"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

SOV/20-120-5-21/67

The Electric Properties and Structure of the Transitional Forms of Carbon

ASSOCIATION: Institut [illegible] Akademii nauk SSSR (Institute of Mineral Fuels [illegible])

PRESENTED: [illegible], Lenin, [illegible], Member, Academy of Sciences, USSR

SUBMITTED: February 19, [illegible]

1. Carbon--Phase studies 2. Carbon--Electrical properties
3. Carbon--Structural analysis 4. Carbon--Temperature factors

Card 3/3

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SHISHAKOV, Nikolay Alekseyevich; ANDREYEVA, Valentina Vladimirovna; ANDRUSHCHENKO, Nina Konstantinovna; KASATOCHKIN, V.I., doktor khim.nauk, otv.red.; BABAD-ZAKHRYAPIN, A.A., red.izd-va; BRUZGUL', V.V., tekhn.red.

[Structure and formation of oxide films on metals] Stroenie i mekhanizm obrazovaniia okisnykh plenok na metallakh. Moskva, Izd-vo Akad.nauk SSSR, 1959. 194 p. (MIRA 12:12)
(Metallic films)

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11(7) PHASE I BOOK EXPLOITATION SOV/2996

Akademiya nauk SSSR. Institut goryuchikh iskopayemykh

Genezis tverdykh goryuchikh iskopayemykh (Genesis Of Solid Fuels) Moscow, AN SSSR, 1959. 358 p. Errata slip inserted. 2,000 copies printed.

Sponsoring Agency: Vsesoyuznoye khimicheskoye obshchestvo im. D. I. Mendeleyeva. Moskovskoye otdeleniye.

Resp. Eds.: N. M. Karavayev, Corresponding Member, USSR Academy of Sciences, and N. G. Titov, Doctor of Chemical Sciences; Ed. of Publishing House: A. L. Bankvitzer; Tech. Ed.: I. F. Kuz'min.

PURPOSE: This collection of articles is intended for geochemists, geologists, and other specialists interested in the genesis of solid mineral fuels.

COVERAGE: The collection of papers on the genesis of solid mineral fuels has been prepared for presentation at the 2nd All-Union Conference on this subject. The formation of humic acids and peat from the decomposition of microorganisms and plants is discussed in connection with studies on the origin of hard coal and brown coal and on the role of certain mineral components in the coal-forming process. The chemical composition of peat and the organic mass of coal are analyzed and shown in a number of tables. Estonian "Kukkersite" oil shales are analyzed as are the brown coals of the Dnepropetrovsk basin. Metamorphism and carbonization of coal found in different parts of the Urals and the Ukrainian SSR are also discussed. The transformation of parent matter into combustible minerals is analyzed. References accompany individual articles.

Rendeyp, Kh. T. Genesis of Estonian Kukkersite Oil Shale 69

Fomina, A. S. On the Question of the Origin of Baltic Kukkersite Oil Shale 77

Karavayev, N. M., and I. A. Vikman. Lignite and Initial Stages of Coal Formation 92

Syabryay, V. T. Origin of Brown Coal Found in the Dnepropetrovsk Basin of the Ukrainian SSR 106

Cherpousov, Ya. M. Irregular Carbonization of Mesozoic Coal Found on the Eastern Flank of the Central and Northern Urals 121

Bogolyubova, L. I. Petrographic and Chemical Characteristics of Some Types of Coal From Volchanskoye and Bogoslovskoye Deposits 137

Kiryukov, V. V. Conditions of Formation of Slightly Carbonized Coal From Southern Ural Brown Coal Basin 143

Knyazev, V. A. Metamorphism of Brown Coal From Bogoslovskoye and Veselovskoye Deposits of the Eastern Flank of the Northern Urals 160

Bludorov, A. I. Geologic Conditions of Transformation of Coal Substance in the Southeastern Part of the Russian Platform 166

Grigor'yev, M. Yu. Some Possible Conditions Under Which Coal Strata Could Have Been Formed at the Kuznetsk Basin 180

Zabrammy, D. T. Evolution of Humic Coal During Metamorphism 189

Shternberg, L. Ya. Changes in Microscopic Characteristics of Clarain Coal of the Donbass During Metamorphism 198

Malinenko, V. V. Genesis of Jurassic Coal at Tuva 221

Gebler, I. V. Organic Sulfur in Coal 241

Kazatochkin, V. I. Some General Physical and Chemical Questions Concerning the Coal-forming Process 247

Fanov, N. I. Characteristics of the Process of Transformation of Parent Matter Into Present Combustible Minerals and the Connection of These Characteristics With the Principal Properties of Combustible Minerals 258

Asmosov, I. I. Genetic Features of the Coal Substance as Ascertained by Petrographic Findings 295

Zabavin, V. I. Chemical Nature of the Basic Organic Mass of Hard and Brown Coal and Changes During Metamorphism 309

Kukharenko, T. A. Changes in the Structure and Properties of Humic Acids During the Coal-forming Process 319

Titov, N. G. Role of Mineral Elements in the Coal-forming Process 338

Kaminskiy, V. S., A. L. Rubinshteyn, and A. Z. Yurovskiy. Genesis of Organic Sulfurous Compounds Contained in Coal 344

KASATOCHKIN, V.I.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KASATOCHKIN, V. I.

