharge tube shown in figure 1. Binary mixtures of helium, neon, and argon were investigated. It was found that after the beginning of the discharge a change in the properties of the mixture occurs along the discharge column, attaining a steady state after some time. This state of equilibrium is discussed, and the effect of pressure and tube length investigated. An enlargement of the tube length increases the time of separation, while pressure rise causes a linear increase of time to reach

Card 1/3

SOV/48-23-8-19/25

Separation of Binary Mixtures of Rare Gases in Direct-current Discharge

the state of equilibrium. The measurement of the degree of separation is discussed, and the results are shown in the diagrams of figures 3 to 5. The dependence of the degree of separation on pressure, amperage, and concentration of slightly ionized gases is then discussed. Further, the dependence of separation on the ionization potential of the components and on their atomic weight is investigated. Because of the existence of mutual influence between the components of the gas mixture, it is difficult to develop clearly this dependence. It is described, however, by the diagram of figure 6 for moderate concentrations of easily ionizable impurities. Finally, it is pointed out that the separation depends on the ionic mobility. The increase of the degree of separation by increase of the difference of the ionization potential of the components is investigated. The change of pressure of the mixture and of the composition of the mixture causes a variation of the separation degree, which originates from an ionic-velocity change. A model for separation is developed approximately, and the knowledge of ionic velocity, of the relative degree of ionization of the components as well as the dependence of these quantities

Card 2/3

SOV/48-23-8-19/25

Separation of Binary Mixtures of Rare Gases in Direct-current Discharge

on the discharge conditions and on the concentration of the mixture components is said to be important for the development of a theory of separation. There are 7 figures and 8 references, 4 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos. universiteta (Scientific Research Institute of Physics of Leningrad State University)

Card 3/3

MATVEYEVA, N. A., Cand Phys-Math Sci -- (diss) "Separation of binary mixtures of inert gases in a discharge of direct current." Leningrad, 1960. 8 pp; (Leningrad Order of Lenin State Univ im A. A. Zhdanov); 200 copies; price not given; (KL, 25-60, 126)

TSVETKOV, A.I.; YERSHOVA, Z.P.; MATVEYEVA, N.A.

Synthesis of chromium silicate similar to olivine. Izv. An SSSR.Ser. geol. 29 no. 2:3-15 F '64. (MIRA 17:5)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR, Moskva.

TSVETKOV, A.I.; MYASNIKOV, V.S.; SHCHEPOCHKINA, N.I.; MATVEYEVA, N.A.

Nature of lamellar formations in titano magnetite. Izv. AN SSSR. Ser. geol. 30 no.2:16-32 F '65. (MIRA 18:4)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR, Moskva.

KLENKOVA, N.I.; KULAKOVA, O.M.; MATVEYEVA, N.A.; VOLKOVA, L.A.;
TSIMARA, N.D.

Effect of methylamine in various media on the structure and reactivity of cotton fibers. Zhur. prikl. khim. 38 no.5:1077-1084 My '65. (MIRA 18:11)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.

LIVCHAK, I.F. Prinimali uchastiye: LOBACHEV, P.F.; SLADKOV, S.P.; GRUDZINSKIY, M.M.; POLIKARPOV, V.F.; IZYANSKIY, A.Z.; KONSTANTINOVA, V.G.; [redacted]; STRASHNYKH, V.P., red.izd-va; MOCHALINA, Z.S., tekhn. red.

[Instructions for using improved sanitary equipment in large-panel buildings] Ukazaniia po primeneniiu usovershenstvovannykh sanitarno-tekhnicheskikh ustroistv v krupnoelementnykh domakh. Moskva, Gosstroiizdat, 1963. 85 p. (MIRA 16:8)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut sanitarnoy tekhniki.
(Sanitary engineering--Equipment and supplies)

MATVEYEVA, N.A., inzh. sluzhby puti (Riga)

Reinforced concrete slabs on crossings. Put' i put. khoz. 9 no.1:12-13 '65. (MIRA 18:2)

KLENKOVA, N.I.; KULAKOVA, O.M.; MATVEYEVA, N.A.; VOLKOVA, L.A.

Action of the primary aliphatic amines on the structure and reactivity of cotton cellulose fibers. Zhur. prikl. khim. 38 no.4:919-925 Ap '65. (MIRA 18:6)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.

KLENKOVA, N.I.; MATVEYEVA, N.A.; KULAKOVA, O.M.

Changes in the structure and properties of methylamine-activated cellulose fibers during their storage. Zhur.prikl.khim. 38 no.6:1360-1367 Je '65. (MIRA 18:10)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.

GTRSPL Vol. 5-No. 1 Jan. 1952

Korshak, V.V. and Matveeva, N.G. (D.I. Mendeleev Moscow Institute of Chemical Engineering), Steric hinderance in polymerization of 2,6-dimethyl-4-tertiary butylstyrole, 1145-8

Akademiya Nauk, S.S.S R., Doklady Vol. 78, No. 6

1. KORSHAK, V.V. GRIBOVA, I.A. MATVEYEVA, N.G.
2. USSR (600)
3. High Molecular Weight Compounds
4. Progress in the synthesis of high molecular weight compounds.
   Usp. khim. No. 11 - 1952.

9. Monthly List of Russian Acessions, Library of Congress, February, 1953. Unclassified.

MATVEYEVA, N. G.

USSR/Chemistry - Plastics Jul 52

"From the Field of High-Molecular Compounds. XLVI. Concerning the Polymerization of 2,6 Dimethyl-4 Tertiary-Butylstyrene)," V. V. Korshak, N. G. Matveyeva, Moscow Chem-Tech Inst imeni D. I. Mendeleyev

"Zhur Obshch Khim" Vol 22, No 7, pp 1173-1176

2,6-Dimethyl-4-tertiary-butylstyrene was prepd and its polymerization capacity investigated. It was not polymerized by heating, under the effect of benzoyl peroxide, or by direct sunlight,

229T40

but was easily polymerized in the presence of aluminum chloride or boron fluoride. The effect of substituents in the ortho position on the polymerization capacity of disubstituted styrene was examd, and the explanation for this capacity based on ionic polymerization.

229T40

MATVEYEVA, N. G.

4

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Chem

Chemical Abst.
Vol. 48 No. 5
Mar. 10, 1954
Organic Chemistry

Compounds of high molecular weight. XLVI. The polymerization of 2,6-dimethyl-4-*tert*-butylstyrene. V. V. Korshak and N. G. Matveeva (D. I. Mendeleev Inst. Chem. Technol., Moscow). *J. Gen. Chem. U.S.S.R.* 22, 1221-3 (1952)(Engl. translation). **XLVII. Mechanism of chain growth and causes of its stoppage in the process of reaction of polyesterification.** V. V. Korshak and S. V. Vinogradova. *Ibid.* 1225-30.—See *C.A.* 47, 6883b*e*. H. L. H.

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7-28-54

MATVEYEVA, N. G.

PA 227T11

USSR/Chemistry - Plastics, Polymerization 1 Aug 52

"The Effect of Stereochemical Factors on the Capacity of Substituted Ethylenes for Polymerization," V.V. Korshak, N.G. Matveyeva, Inst of Org Chem, Acad Sci USSR.