"The Particularities of the Molecular Structure and Properties of Coal."

"The Physico-Chemical Aspect of the Metamorphism of Coals."

papers to be submitted for the Symposium on the Nature of Coal, Dhanbad, India, 7-9 Feb 59.

Inst. of Mineral Fuels, Acad. Sci. USSR, Moscow.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

SOV/180-59-3-36/43

AUTHORS: Davydova, M.A., Kasatochkin, V.I., Mukhanova, L.N. and Tayts, Ye.M. (Moscow)

TITLE: Mechanical Strength and Polymeric Structure of Thermally Treated Coals

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 3, pp 171-175(USSR)

ABSTRACT: Changes in microhardness, resistance to crushing (in a drum containing steel balls), interlattice order and sizes of carbon layers of solid residues obtained on thermal decomposition of various coals in the temperature range 500 to 2340°C were studied. A regular relationship between the course of changes in the mechanical strength and molecular-structural transformations, which take place in the residues on the temperature at which coal was treated, was established (Fig 1, 2, 3 and 4). The microhardness depends on the total number of spatial bonds of the polymeric substance of the solid carbonaceous residue. The dependence of changes in the resistance to crushing on the temperature at which coal was treated is related

Card 1/2

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SOV/180-59-3-36/43

Mechanical Strength and Polymeric Structure of Thermally Treated Coals

to the accumulation of internal stresses in the substance of solid residues. There are 4 figures and 9 Soviet references.

SUBMITTED: October 13, 1958

Card 2/2

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

SOV/89-7-3-19/29

21(1)

AUTHORS: Kasatochkin, V. I., Zamoluyev, V. K., Kavernov, A. T.

TITLE: The Relationship Between the Thermophysical Properties and the Atomic-molecular Structure of Carbon in Homogeneous Graphitization

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 3, pp 272-275 (USSR)

ABSTRACT: The following properties of a cracked petroleum coke are experimentally determined: Specific heat, temperature conductivity, thermal conductivity, and degree of graphitization, the samples being investigated under various isothermal conditions and temperatures. The initial material had a density of 1.405 g/cm^3, a salt content of 0.08%, and a yield of volatile substance of 5.13%, a volume weight of 0.50 - 0.56 g/cm^3, and a grain composition within the range of 0 - 0.5 mm. Graphitization was carried out in a graphite furnace in nitrogen- or argon atmosphere. The degree of graphitization was radiographically measured according to reference 4 from the distance between layers. The X-ray pictures of the graphitization products were produced in cylindrical 70 and 43 mm chambers by means of filtrated copper- and iron radiation. The specific heat

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SOV/89-7-3-19/29

The Relationship Between the Thermophysical Properties and the Atomic-molecular Structure of Carbon in Homogeneous Graphitization

carboniferous substances having certain definite thermo-physico properties from petroleum-coke. There are 4 figures and 9 references, 7 of which are Soviet.

SUBMITTED: November 21, 1957

Card 3/3

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KASATOCHKIN, V.I.; TAYTS, Ye.M.; DAVYDOVA, M.A.; TYABINA, Z.S.

Changes in the structure and physicomechanical properties of coals under thermal processing. Trudy IGI 8:89-95 '59. (MIRA 13:1)

(Coal)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

SMUTKINA, Z.S.; KASATOCHKIN, V.I.

Composition of the volatile matter at various stages of thermal decomposition of longflame coal. Trudy IGI 8:96-103 '59. (MIRA 13:1)

(Coal--Analysis)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

MAZANKINA, K.T.; KASATOCHKIN, V.I.

X-ray structural analysis of coals. Trudy IGI 8:104-112 '59.
(MIRA 13:1)

(Coal) (X-ray chrystallography)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

3(8)

AUTHORS: Shterenberg, L. Ye., Mazankina, K. T., Kasatochkin, V. I.

SOV/20-124-3-50/67

TITLE: Specific Ways of Metamorphism of Different Types of Humus Coals (Osobennosti putey metamorfizma raznykh tipov gumusovykh ugley)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 3, pp 666-669 (USSR)

ABSTRACT: Many authors have shown (Refs 1-3) that during metamorphism, all coal components undergo an alteration of their elementary compounds. The ratio C / H increases while the hydrogen content decreases; the molecular structure is correspondingly changed, etc. Above all, these similar changes occur in different coals at different rates. By a comparison of different genetic anthracite types (humus and sapropel anthracite) from the same geological environment, considerable chemical and structural differences between the types could be determined. They indicate that the metamorphism of the substance from which sapropel coals form was slower than the metamorphism of the original substance of the humus type (Ref 4). The authors have investigated the molecular structure and the elementary

Card 1/3

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compounds of different humus coal types which belong to the same genetic group. These coals came from the central part of the Donbass and consist of mat coal and gloss coal. V. S. Veselovskiy furnished the material for the investigation; I. L. Ettinger determined the sorption methane capacity. In thin section the mat coal is seen to consist of spore-durain with 51 % macro- and microspores, 6 % transparent groundmass, and 43 % opaque groundmass. All the characteristics (the color of the spores in transmitted and reflected light, the relief of the spores, anisotropy, and the color of the gel-like ground-mass) allow these coals to be designated as long-flame coal according to the degree of metamorphism. The gloss coal, a clarain, consists of 91 % gel-like ground-mass, 5 % microspores and cuticle, and about 4 % fusain. The optical characteristics as well as the composition and structure of the coals lead the authors to conclude that the genetic process of metamorphism of the substance, which constitutes the two coal types, takes place independently. This agrees with earlier results (Ref 3) that indicate that

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Specific Ways of Metamorphism of Different Types of Humus Coals SOV/20-124-3-50/67

the rate of the coal building process of single coal components is different during metamorphism. There are 3 figures, 1 table, and 7 references, 5 of which are Soviet.

ASSOCIATION: Geologicheskiy institut Akademii nauk SSSR (Geologic Institute, Academy of Sciences, USSR)
Institut goryuchikh iskopayemykh Akademii nauk SSSR (Institute of Mineral Fuels, , Academy of Sciences, USSR)

PRESENTED: June 17, 1958, by A. L. Yanshin, Academician

SUBMITTED: June 16, 1958

Card 3/3

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

SOV/20-125-4-46/74

5(4)

AUTHORS: Kasatochkin, V. I., Petrov, G. G., Smutkina, Z. S., Pechkovskaya, Z. B.

TITLE: The Physico-chemical Nature of Coal Coking (Fiziko-khimicheskaya priroda koksovaniya ugley)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 4, pp 852-855 (USSR)

ABSTRACT: A polymer is the substance of the organic ground mass of fossil coal. Its structural elements are formed by a flat aromatic net of carbon atoms (in the nuclear part of the structure) with organic, not aromatic side radicals (peripheral part). The latter contain carbon, hydrogen, oxygen and several other elements (Ref 1). Under isothermal conditions of coal pyrolysis it is possible to draw a particular clear distinction with respect to time between the successive stages of primary and secondary decomposition. They correspond to the reactions of the peripheral and the nuclear part of the structure which differ with respect to the amount of activation energy (Ref 2). The vigorous separation of volatile substances (Curve I) and the constancy of the size of carbon nets L_a (Curve II) are characteristic of the primary decomposi-

Card 1/3

radical. Under

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conditions of a not selective high-temperature-process, however, the reactions proceed to a great extent under rupture of the C-C-bonds. Entire fragments of the side radicals are broken off. As a result of this coal is not deprived of the destructive elements O and H (Ref 4). In the case of an acceleration of the temperature rise of from 3 degrees/min to 100 degrees/min the sum $V_t + V_{radical}$ increases considerably (V_t denotes the sum of the losses in weight, $V_{radical}$ the "remaining" volatile substances, Fig 3). The rise of C/H of the solid radical becomes flatter and flatter. In conclusion the authors give a physical summary of the formation of coke. There are 4 figures, 1 table, and 8 references, 7 of which are Soviet.

PRESENTED: November 22, 1958, by A. V. Topchiyev, Academician

SUBMITTED: July 29, 1958

Card 3/3

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KASACHOTKIN, V. I., LUK'YANOVICH, V. M., POPOV, M. M., CHMUTOV, K. V.

KASATOCHKIN

"Research by microdiffraction on the structure of lampblack particles."

report to be submitted for the 10th Annual Meeting, French Society of Chemistry (Structure and Reaction Kinetics of Graphite) - Paris, France, 7-10 Jun 1960.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KASATOCHKIN, Vladimir Ivanovich; PASYNSKIY, Anatoliy Germanovich; KUVSHINSKIY, M.N., red.; ZAKHAROVA, A.I., tekhn.red.

[Physical and colloid chemistry] Fizicheskaia i kolloidnaia khimiia. Moskva, Gos.izd-vo med.lit-ry, 1960. 290 p. (MIRA 13:7)

(Colloids) (Chemistry, Physical and theoretical)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

PECHKOVSKAYA, Z.B.; SMUTKINA, Z.S.; KASATOCHKIN, V.I.