"Dok Ak Nauk SSSR" Vol 85, No 4, pp 797-800

Four groups of compds were tested in regard to their polymerization capacity: (1) ethylene tetrahalides; (2) unsym disubstituted ethylenes with simple substituents; (3) ortho-substituted styrenes; (4) ortho-disubstituted alpha-methylstyrenes. The investigation established that stereochem factors play an essential role in detg the ability of many substituted ethylenes to polymerize. They have an especial significance in tetrasubstituted ethylenes, and it was also shown that they have an essential meaning in di- and even in some monosubstituted ethylenes. The results of the work also proved that the capacity of the substituted ethylene for polymerization is affected not only by the influence of the substituent on the activity and polarity of the double bond, but also by its purely spatial influence inhibiting and even preventing polymerization. Presented by Acad A.N. Nesmeyanov 5 Jun 52.

Abst. AVAILABLE - D 50054

227T11

MATVEYEVA, N. G.

High-molecular compounds. LVI. Influence of stereochemical factors on the ability of halosubstituted ethylenes to polymerize. V. V. Korshak and N. G. Matveeva. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1953, 344-50; cf. *C.A.* 48, 3912g.—The no. of halogen atoms and their nature are the 2 factors which affect polymerization tendencies of haloethylenes. The limiting group radius for tetrasubstituted ethylenes is 1.4-1.7 A. Unsym. dihalo derivs. can polymerize regardless of the nature of the halogen. Tetrabromo-, -chloro- or -iodoethylenes do not polymerize. Addn. of 109 g. $(CH_2Br)_2$ to 20 g. NaOH in 100 ml. MeOH at 55-85° gave CH_2:CHBr which, passed into 38 ml. Br in 150 ml. CCl_4 and the resulting soln. washed with $Na_2S_2O_3$, gave 48.6% tribromoethane, b. 181-3°. This (133 g.), added gradually to 20 g. NaOH and 0.5 g. hydroquinone in 100 ml. MeOH at 50-60°, yielded 33% CH_2:CBr_2, b. 87-8°, which polymerized readily with or without added Bz_2O_2; the polymer is insol. in the usual solvents and decomp. 140-50°. Addn. of CH_2:CCl_2 simultaneously with dry HCl to 10% $AlCl_3$ in $PhNO_2$ gave 44.8% $MeCCl_3$, b. 72-4°, which (15 g.) was added with cooling to 3 g. Al and 38.5 g. iodine in 100 ml. CS_2; treatment with aq. HCl gave 6.1% polyvinylidene iodide as a black powder, insol. and decompg. on heating. Addn. of 4.6 g. Al to 20 g. C_2Cl_6 and 80 g. Br gave 76.95% C_2Br_6, decomp. 200-10° (from EtOH), which, heated to 180-200°, yielded 74.7% C_2Br_4, m. 50-1° (from EtOH). To 50 g. Ca carbide powder and 200 g. iodine were added 100 ml. C_6H_6 and, under a N stream, 120 ml. H_2O below 45°; after 1 hr. of stirring the org. layer gave 18% C_2I_4, decomp. 192-3° [from $(ClCH_2)_2$].

G. M. Kosolapoff

MATVEYEVA, N. G.

② 4

High-molecular compounds. LVII. Relation between the structure of some unsymmetrical diarylethylenes and their tendency to polymerisation. V. V. Korshak and N. G. Matveeva (*Izvestia*, 1959, No. 3, 542—546).—A polymeric diphenylene-ethylene (I) is synthesised, by heating 9-methylfluorenol with $KHSO_4$ and a little quinol at 160—170°; the product melts at 155—165° and has a mol. wt. of 4880 from the η of its benzene solution. Stereochemical considerations explain why I polymerises, whereas 1 : 1-diphenylethylene only dimerises.

R. C. MURRAY.

MATVEYEVA, N. G.

4

②

High-molecular compounds. LVIII. Steric hindrance in the polymerisation of nuclear-substituted styrenes. V. V. Korshak and N. G. Matveeva (*Izvestia*, 1953, No. 3, 547—555).—Molecular models are reproduced to explain why there is no steric hindrance to the polymerisation of 2 : 6-dimethoxy- (I) and 2 : 4 : 5-tri*iso*propyl-styrene (II), and why there is to that of 2 : 6-dimethyl-4-*tert*.-butyl- and 2 : 4 : 6-tri(trifluoromethyl)-styrene. II is synthesised by converting 1 : 2 : 4-tri*iso*propylbenzene to 2 : 4 : 5-tri*iso*propylphenylmethylcarbinol, m.p. 93—94°, b.p. 126—129°/3 mm., and then dehydration; it has b.p. 165—166°/75 mm., d_4^{20} 0·9018, n_D^{20} 1·5075. The product polymerised for 4 hr. in a sealed tube at 100° has mol. wt. 10,800, and 22,700 after 2 months at room temp. I was prepared in polymeric form from 2 : 6-dimethoxyacetophenone by boiling for 24 hr. with Al(OPr^i)$_3$ in the presence of abs. Pr^{i}OH, and has m.p. 78—82°, mol. wt. 3080; it cannot be depolymerised.

L. C. MURRAY.

1. Inst Org Chem, AS USSR

KORSHAK, V.V.; MATVEYEVA, N.G.

From the field of high molecular weight compounds. Report 59. Stereochemistry of α-methylstyrenes in connection with their capacity to polymerization. Izv.AN SSSR. Otd.khim.nauk no.4:751-756 Jl-Ag '53. (MLRA 6:8)

1. Institut organicheskoy khimii Akademii nauk SSSR.
(Polymers and polymerization) (Styrenes)

KORSHAK, V.V.; MATVEYEVA, N.G.

From the field of high molecular weight compounds. Report 60. Role of stereochemical factors in the polymerization process. Izv.AN SSSR. Otd.khim.nauk.no.6:1116-1120 N-D '53. (MLRA 6:12)

1. Institut organicheskoy khimii Akademii nauk SSSR.
(Polymers and polymerization)

MATVEYEVA, N. G.

11

4 M.A. YOUTZ
3 copies

High molecular weight compounds. LXXIX. Products of polycondensation of dialdehydes and diketones with diamines and glycols. V. V. Korshak and S. V. Vinogradova. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1955, 841-4 (Engl. translation). LXXX. A case of migrational copolymerization. *Ibid.* 846-7. LXXXI. Mixed polyamides containing glutaric and pimelic acids. V. V. Korshak and T. M. Frunze. *Ibid.* 849-51. LXXXII. 2,4,5-Triisopropyl-α-methylstyrene. V. V. Korshak and N. G. Matveeva. *Ibid.* 855-9.—See *C.A.* 50, 9326j.
B. M. R.

Chem

BM

Matveyeva, N.G.

KORSHAK, V.V.; MATVEYEVA, N.G.

[redacted]

High molecular weight compounds. Izv.AN SSSR.Otd.khim.nauk no.5:
942-944 S-O '55. (MLRA 9:1)

1.Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.
(Styrene)

Category: USSR/Chemistry of High-Molecular Substances F.

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30910

Author : Korshak V. V., Petrov A. D., Matveyeva N. G., Mironov V.F., Nikitin G. I., Sadykh-Zade S. I.

Inst : not given

Title : Concerning High-Molecular Compounds. XCVII. Polymerization and Copolymerization of Some Silicon-Olefins

Orig Pub: Zh. obshch. khimii, 1956, 26, No 4, 1209-1212

Abstract: Study of the tendency of tri-n-butyl-allyl silane (I), BP 135°/
12 mm, $n^{20}D$ 1.4534, d_4^{20} 0.8031, methyl-diallyl silane (II)
BP 122.5°/745 mm, $n^{20}D$ 1.4430, d_4^{20} 0.7360, dimethyl-dimethallyl
silane (III) BP 178-185°/758 mm, $n^{20}D$ 1.4515, d_4^{20} 0.8012, te-
tramethallyl silane (IV) BP 269.5°/745 mm, $n^{20}D$ 1.4950, d_4^{20}
0.8609, dimethyl-phenyl-vinyl-ethinyl silane (V) BP 83-84°/65 mm,
$n^{20}D$ 1.5391, d_4^{20} 0.0229, to polymerize and copolymerize with
methyl methacrylate (VI) and styrene (VII). I-IV do not form
polymers either on heating (100° and 160°, 50 hours) with or

Card : 1/2

-18-

BERLIN, A.A.; MATVEYEVA, N.G.