Studying the process of the thermal decomposition of coal. Izv.Sib. otd.AN SSSR no.9:63-71 '60. (MIRA 13:11)

1. Institut goryuchikh iskopayemykh Sibirskogo otdeleniya AN SSSR.
(Combustion)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

LARINA, N.K.; KASATOCHKIN, V.I.

Investigating the kinetics and the mechanism of coal oxidation. (MIRA 13:12)
Trudy IGI 14:98-107 '60.
(Coal--Testing) (Oxidation)

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B004/B056

AUTHORS: Kasatochkin, V. I., Zamoluyev, V. K., Kaverov, A. T., and Usenbayev, K.

TITLE: The Thermophysical Properties of the Transition Forms of Carbon

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 1, pp. 121-124

TEXT: The authors give a report on the determination of the specific heat c_p, of the temperature coefficient a of thermal conductivity and of the thermal conductivity λ of the transition forms of carbon, obtained by heating petroleum coke, channel black, and thermal carbon black to temperatures of between 1000 and 3000°C in nitrogen- or argon atmosphere. c_p and a were determined according to G. M. Kondrat'yev (Ref. 7), λ was calculated according to the equation $\lambda = c_p a \beta$ (β = weight by volume). The measurement results for c_p and a are represented in Figs. 1,2, the

Card 1/4

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The Thermophysical Properties of the Transition Forms of Carbon

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calculated values of λ in Fig. 3 as a function of temperature. Fig. 4 shows λ as a function of the duration of heating of the substances mentioned at 1600 and 2500°C, as well as for coke coal (500°C) and coal of the type ПС (PS) (700°C). In Table 1 the degrees of graphitization γ are given. The results obtained are interpreted. 1) Petroleum coke: slight decrease of c_p below 1800°C by destruction of the side radicals. As a result of recombination of the liberated bindings, the spatial network of bonds, however, remains conserved. At 1800 to 2000°C, a considerable drop of c_p takes place by combination of neighboring carbon layers. Above 2000°C c_p decreases because of orientation of the carbon layers from d_{max} = 3.42 A to d_{min} = 3.35 A in graphitized carbon, γ_{max} = 1. In the case of thermal carbon black crystallization also sets in at 2000°C, graphitization, however, remains incomplete, γ_{max} = 0.77. The uniform course taken by the c_p-curve and the incomplete graphitization is explained by the forming of a spatial network of bonds, which contains

Card 2/4

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The Thermophysical Properties of the Transition Forms of Carbon

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thermostable =C=C=C= bonds between the carbon layers up to 3000°C. In channel black, c_p is low up to about 1300°C, it has a maximum at 1700°C, whereas between 2700 and 3000°C, c_p, a and λ fall. Channel black does not crystallize, γ_{max} = 0.09. Also in this case the cause is a (denser) spatial network of bonds, formed by the splitting off of oxygen-containing radicals and the forming of allene-carbon chains between the carbon layers. In fossile coals, a melting of the spatial network of bonds occurs at low temperatures similar as in the case of organic polymers. The properties of the carbon materials thus depend on the polymeric character of their structure and on the nature of the spatial network of bonds. Only for γ = 1 there is no spatial network of bonds. There are 4 figures, 1 table, and 12 references: 11 Soviet and 1 British.

ASSOCIATION: Institut goryuchikh iskopayemykh Akademii nauk SSSR (Institute of Mineral Fuels of the Academy of Sciences, USSR)

Card 3/4

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KASATOCHKIN, V. I.

S/062/61/000/001/002/016
B101/B220

AUTHORS: Dubinin, M. M., Zaverina, Ye. D., Ivanova, L. S., Kaverov, A. T., and Kasatochkin, V. I.

TITLE: Study of the nature of the micropore structure of activated carbons. Communication 1. Activated carbons from phenol-aldehyde resins

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, no. 1, 1961, 17-28

TEXT: The aim of the authors was to characterize the micropore structure of activated carbons by adsorption of molecules whose dimensions are comparable to those of the micropores. The present report deals with activated carbons from phenyl-aldehyde resin, whose structure has been modified considerably by treatment at various temperatures. The method of obtaining the carbon has been described previously (Refs. 11, 12). The product obtained by carbonization of the resin has been activated in a rotating quartz retort at 950°C till the loss in weight amounted to about