Polymers with conjugated bonds in the macromolecular chains. Part 3: Polyaminoquinones. Vysokom.soed. 1 no.11:1643-1646 N '59. (MIRA 13:5)

1. Institut khimicheskoy fiziki AN SSSR.
(Quinones) (Polymers)

BLYUMENFEL'D, L.A.; BERLIN, A.A.; MATVEYEVA, N.G.; KALMANSON, A.E.

Polymers with conjugated bonds in the macromolecular chains. Part 4: Some characteristics of polymeric compounds having different atoms in the chain of conjugation. Vysokom.soed. 1 no.11:1647-1651 N '59. (MIRA 13:5)

1. Laboratoriya anizotropnykh struktur AN SSSR.
(Polymers)

5.3700

77099
SOV/62-59-12-43/43

AUTHORS: Berlin, A. A., Matveyeva, N. G., Sherle, A. I.

TITLE: Letters to the Editor

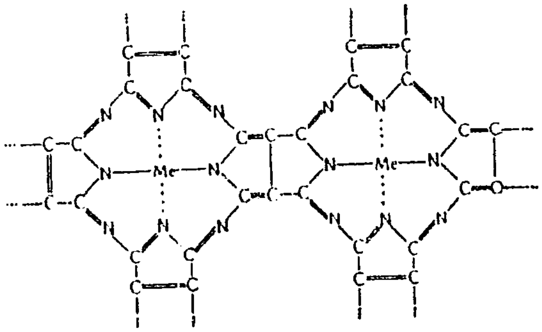
PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk 1959, Nr 12, p 2261 (USSR)

ABSTRACT: Reaction of 1 mole of copper salt of acetylacetone with 2 moles of tetracyanoethylene under vacuum, at 160-300°, proceeded with formation of a complex polymer and separation of acetylacetone. The polymer (infusible black substance) was insoluble in organic solvents, in bases and diluted acids. IR absorption spectrum showed no intense absorption bands in the 700-3,000 cm^{-1} range, with the exception of a 2,224 cm^{-1} band corresponding to the CN-group. The following structure of the chelate was suggested:

Card 1/3

Letters to the Editor

77099
SOV/62-59-12-43/43



Elemental analysis showed the presence of acetylacetonate groups. Electron paramagnetic resonance spectrum showed broad intense lines with 500-700 oersted separation between peaks. An eqiomolar mixture of copper salt of acetylacetone, tetracyanoethylene, and fluoronitrile gave a copolymeric chelate with a presumably bandlike structure.

Card 2/3

Letters to the Editor

77099
SOV/62-59-12-43/43

ASSOCIATION: Anisotropic Structures Laboratory, Academy of Sciences, USSR (Laboratoriya anizotropicheskikh struktur Akademii nauk SSSR)

SUBMITTED: June 5, 1959

Card 3/3

5.3610,5.3832

77098
SOV/62-59-12-42/43

AUTHORS: Berlin, A. A., Matveyeva, N. G.

TITLE: Letters to the Editor

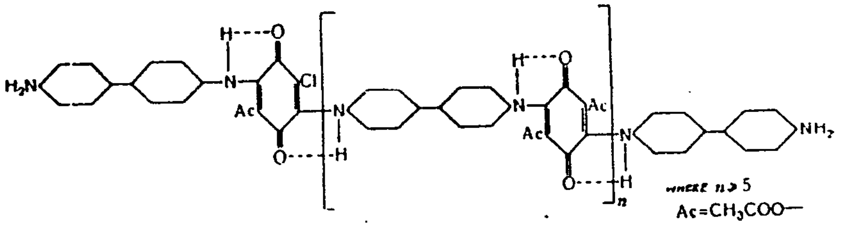
PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 12, p 2260 (USSR)

ABSTRACT: Polycondensation of equimolar amounts of chloranil and benzidine in 2 M sodium acetate in methanol solution gave polymers with 2 chlorine atoms in the basic unit. These polymers were soluble in sulfuric and formic acid, and soluble to a large extent in dimethylformamide. Equimolar amounts of chloranil and benzidine in dimethylformamide in presence of a 2-fold excess of sodium acetate gave polymers in which chlorine atoms were replaced by acetate radicals. Such polymers were soluble in sulfuric acid and insoluble in dimethylformamide. Their suggested structure is shown in (1).

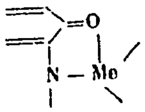
Card 1/3

Letters to the Editor

77098
SOV/62-59-12-42/43



These polyaminoquinones showed high magnetic susceptibility ($K = 1.28 \cdot 10^{6}$). The distance between the paramagnetic resonance maxima was 500-600 oersted. Polyaminoquinones formed infusible and insoluble complexes with copper and other metals, with 8-15% metal content, of a suggested structure:



Letters to the Editor

77098
SOV/62-59-12-42/43

ASSOCIATION: Anisotropic Structures Laboratory, Academy of Sciences, USSR (Laboratoriya anizotropnykh struktur Akademii nauk SSSR)

SUBMITTED: June 5, 1959

Card 3/3

MATVEYEVA, N.G.

5.3600
5.3831

82079 S/190/60/002/01/09/021
B004/B061

AUTHORS: Kolesnikov, G. S., Matveyeva, N. G.

TITLE: Aliphatic Polymers and Copolymers. XX. Polymerization and Copolymerization of 1-Fluoro-1,1-dichloro- and 1,1-Difluoro-1,1-dichloropropylene-2

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 1, pp. 82-84

TEXT: In their synthesis of 1-fluoro-1,1-dichloropropylene-2 (I) the authors proceed from 1-fluoro-1,1,3-trichloropropane which is obtained from 1,1,1,3-tetrachloropropane by reaction with SbF_3 in the presence of $SbCl_5$. This reaction was started at room temperature and ended at 70°C. The reaction products were distilled off in vacuo. Intensive formation of gas then occurred as a result of decomposition, so that the yield was low (5 - 15%, in some cases 30%). To produce 1,1-difluoro-1-chloropropylene-2 (II), 1,1-difluoro-1,3-dichloropropane was used initially, which was obtained from 1,1,1,3-tetrachloropropane by reaction with SbF_3

Card 1/3

Aliphatic Polymers and Copolymers. XX.
Polymerization and Copolymerization of
1-Fluoro-1,1-dichloro- and 1,1-Difluoro-1,1-
-dichloropropylene-2

S/190/60/002/01/09/021
B004/B061

82079

(in a molar ratio of 3 : 2) and distilled off at atmospheric pressure (yield: 17%). The dehydrochlorination of both fluorochloropropylenes was carried out with a 10% alkali solution between -5 and -10°C (yield of (I): 23%; of (II): 73%). Both these compounds can be polymerized at 50°C in the presence of 0.5 mole% of benzoyl peroxide. The polymer resulting from (I) has a vitrification temperature of 47°C, is easily soluble in aromatic hydrocarbons and hydrocarbon halides, but insoluble in ether, alcohol, and petroleum ether. The polymer obtained from (II) is easily soluble in most organic solvents, and was liberated from the reaction products by steam distillation. Its vitrification temperature is 25°C. At 50°C in the presence of 0.25 mole% of benzoyl peroxide, (I) and (II) form copolymerizates with methylmethacrylate and styrene. The copolymerizates with styrene have a higher vitrification temperature than homopolymers of styrene, which is explained by the occurrence of F·H bonds between the polymer chains. The authors mention a paper by M. G. Avetyan (Ref. 13). There are 1 table and 13 references: 1 Soviet and 12 US.