Card 1/9

50%. This specimen was termed A-950. Its heating in nitrogen to 1750, 2000, and 2300°C resulted in the specimens A-1750, A-2000, A-2300. A-3000 was obtained by heating in an electric resistance furnace of the type PC-100 (RS-100). Reduction in weight was 3.21% at 1750°C, 3.50% at 2000°C, 5.53% at 2300°C, and 5.57% at 3000°C. Debye-Scherrer patterns were taken by means of a BPC-3 (VRS-3) camera; the parameters L_m and L_c of the carbon crystallites were determined according to B. E. Warren (Ref. 13) and the radiographic density ρ was calculated from equation $\rho = zm/abc$ ($Z=4$, number of C atoms in the unit cell; $A=12$, atomic weight of C; $m=1.66\cdot10^{-24}$g, mass of the H atom; $a=b=2.456$ Å, constants of the graphite crystal lattice in the basal surface; $c=2d_{002}$, dimension of the unit cell along axis c). Table 1 indicates the data obtained. The adsorption properties of the specimens were determined in a wide range of relative pressure by means of a sorption balance for benzene, cyclohexane, and water at 20°C (Table 2). The constants of the isothermal lines of adsorption were calculated from Eq. (4) of the potential theory of adsorption: $a = a_0^{\prime}\exp\left[(-B(T^2/\beta^2)(\log p_s/p)^2\right]$, where $a_0^{\prime} = W_0/v$ (5)

Card 2/9

corresponds to the maximum occupation of the adsorption volume W_0 and v is the volume of 1 millimole of the adsorbed substance (Table 3). This carbon has a mixed structural type with two kinds of micropores as shown in Fig. 5 for benzene and A-1750. In the micropores of the first type, which correspond to $a_0^{\prime}$, there occurs an increase of the adsorption potential. This effect is absent in large micropores of the second type ($a_0^{\prime\prime}$). The following relation has been obtained: $a_0^{\prime} + a_0^{\prime\prime} = a^{\circ}$ (6). a° is the adsorption occurring at the beginning of hysteresis and capillary condensation of the vapor in the intermediate pores. This value is represented in Fig. 5 by a broken vertical line: $(p/p_s)_0 = 0.175$. Based on the sorption isotherm, the volumes of the different types of pores were evaluated: $v_{mi} = v_{mi}^{\prime} + v_{mi}^{\prime\prime}$ are the volumes of the two types of micropores; v_i is the volume of the intermediate pores; and v_s is the total volume of pores (Table 4). Tables 6 and 7 indicate the values found for the adsorption of organic substances and electrolytes. The crystallite surfaces (cylindrical lateral surface S_l, basal surfaces S_b) which were obtained from radiographical data do not coincide with calculations

Card 3/9

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according to Brunauer, Emmett and Teller, and Langmuir (Table 8). An attempt has been made to explain the structure by the example of A-950. It is assumed that binary micropores are formed by the combustion of two superposed crystallites when the carbon is heated. α is assumed to be the specific surface of the micropores composed of the surface α of the single micropores and of $1-\alpha$ of the "binary" ones. In the single micropores, n_1' molecules of one vapor and n_2' molecules of another vapor are assumed to be adsorbed. Correspondingly, n_1'', n_2'' molecules are adsorbed in the binary pores. ω_1, ω_2 are assumed to be the areas occupied by the adsorbed molecules. The following relations have been obtained:
$\alpha s n_1'/2\omega_1 + (1-\alpha)s n_1''/2\omega_1 = a_0'$ (11) and $\alpha s n_2'/2\omega_2 + (1-\alpha)s n_2''/2\omega_2 = a_0''$ (12) resulting in $\alpha = (An_2'' - n_1'')/[(An_2'' - n_1'') - (An_2' - n_1')]$ (13), where $A = a_0'\omega_1/a_0''\omega_2$ (14) and $s = 2a_0'\omega_1/[\alpha n_1' + (1-\alpha)n_1'']$ (15). For A-950 one obtains $\alpha = 0.256$ and $s = 568\ m^2/g$. Thus, binary pores are formed for the major part (74%). This approximative model of micropores agrees with radiographic data and reproduces the measurements of adsorption correctly. D. N. Strazhesko, S. G. Tolkachev, and I. V. Uspenskiy are thanked for

Card 4/9

assistance. There are 5 figures, 8 tables, and 25 references: 15 Soviet-bloc and 9 non-Soviet-bloc.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences USSR). Institut goryuchikh iskopayemykh Akademii nauk SSSR (Institute of Mineral Fuels, Academy of Sciences USSR). Institut fizicheskoy khimii Akademii nauk USSR (Institute of Physical Chemistry, Academy of Sciences UkrSSR)

SUBMITTED: October 13, 1959

Legend to Table 1:
a) carbon.

Таблица 1

Данные рентгенографического исследования углей

a) Уголь	L_c, Å		L_a, Å		d_{002}, Å	ρ, г/см³
	по (002)	по (004)	по (10)	по (11)		
A-950	8	8	21	22	3,99	1,91
A-1750	10	11	31	34	3,72	2,04
A-2000	12	13	38	45	3,54	2,13
A-2300	15	15	43	45	3,48	2,19
A-3000	22	23	51	52	3,40	2,24

Legend to Table 2:
a) carbon.

Предельные величины сорбции в сорбционном объеме

a) Уголь	CH_4		C_2H_6		H_2O	
	a_0', ммоль/г	a_0'', ммоль/г	a_0', ммоль/г	a_0'', ммоль/г	a_0', ммоль/г	a_0'', ммоль/г
A-950	5,84	0,518	4,79	0,548	27,1	0,458
A-1750	3,36	0,299	2,55	0,340	16,8	0,302
A-2000	1,27	0,112	0,711	0,077	4,45	0,080
A-2300	0,188	0,018	0,165	0,018	0,189	0,0034
A-3000	0,11	0,010	—	—	—	—

Card 6/9

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Study of the nature of the micropore...

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B101/B220

Legend to Table 3:
a) vapor; b) carbon; c) range of validity.

Константы уравнения изотерм адсорбции

a) Пар	b) Уголь	a_0, мм/г	W_0, см³/г	$E \cdot 10^3$	n	c) Интервал применимости p/p_s
C_6H_6	A- 850	4,62	0,410	0,773	1,00	$1,6 \cdot 10^{-4} - 2 \cdot 10^{-2}$
	A-1750	1,58	0,141	0,873	1,00	$5 \cdot 10^{-4} - 2 \cdot 10^{-2}$
	A-2000	0,57	0,051	2,07	1,00	$3 \cdot 10^{-4} - 4 \cdot 10^{-2}$
C_6H_{12}	A- 850	3,80	0,410	0,773	1,00	$7 \cdot 10^{-4} - 2 \cdot 10^{-2}$
	A-1750	0,91	0,098	0,873	0,975	$3 \cdot 10^{-4} - 2 \cdot 10^{-2}$
	A-2000	0,30	0,033	2,07	1,02	$1,5 \cdot 10^{-4} - 1 \cdot 10^{-2}$

Legend to Table 4:
a) carbon; b) components v_{mi}; c) intermediate pores v_i.

Объемы различных разновидностей пор углей в см³/г

a) Уголь	v_m	b) Сечение и v_{mi}		c) v_i	v_i
A- 850	0,474	0,410	0,064	0,043	0,518
A-1750	0,253	0,141	0,112	0,048	0,239
A-2000	0,000	0,051	0,000	0,053	0,113
A-2500	0,003			0,016	0,018
A-3000	0,000			0,010	0,010

Card 7/9

Study of the nature of the micropore...

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B101/B220

Legend to Table 6:
a) adsorbed substance; b) relative amount of adsorption; 1) formic acid; 2) acetic acid; 3) propionic acid; 4) butyric acid; 5) caproic acid; 6) phenol; 7) methylene blue; 8) Congo red.

a) Адсорбирующие вещества	a, мм/г A-850	A-1750	A-2000	b) Относительные величины адсорбции A-850	A-1750	A-2000
1 Муравьиная кислота	0,555	0,218	0,050	1,00	0,39	0,090
2 Уксусная кислота	0,805	0,315	0,075	1,00	0,39	0,093
3 Пропионовая кислота	1,297	0,488	0,118	1,00	0,38	0,091
4 Масляная кислота	1,705	0,697	0,190	1,00	0,41	0,111
5 Капроновая кислота	2,367	1,332	0,400	1,00	0,56	0,169
6 Фенол	2,035	1,280	0,285	1,00	0,63	0,140
7 Метиленовый голубой	1,015	0,243	0,055	1,00	0,24	0,054
8 Конго красный	0,088	0,0044	0,000	1,00	0,05	0,00

Card 8/9

Legend to Table 7:
a) carbon.

Адсорбция электролитов из водных растворов в мг-экв/г

a) Уголь	HCl H^+	HCl Cl^-	NaOH	NaCl Cl^-	NaCl OH^-
A- 850	0,307	0,303	0,001	0,034	0,030
A-1750	0,079	0,075	0,000	0,013	0,013
A-2000	0,006	0,007	−0,001	0,000	0,001
A-2500	0	0	0,001		0,000

Legend to Table 8:
a) carbon; b) X-ray surfaces; c) BET; d) Langmuir; e) lateral surfaces; f) basal surfaces.

Удельные поверхности в м²/г

a) Уголь	b) Рентг. s_m	s_T c)	s	c) БЭТ, C_6H_6 a_m	s	d) Ленгмюр, C_6H_6 a_m	s	e) Ленгм., C_6H_{12} a_m	s
A- 850	970	1310	2280	4,58	1130	5,12	1270	3,71	850
A-1750	810	840	1550	2,48	610	2,67	660	1,45	330
A-2000	480	750	1230	0,514	130	0,483	119	0,283	65
A-2500	650	610	1030	0,024	6			0,013	3
A-3000	350	360	710						

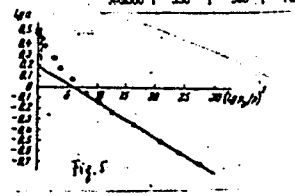

Fig. 5

Card 9/9

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S/062/61/000/001/003/016
B101/B220

AUTHORS: Dubinin, M. M., Zaverina, Ye. D., Kaverov, A. T., and Kasatochkin, V. I.