Card 2/3

Aliphatic Polymers and Copolymers. XX.
Polymerization and Copolymerization of
1-Fluoro-1,1-dichloro- and 1,1-Difluoro-1,1-
-dichloropropylene-2

S/190/60/002/01/09/021
B004/B061

82079

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elemental-organic Compounds of the AS USSR)

SUBMITTED: October 7, 1959

X

Card 3/3

53700(A)(C)

69009
S/074/60/029/03/001/004
B008/B006

AUTHORS: Berlin, A.A., Matveyeva, N.G.

TITLE: Polymeric Chelate Compounds

PERIODICAL: Uspekhi khimii, 1960, Vol 29, Nr 3, pp 277-297 (USSR)

ABSTRACT: The authors describe new ways of preparing polymeric materials with properties required for technical development. One of these is the synthesis of chelate compounds. Chelates are known to be resistant to acids and bases and to agents which react with free metals (Ref 1). Many chelates are extremely stable at comparatively high temperatures (400° and higher). Groups which are able to form chelate rings ought to be termed chelating groups. Provided they are suitably arranged in the molecule, electron donor groups contained in chelating groups can form chelate rings in the presence of electrophilic ions or atoms. The stability of these chelate rings is much increased if these donor groups are in conjugation to each other. Examples are given on p 278. The resistance of these chelate rings to chemical agents and heat is determined by a number of factors: the structure and chemical nature of the chelating group, the ring tension, the number of rings connected with the corresponding ion, the electron structure of the complexing ion. In most cases, chelates are highly resistant to chemical agents (Refs 2 - 12). Basing on the funda-

Card 1/3

69009

Polymeric Chelate Compounds S/074/60/029/03/001/004
B008/B006

mentals of synthetic polymer chemistry and the theory of complex compounds, the following four methods can be suggested for the preparation of polymeric chelate compounds (polychelates): 1) the polymerization of monomers containing a metal atom bound in the chelate ring: a) formation of linear or slightly branched macromolecules, b) formation of three-dimensional or highly branched macromolecules; 2) synthesis of polymers by polycondensation of substances with chemically stable chelate rings. Polymers are prepared by interaction of low molecular substances containing chelate rings and at least two reactive functional groups; 3) synthesis of polymers by interaction of polymers with either pure carbon chains or heterogeneous chains containing chelating groups with metal ions or metal atoms. This can lead to soluble (linear, branched) or insoluble (cross-linked) polymers; 4) polymer synthesis based on complex-forming low molecular substances with metal ions or metal atoms (Ref 13). Publications on the preparation of various chelate compounds are discussed (Refs 14-60)(Tables 1,2). It is evident from these examples that various types of polymers capable of forming complexes with metal ions can be prepared by proper choice of the method of synthesis. Thus, a great number of cross-linked polychelates can be prepared, which are of practical use as adsorbents for ions.

Card 2/3

Polymeric Chelate Compounds

69009

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B008/B006

The polycoordination of low molecular compounds with chelating groups seems to be particularly promising. By applying these reactions it is possible to prepare both organic and inorganic polymeric compounds (Refs 61-79). The preparation of polymeric phthalocyanines is of great theoretical and practical interest (Refs 80-81). The authors recently discovered (Ref 82) a new type of polymeric chelate compound chiefly composed of carbon, nitrogen, and metals. Furthermore, the authors obtained polymeric chelates (Ref 83) from polyaminoquinones which had been synthesized for the first time. Data available so far do not give a complete picture of the mechanism of formation nor of the physico-mechanical properties of chelate compounds. Their special structure, however, and the countless preparation methods open up unexpected possibilities of preparing substances with properties intermediate between those of metals and metalloids. The following persons are mentioned: the authors, V.A. Klyachko, S. Tanator, Ye. Kurovskiy, and A.I. Sherle. There are 2 tables and 83 references, 6 of which are Soviet.

ASSOCIATION: Laboratoriya anizotropnykh struktur AN SSSR (Laboratory of Anisotropic Structures of the AS USSR)

Card 3/3

LX

20361

(2)

15.8114 also 1164,1045 1143

S/020/61/136/005/022/032
B101/B206

AUTHORS: Berlin, A. A., Boguslavskiy, L. I., Burshteyn, R. Kh., Matveyeva, N. G., Sherle, A. I., and Shurmovskaya, N. A.

TITLE: Some electrophysical properties of polymer complexes of tetraethylene cyanide with metals

PERIODICAL: Doklady Akademii nauk SSSR, v. 136, no. 5, 1961, 1127-1129

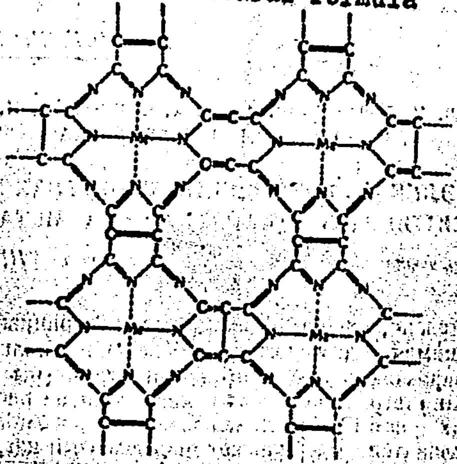
TEXT: The authors deal with the chelate compounds between tetraethylene cyanide and metals. The infusibility and insolubility of these compounds led to the proposal that coatings and plastics be manufactured from them (Ref. 3). The electrophysical properties of polymeric chelate films chemically bonded to metals, which were obtained by treatment of copper, iron, and nickel sheets with tetraethylene-cyanide vapor, were studied in this paper. The degreased and, in some cases, also electropolished or etched metal foils were exposed to tetraethylene-cyanide vapor at 10^{-5} mm Hg and 150 to 400°C. A film firmly sticking to the metal developed, the thickness of which was calculated from the specific gravity of the

Card 1/~~6~~4

20361

Some electrophysical properties ... S/020/61/136/005/022/032
B101/B206

polymer and from the weight of the film as being $5\cdot10^{-6} - 3\cdot10^{-5}$ cm. (Owing to the poor combustibility of the chelate film, microanalysis produced too low carbon values). The infrared spectra of the copper complex, taken by Yu. Sh. Moshkovskiy and N. D. Kostrova, showed the complete absence of maxima in the range 800 - 2300 cm^{-1}. A "parquet" structure of the polymer according to the structural formula



Card 2/6

Some electrophysical properties ...