TITLE: Nature of the micropore structure of activated carbons. Communication 2. Activated carbons from polyvinylidene chloride

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, no. 1, 1961, 29-37

TEXT: The aim of the authors was to study the modification of the micropore structure of activated carbons brought about by physical, physicochemical, and chemical effects. The present report deals with the effect of thermal treatment on activated carbon produced from polyvinylidene chloride. The micropore structure of this carbon is not the result of the combustion of large amounts of carbon, but of the release of hydrochloric acid. Regarding the production of the carbon, Refs. 2,3 are referred to. Additional activation by CO_2 up to a loss in weight of about

Card 1/8

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10% was effected at 750°C. This specimen was termed B-750. Further thermal treatment resulted - corresponding to the temperature - in the specimens B-1300 (loss in weight 0.38%), B-1750 (loss in weight 4.00%), B-2300 (loss in weight 5.35%), and B-3000 (loss in weight 7.17%). Like in Ref. 1, the structure of the carbon crystallites was studied by means of X-rays, and L_c, L_a, d_{002}, and the radiographic density ϱ were determined (Table 1). Moreover, the isothermal lines of adsorption at 20°C were determined for benzene (Fig. 2) and cyclohexane (Fig. 3). Prior to the adsorption, the carbon was evacuated at 450°C and about 1.10^{-6} mm Hg. The substantially reduced adsorption of cyclohexane is attributed to the more complex structure of its molecules. The structural characteristics are indicated in Table 2. a_{mi} is the adsorption corresponding to the complete filling of the micropores. In the case of benzene, it occurs at a relative pressure $p/p_s = 0.175$, and in the case of cyclohexane, at $p/p_s = 0.158$: a_s denotes the total adsorption at $p/p_s = 1$, v_s the total volume of pores, v_{mi} the volume of the micropores, and v_i that of the intermediate pores calculated from the difference. The experimental isothermal lines were compared with the equation of the potential theory of adsorption:

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$a = (W_o/v)\exp\left[(-B(T^2/\beta^2)(\log p_s/p)^2\right]$ (1). W_o is the maximum adsorption volume, B a constant dependent on the size of the micropores, and β the affinity coefficient. The data calculated from (1) are indicated in Table 3. It was found (Fig. 5) that at a high relative pressure, the experimental data are lower than those obtained from Eq. (1). It is assumed that the reason is either ultraporosity or non-equilibrium. Referring to a paper of R. Franklin (Ref. 7), the structure of polyvinylidene chloride carbon is explained. The micropores are slit-shaped interstices between the crystallites or individual plane graphite lattices. They give room to hardly more than 2-3 layers of adsorbed molecules. On the assumption of 41 A^2 occupied area for one benzene molecule and of 38 A^2 occupied area for one cyclohexane molecule, a comparison between the specific surfaces calculated by X-ray analysis, sorption, and a bidisperse model (Table 4) results in the usability of a bidisperse model; the final clarification of the character of porosity is reserved for further investigations. The difference observed in specimen B-1750 regarding the adsorption of benzene and cyclohexane is attributed to a molecular

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screening effect. This is shown by comparison with a Linde MC-5A screen. S. G. Tolkachev and I. V. Uspenskiy are thanked for assistance. There are 5 figures, 5 tables, and 10 references: 7 Soviet-bloc and 3 non-Soviet-bloc.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences USSR); Institut goryuchikh iskopayemykh Akademii nauk SSSR (Institute of Mineral Fuels, Academy of Sciences USSR)

SUBMITTED: December 26, 1959

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

Таблица 1

Данные рентгенографического исследования углей

1 Уголь	L_c, Å		L_a, Å		d_{002}, Å	ρ, г/см³
	по (002)	по (004)	по (10)	по (11)		
B-750	7	8	21	23	3,85	1,98
B-1300	7	8	24	24	3,73	2,05
B-1750	9	9	25	26	3,52	2,16
B-2300	10	10	38	40	3,46	2,20
B-3000	17	19	48	50	3,40	2,24

Таблица 2

Структурные характеристики образцов углей серии *B*

1 Уголь	2 Пар	3 $a_{мп}$, мМ/г	$a_з$, мМ/г	4 $v_{мп}$, см³/г	5 $v_п$ см³/г	$v_з$ см³/г
B-750	C_6H_6	4,97	5,21	0,442	0,022	0,464
	C_6H_{12}	4,05	4,21	0,438	0,017	0,455
	H_2O	—	23,6	—	—	0,425
B-1300	C_6H_6	5,04	5,30	0,448	0,023	0,471
	C_6H_{12}	3,63	3,85	0,392	0,024	0,416
B-1750	C_6H_6	—	3,79	—	—	0,337
	C_6H_{12}	—	0,283	—	—	0,031
	H_2O	—	17,0	—	—	0,306
B-2300	C_6H_6	—	0,031	—	—	0,003
B-3000	C_6H_6	—	0,060	—	—	0,005

Legend to Table 1: 1) carbon.