20361

S/020/61/136/005/022/032
B101/B206

is concluded therefrom. The electrophysical properties of the films were checked by means of alternating current of 200 cps - 0.2 Mc/sec. The metal covered by the film was immersed in mercury so that the film formed the dielectric of a capacitor, the plates of which consisted of the metal and of mercury. Measurements were made at 10-5 mm Hg because the presence of air influenced the results. This effect needs further research. The specific conductivity σ, the film capacitance and its temperature dependence, duration of heating, and the method of metal-surface treatment were determined. The following data are given for films of iron obtained after 3 hr heating at 250°C in tetraethylene-cyanide vapor: film thickness $3\cdot10^{-6}$ cm; $\sigma = 3\cdot10^{-9}$ ohm$^{-1}\cdot$cm^{-1}; effective dielectric constant ε (at 3000 cps) = 7. After further 3 hr of heating, σ increased to $3\cdot10^{-8}$ ohm$^{-1}\cdot$cm^{-1}, and ε to 36. Increase of temperature from 250 to 450°C and heating for 10 hr produced the following values: $\sigma = 5\cdot10^{-8} - 5\cdot10^{-6}$ ohm$^{-1}\cdot$cm^{-1}, $\varepsilon = 70$. The sign of the emf indicates that the film possesses p-type conductivity. $\log \sigma = f(10^3/T)$ is represented in Fig. 2. Measurements between -40 and +220°C yielded two linear sections.

Card 3/6

Some electrophysical properties ...

20361

S/020/61/136/005/022/032
B101/B206

The first lies between -40 and +30°C and corresponds to an activation energy of from 0.07 to 0.12 ev, while the second (30 to 250°C) corresponds to an activation energy of from 0.21 to 0.28 ev. The function represented is similar to that obtained for semiconductors with impurity conductivity. R and ε as functions of the logarithm of the frequency ν between 400 cps and 0.2 Mc/sec were also measured. Results are shown in Fig. 3. It is noted that R and the film capacitance decrease with increasing voltage when a constant voltage is applied. When a direct current is conducted through an alcoholic solution of copper sulfate, metallic copper firmly adhering to the film is deposited on the polymer film formed on iron. The high ε values indicate that the polarization of conductive macromolecules could be in question. The authors are preparing a study on the complex dielectric constant at higher frequencies. There are 4 figures and 3 Soviet-bloc references.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences USSR). Institut elektrokhimii Akademii nauk SSSR (Institute of Electrochemistry, Academy of Sciences USSR)

Card 4/6

28671
S/020/61/140/002/016/023
B103/B101

15.8060

AUTHORS: Berlin, A. A., and Matveyeva, N. G.

TITLE: Synthesis and some properties of polytetracyano ethylene

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 2, 1961, 368-370

X

TEXT: Contrary to published data according to which tetra-substituted ethylene derivatives do not polymerize owing to a large steric hindrance, the authors found that tetracyano ethylene (TCE) can be polymerized at 200°C under the action of certain organic initiators. These open the C≡N bond, and convert it to $>C=NH$ which is polymerizable. Ethanol proved the strongest initiator (polymer yield, 43.5%), followed by aniline (27%), phenol (25.3%), urea (17.5%), triethylamine (13%), pyridine (8.7%), and $(NH_4)HCO_3$ (1.0%). Without an initiator but under otherwise equal conditions, TCE is polymerizable only with a yield of ~2% under the same conditions. In this case, traces of water or other impurities probably act as initiators. The polymer yield increased with increasing aniline mixture. If the yield was only 2% at 0.5 mole% of aniline, it reached 27% at 1.7 mole%, and 36% at 4.4 mole%. Polymerization is completed

Card 1/4

Synthesis and some properties ...

28671
S/020/61/140/002/016/023
B103/B101

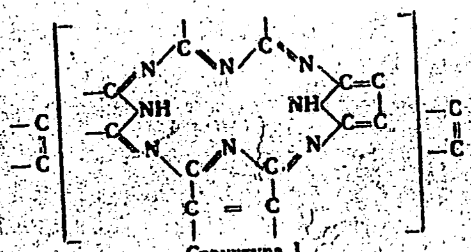
within 0.5 hr. The fact that the polymer yield does not depend on the reaction time is probably due to a stop of the macromolecule growth owing to the formation of inactive molecular complexes of TCE and to the increasing amount of the polymeric heterocyclic compound. Polytetracyano ethylene produced in the presence of aniline and kept in vacuo at 200°C for 20 hr remains unchanged when kept at 300°C for 4 hr. At 350°C, 9.6% of the weight is lost during the first 15 min. No further change of the polymer occurs at this temperature. A further rise of temperature destroys the polymer appreciably. The weight loss is 38.5% at 400°C, 62.5% at 450°C, and at 500°C the polymer is entirely destroyed. The electrophysical properties of polytetracyano ethylenes are similar to those of the polymeric chelates of tetracyano ethylene. The polymers exhibit an increased conductivity of 10^{-7} to 10^{-9} $ohm^{-1} \cdot cm^{-1}$. Their activation energy is 7-13 kcal/mole. The polymers obtained show a narrow epr signal of high intensity with a distance between the maxima of 4-6 oe and a g factor of 2, but without a hyperfine structure. The concentration of the paramagnetic particles is 10^{20}-10^{21} per gram. The broad lines are asymmetric, their branches extend over some thousand in some polymers. The data available at present are not sufficient for

Card 2/4

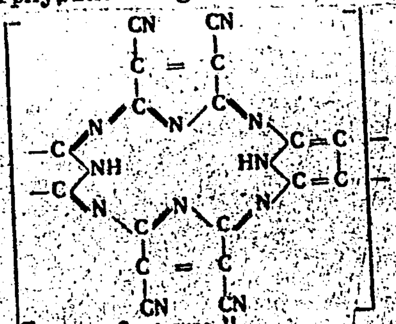
28671
S/020/61/140/002/016/023
B103/B101

Synthesis and some properties ...

defining the structure of the TCE polymers. It is, however, assumed that, like in the synthesis of phthalocyamines, macromolecules are formed owing to the formation of interlinked azoporphyrine rings:



Структура I



Структура II

There are 3 figures, 2 tables, and 7 references: 3 Soviet and 4 non-Soviet. The three references to English-language publications read as follows: U. Bircumshaw, T. W. Tayler, J. Chem. Soc., 1954, 931; R. C.

Card 3/4

28671

Synthesis and some properties ... S/020/61/140/002/016/023
B103/B101

Houtz, Text. Res. J., 20, 786 (1950); N. Grassil, J. C. McNeill, J. Pol. Sci., 27, 207 (1958).

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences USSR)

PRESENTED: March 16, 1961, by N. N. Semenov, Academician

SUBMITTED: March 16, 1961

Card 4/4

38286

S/190/62/004/006/012/026
B110/B138

15.8150

AUTHORS: Berlin, A. A., Matveyeva, N. G., Sherle, A. I., Kostrova, N. D.

TITLE: Polymers with conjugate bonds and heteroatoms in the conjugate chains. XXI. Polymeric complexes of tetraethylene cyanide

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 6, 1962, 860-868

TEXT: The preparation of polymers from tetraethylene cyanide and metals or metal salts was studied because: (1) tetraethylene cyanide has a planar structure, which permits conjugation via nitrile groups; (2) it shows four nitrile groups on two carbon atoms, and may form cyclic structures with and without metal atoms; (3) polymers obtained from it and the metals have so far been the only "inorganic" macromolecular compounds with directly bonded carbon, nitrogen and metals; and (4) because of the high vapor tension and heat stability of the monomer polymer complexes can be formed directly on the metal surface (Cu, Fe, Ni, Al etc). Black films which were insoluble in organic, alkaline, and

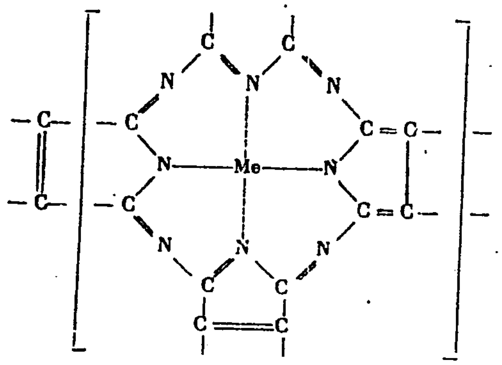
Card 1/4

acidic substances were obtained here after 5 - 20 hr at 150 - 450°C. The black, infusible, hygroscopic polymers obtained from tetraethylene cyanide and copper acetylacetonate (2:1) were insoluble in common organic substances, variously soluble in dimethyl formamide, pyridine, triethanolamine and concentrated H_2SO_4. The IR spectra of the films obtained from tetraethylene cyanide and copper showed a background at 700 - 1800 cm^{-1} which is typical for built-up or planar polymers with conjugate bonds. Polymers from copper acetylacetonate showed a wide asymmetric absorption band at 1700 - 1400cm^{-1}. For all polymers the absorption maximum lies at $\sim$2210 cm^{-1}, which corresponded to the C≡N bond. The intensive background confirmed the strongly branched system of the conjugate bonds. The degree of order depends on conditions of synthesis. Polymers obtained from copper acetylacetonate showed abnormal η/c dependence on c, similar to polyphenylenes and polyazophenylenes. The presence of neighboring C≡N groups points to the formation of energetically favorable, flat azoporphin structures with or without chelate-like bonded metals:

X

Polymers with conjugate bonds...

S/190/62/004/006/012/026
B110/B138



Polymers obtained from metals had much higher heat stability than those obtained from copper acetylacetonate, since the acetylacetonate groups bonded to a metal of different valences initiate chain decomposition into peroxide radicals. The magnetic susceptibility depends on the flux density and temperature, and is higher ($\varkappa = 1.03 \cdot 10^{-5}$ CGSM) (20°C, 3500

Card 3/4

Polymers with conjugate bonds... S/190/62/004/006/012/026
B110/B138

oersted) for a polymer obtained from acetylacetonate in absence of the solvent than for one obtained in the presence of cyclohexanone. The dependence of $\log \varrho$ on $1/T$ is linear for all polymers. The conductivities are 10^{-5} to 10^{-12} ohm$^{-1}\cdot$cm^{-1}, the activation energy $E = 10 - 15$ kcal/mole. There are 5 figures and 4 tables.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics AS USSR)

SUBMITTED: April 8, 196

Card 4/4

S/064/62/000/012/005/006
B119/B180

AUTHOR: Matveyeva, N. G.

TITLE: Coordination polymers

PERIODICAL: Khimicheskaya promyshlennost', no. 12, 1962, 39 - 54

TEXT: The article reviews Western and Soviet research work carried out between 1960 and 1962 in the field of polychelates, and polymeric compounds capable of forming chelate cycles on the basis of a normal organic principal chain and functional groups bound to it. There are 7 tables and 45 references.

Card 1/1

MATVEYEVA, N.G.

Coordination polymers. Khim.prom. no.12:897-912 D '62.
(MIRA 16:2)

(Coordination compounds)
(Polymers)

BERLIN, A.A. (Moskva); MATVEJEVA, N.G. [Matveyeva, N.G.] (Moskva); CERKASINA, L.G. [Cherkashina, L.G.] (Msokva); SERLE, A.I. [Sherle, A.I.] (Moskva).

Synthesis of polymers with heteroatoms and atoms of metals in a molecular chain and some of their properties. Chem prum 13 no.11:601-605 N'63.

ROGINSKIY, S.Z.; BERLIN, A.A.; KUTSEVA, L.N.; ASEYEVA, R.M.; CHERKASHINA, L.G.; SHERLE, A.I.; MATVEYEVA, N.G.

Catalytic properties of organic polymers with a system of conjugated bonds. Formation of hydroperoxides by the oxidation of alkyl aromatic hydrocarbons and cyclohexane. Dokl. AN SSSR 148 no.1:118-121 Ja '63. (MIRA 16:2)

1. Institut khimicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Roginskiy).
(Hydrocarbons) (Hydroperoxides)
(Conjugation (Chemistry))

L 21557-66 EWT(m)/EWP(j)/T IJP(c) RM/WW

ACC NR: AP6009487 SOURCE CODE: UR/0020/66/167/001/0091/0094

AUTHOR: Berlin, A. A.; Matveyeva, N. G.

41 B

ORG: Institute of Chemical Physics, Academy of Sciences SSSR (Institut khimicheskoy fiziki, Akademii nauk SSSR)

TITLE: Polymerization and copolymerization of tetracyanoethylene under the effect of polymers with a conjugated system

SOURCE: AN SSSR. Doklady, v. 167, no. 1, 1966, 91-94

TOPIC TAGS: organic semiconductor, semiconducting polymer, quasiradical polymerization

ABSTRACT: The feasibility has been studied of using paramagnetic conjugated polymers as catalysts in the "quasi-radical" polymerization and copolymerization of low reactivity monomers such as tetracyanoethylene (I), anthracene, naphthacene, and pentacene. I was polymerized alone or copolymerized with anthracene, naphthacene, or pentacene. Soluble fractions of polyphenylene or polyanthryl were used as the catalyst in various concentrations so as to vary the unpaired spin concentration. Polymerization was carried out at 200C and 10^{-3} mm Hg. It was found that the polymer or copolymer yield increased with spin concentration. In the case of the copolymerization of I with anthracene, the highest yield was obtained at a I/anthracene ratio of 4/1. The copolymers were black infusible powders insoluble in the common organic

Card 1/4

L 21557-66

ACC NR: AP6009487

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solvents. The copolymers were more stable to thermal-oxidative degradation than the homopolymer: at 350C the homopolymer from I degraded fully, while weight losses in the copolymers only went as high as 30—35%. The electrical conductivity of the copolymers was 5—6 orders of magnitude as high as that of anthracene, i.e., 10^{-9} mho/cm, and had an activation energy of 8—11 kcal/mol. Naphthacene, pentacene, and polyphenylene also copolymerized with I. A mechanism is proposed for the catalysis, which involves charge-transfer complex formation. The reaction may be represented as follows:

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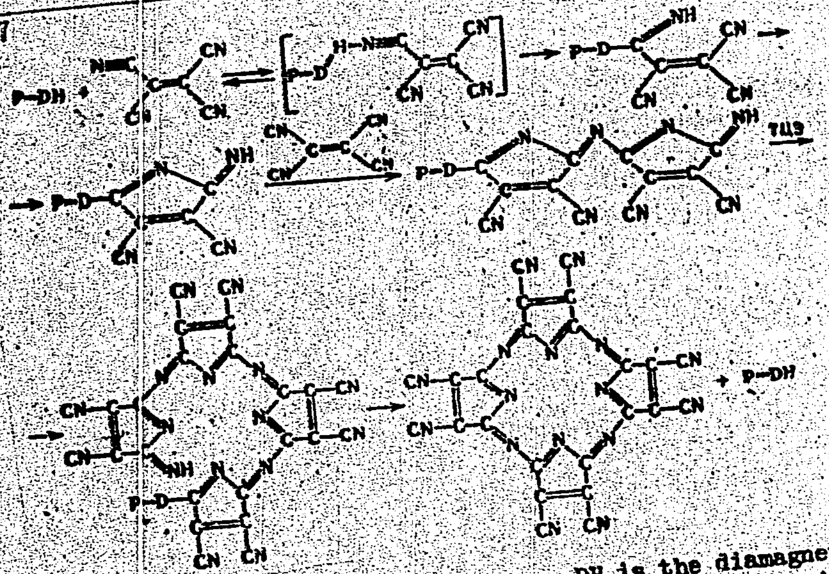
L 21557-66
ACC NR: AP6009487



where P is the polymer fraction with unpaired spins, DH is the diamagnetic polymer homolog; the P...DH notation indicates a charge-transfer complex. It is assumed that numerous conjugated substances (dyes, carotenoids, conjugated polymers) will be

Card 3/4

L 21557-66

ACC NR: AP6009487

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capable of undergoing quasi-radical polymerization and copolymerization to form new polymers. Orig. art. has: 2 figures and 1 table. [SM]

SUB CODE: 11, 07 SUBM DATE: 08Aug65/ ORIG REF: 014/ OTH REF: 001/
ATD PRESS: 4219

Card 4/4 BLG

L 23273-66 EWT(m)/EWP(j)/T/ETC(m)-6 IJP(c) WW/RM

ACC NR: AP6012721 SOURCE CODE: UR/0190/66/008/004/0736/0743

33
34
B

AUTHOR: Berlin, A. A.; Matveyeva, N. G.

ORG: Institute of Chemical Physics AN SSSR (Institut khimicheskoy fiziki AN SSSR)

TITLE: Tetracyanoethylene polymerization and copolymerization catalyzed by paramagnetic polymers

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 4, 1966, 736-743

TOPIC TAGS: organic semiconductor, semiconducting polymer, polytetracyanonitrile, quasiradical polymerization

ABSTRACT: The feasibility has been studied of using paramagnetic conjugated polymers as catalysts in the "quasi-radical" polymerization of tetracyanoethylene (I) and its copolymerization with certain other conjugated compounds. I was homopolymerized or copolymerized with anthracene, naphthacene, pentacene, or polyphenylene. Soluble fractions of polyphenylene or polyanthryl were used as the initiator in various concentrations. It was found that in the presence of conjugated polymers I is capable of homo- and copolymerization. The product yield increased with initiator concentration. The molar ratio I/anthracene was 4/1 in the appropriate copolymer. The I-anthracene

2

Card 1/2 UDC: 66.095.26+678.13+678.745

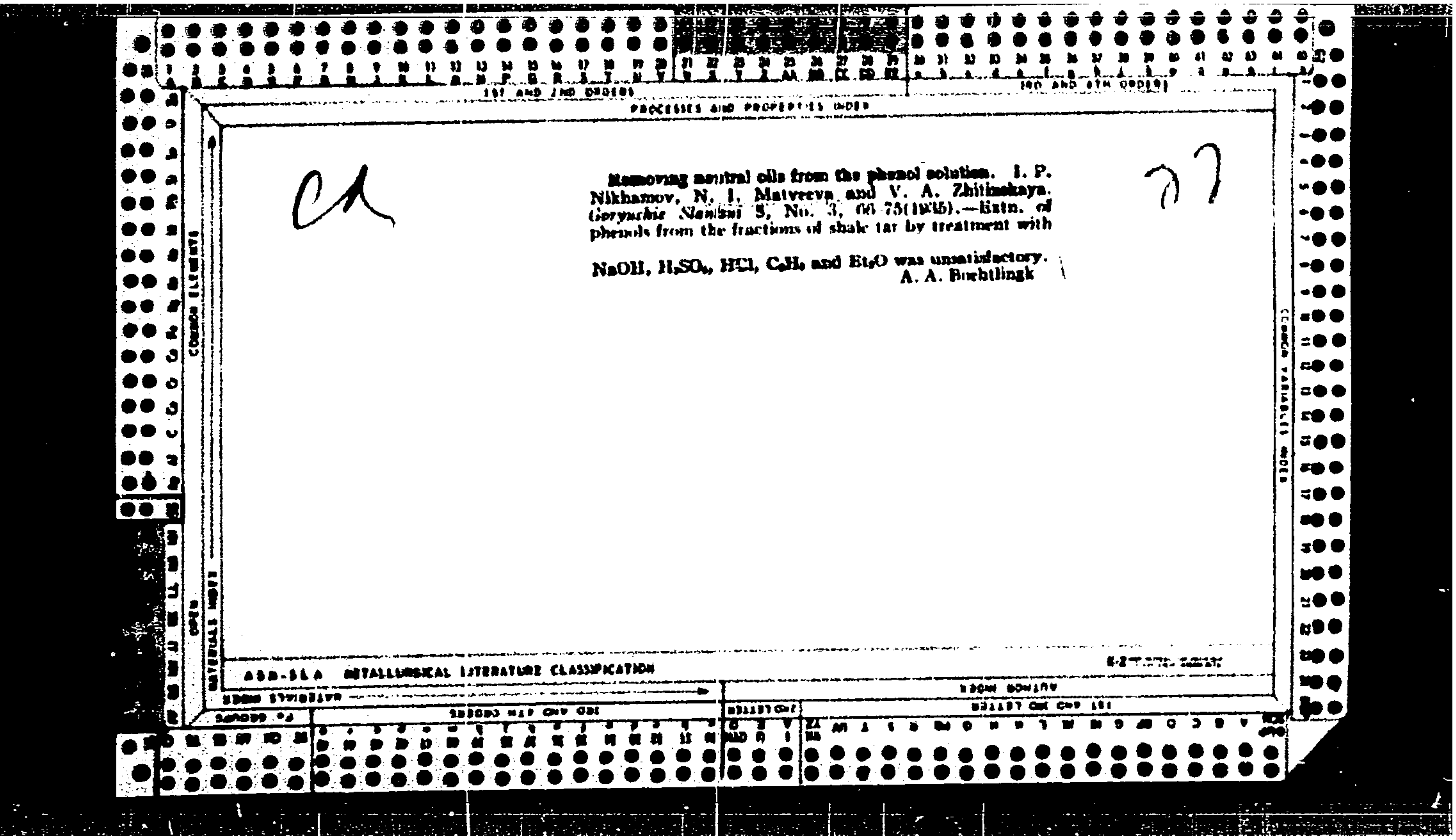
L 23273-66

ACC NR: AP6012721

copolymer showed an electrical conductivity of 10^{-9} mho/cm at an activation energy of 8—21 kcal/mol. The thermal-oxidative stability of I-polyphenylene copolymers exceeded that of homopolymers of I; they were stable until 350C. A probable mechanism is suggested for the quasi-radical polymerization, based on charge-transfer complex formation at the initiation and propagation steps and activation by paramagnetic particles. Orig. art. has: 3 figures and 3 tables. [SM]

SUB CODE: 07, 20/ SUBM DATE: 07May65/ ORIG REF: 014/
OTH REF: 002/ ATD PRESS: 4235

Card 2/2 OLR



Ch

77

Removing neutral oils from the phenol solution. I. P. Nikhamov, N. I. Matveeva and V. A. Zhitinskaya. *Goryuchie Slantsi* 5, No. 3, 66-75(1935).—Extn. of phenols from the fractions of shale tar by treatment with NaOH, H_2SO_4, HCl, C_6H_6 and Et_2O was unsatisfactory.

A. A. Boehtlingk

MATVEYEVA, N.I.

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of Solid Mineral Fuels, I-12

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62512

Author: Kollerov, D. K., Matveyeva, N. I.

Institution: None

Title: Specific Heat of Commercial Shale, Shale Coke and Shale Concentrate

Original Periodical: Tr. Vses. n.-i. in-ta po pererabotke slantsev, 1955, No 4, 236-243

Abstract: Results of calorimetric determinations of specific heat values of commercial shale of the Baltic region, chamber-oven coke and shale concentrates, produced by flotation, at heating temperatures of the samples up to 150°. On the basis of the results thus obtained thermal capacity equations are derived which are recommended for technological computations.

Card 1/1

SKRYNNIKOVA, G.N.; MATVEYEVA, N.I.; IVSHINA, Ye.N.

Potentiometric method of determining acid members of shale tars.
Trudy VNIIPS no.6:227-234 '58. (MIRA 11:8)
(Potentiometric analysis) (Tar)

SKRYNNIKOVA, G.N.; MATVEYEVA, N.I.

Determination of hydroxyl groups in phenols and acids in shale tars by the high-frequency and potentiometric titration methods.
Trudy VNIIPS no.7:282-293 '59. (MIRA 12:9)
(Oil shales) (Hydroxyl group) (Potentiometric analysis)

SKRYNNIKOVA, G. N.; MATVEYEVA, N. I.; SMETANIN, L. L.

High-frequency titrimeter for the determination of strong and weak acids, bases, phenols, and salts in aqueous and nonaqueous media. Trudy VNIIT no. 11:289-303 '62. (MIRA 17:5)

SKRYNNIKOVA, G.N.; MATVEYEVA, N.I.

Developing a method for the oculometric determination of phenols in oils. Trudy VNIIT no.12:218-229 '63. (MIRA 18:11)

SKRYNNIKOVA, G.N.; GOVOROVA, L.M.; MATVEYEVA, N.I.

Determining diatomic phenols in small concentrations by the methods of colorimetry and coulometry. Trudy VNIIT no.13:200-212 '64. (MIRA 18:2)

SKRYNNIKOVA, G.N.; MATVEYEVA, N.I.; SMETANIN, L.L.; VORONOVA, Ye.I.

Testing the new design of a high-frequency titrimeter. Trudy VNIIT no.13:213-218 '64. (MIRA 18:2

8 (3) SOV/105-59-8-9/28

AUTHORS: Livshits, V. N., Matveyeva, M. K.

TITLE: The Consideration of Resonance Phenomena in the Overhead Contact System During the Performance of Rectifier Engines

PERIODICAL: Elektrichestvo, 1959, Nr 8, pp 41 - 45 (USSR)

ABSTRACT: This is an investigation of the distribution of the non-sinusoidal feed current of a rectifier engine in the overhead contact system based upon the following articles. The theoretical and experimental investigations presented in reference 1 resulted in the determination of the amplitudes of the harmonics in the primary current of the engine, not accounting for the capacity of the contact wire. Other investigations (Refs 2,3) showed that the distributed capacity of the contact wire modifies the amplitudes of the primary current harmonics only to some extent, but effects considerable changes in the harmonics spectrum of the traction substation current. It was shown that in the substation the amplitudes of the harmonics are much greater than those of the primary engine current, which can be explained by the resonance phenomena occurring due to the distributed capacity of the contact wire. The method devised by M. P. Kostenko (Ref 4) may serve as a basis of theoretical investigation of

Card 1/3

The Consideration of Resonance Phenomena in the Overhead Contact System During the Performance of Rectifier Engines

SOV/105-59-8-9/28

resonance phenomena. According to this theory, the rectifier installation is considered a hypothetical generator of higher harmonics electromotive forces. By applying this principle, Jotten and Lebrecht (Ref 5) have found the harmonics spectrum of the substation for two cases: the engine is close to the substation or at the end of the line. In this article, the more general case is investigated in which the engine is at any distance l from the substation, that is $0 < l < l_{end}$. The equivalent circuit shown by figure 2 is the starting point of a calculation of the distribution of the n-th harmonic of the current over the line. Formulas (9) are derived for the equivalent disturbance current, formula (10) for the amplification coefficient k_{ampl} of the n-th harmonic, and formula (11) for the calculation of the resonance frequency of an existing line. It is shown that the results derived from formulas (10) and (11) differ considerably from those obtained from formulas (12), (13), and (14) set up by Jotten and Lebrecht. This is ascribed to mathematical inaccuracy in the derivation of formulas (12) and (13) by Jotten and Lebrecht.

Card 2/3

The Consideration of Resonance Phenomena in the Overhead Contact System During the Performance of Rectifier Engines SOV/105-59-8-9/28

Finally, the general method is specialized to the cases of the engine being either near the substation or at the far end of the section which is fed from one end. The calculations showed for the first case that the mean amplification factor can be determined approximately from formula (16) for existing traction systems, the mean error not exceeding 1.5%. There are 3 figures, 1 table, and 8 references, 7 of which are Soviet.

ASSOCIATION: Institut kompleksnykh transportnykh problem AN SSSR (Institute of Complex Transportation Problems of the AS USSR)

SUBMITTED: October 20, 1958

Card 3/3

SAMYGIN, G.A.; VARLAMOV, V.N.; MATVEYEVA, N.M.

Ability of seeds to resist ultralow temperatures. Fiziol. rast. 7 no.1:97-100 '60. (MIRA 13:5)

1. K.A. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.
(Seeds) (Plants--Frost resistance)

SAMYGIN, G.A.; MATVEYEVA, N.M.

Viability of lemon leaf sections. Fiziol. rast. 8 no.1:114-116 '61.
(MIRA 14:3)

1. K.A. Timiriazev Institute of Plant Physiology, US.S.R. Academy of Sciences, Moscow.
(Leaves) (Lemon) (Plant physiology--Research)

SAMYGIN, G.A.; MATVEYEVA, N.M.

Comparative resistance of the cells to freezing, drying, and plasmolysis and its changes due to hardening of the plant. Fiziol. rast. 8 no.4:482-489 '61. (MIRA 14:11)

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.

(Plants--Hardiness)

SAMYGIN, G.A.; MATVEYEVA, N.M.

Protective effect of solutions during the freezing of plant tissues. Izv. AN SSSR Ser. biol. 28 no.4:574-587 Jl-Ag'63
(MIRA 16:11)

1. Institute of Plant Physiology, Academy of Sciences of the U.S.S.R., Moscow.

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BARSKAYA, Ye.I.; SAMYGIN, G.A.; MATVEYEVA, N.M.

State of chloroplasts in plant cells after freezing and thawing. Fiziol. rast. 11 no.6:1056-1062 N-D '64. (MIRA 18:2)

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.

MATVEYEVA N. M.

USSR/Chemistry - Metallic compounds

Card 1/2 Pub. 22 - 24/47

Authors : Kornilov, I. I., and Matveyeva, N. M.

Title : Constant solid solutions of metallic FeCr and FeV compounds

Periodical : Dok. AN SSSR 98/5, 787-790, Oct 11, 1954

Abstract : The existence of a continuous series of solid alpha solutions in the ternary Fe - Cr - V system at high temperatures and the formation of a continuous series of solid sigma solutions between FeCr and FeV compounds was confirmed by thermal analysis, hardness and micro-structural methods. The process and rate of formation of such solid sigma compounds, from solid alpha solutions, are explained. The temperatures leading to conversion of solid solutions of the sigma FeCr and FeV compounds into ternary solid solutions of alpha compounds, which constitute the ternary system of metals, were found to be of continuous nature and correspond to conversions of solid sigma solutions into

Dok. AN SSSR 98/5, 787-790, Oct 11, 1954 (Additional card)

Card 2/2

Abstract : solid solutions of alpha metals. Nine references: 8-USSR and 1-USA (1936-1954). Graphs.

Institution: Acad. of Sc. USSR, The A. A. Baykov Metallurgical Institute

Presented by: Academician G. G. Urazov, May 22, 1954