Legend to Table 2: 1) carbon; 2) vapor; 3) a_{mi}; 4) v_{mi}; 5) v_{interm}

Card 5/8

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Nature of the micropore structure of...

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B101/B220

Legend to Figs. 2 and 3:
1) B-750; 2) B-1300; 3) B-1750; 4) B-2300

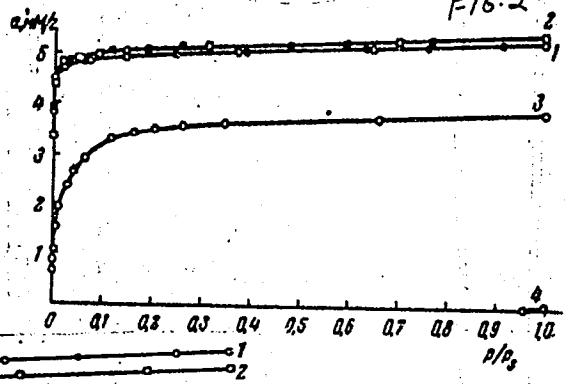

Fig. 2

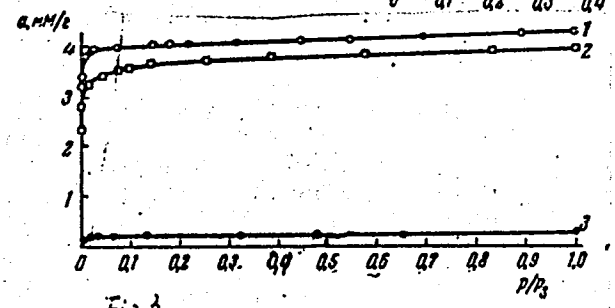

Fig. 3

Card 6/8

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Legend to Table 3:
1) vapor; 2) carbon;
3) range of validity.

Таблица 3

Константы уравнения изотермы адсорбции

1 Пар	2 Уголь	a_m, мМ/г	W_0, см³/г	B·10⁴	β	3 Интервал применимости p/p_s
C_6H_6	B-750	5,94	0,527	0,482	1,00	$3\cdot10^{-6}$—$6\cdot10^{-3}$
	B-1300	5,75	0,510	0,597	1,00	$3\cdot10^{-6}$—$1,3\cdot10^{-2}$
	B-1750	3,31	0,294	2,23	1,00	$4\cdot10^{-5}$—$6\cdot10^{-3}$
C_6H_{12}	B-750	4,79	0,517	0,482	1,07	$6\cdot10^{-5}$—$6\cdot10^{-3}$
	B-1300	4,65	0,503	0,597	0,94	$2\cdot10^{-5}$—$2\cdot10^{-3}$

Legend to Table 4:
1) carbon; 2) X-ray surfaces; 3) based on sorption at $a_m = a_{mi}$; 4) based on bidisperse model.

Таблица 4

Удельные поверхности углей в м²/г

1 Уголь	2 Рентгеновские поверхности			3 По сорбции при $a_m = a_{mi}$		4 По бидисперсной модели	
	S_B	S_T	S	C_6H_6	C_6H_{12}	S	ε
B-750	920	1350	2270	1220	870	980	0,246
B-1300	810	1300	2110	1250	830	840	0,02
B-1750	730	1030	1760	940	<45—90*		
B-2300	480	910	1390	<8			
B-3000	360	500	860	<8			

Card 7/8

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Legend to Fig. 5:
1) benzene; 2) cyclohexane.

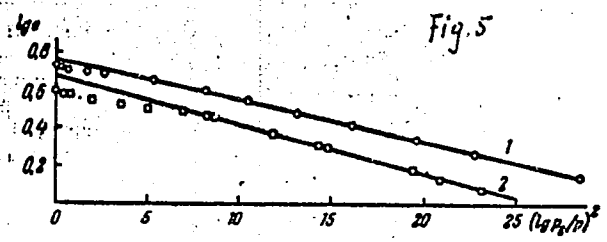

Fig. 5

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20638

15.9207 2209 also 1043, 1143, 1138 S/020/61/136/006/014/024
11.2210 B103/B203

AUTHORS: Korshak, V. V., Corresponding Member AS USSR, Kasatochkin, V. I., Sladkov, A. M., Kudryavtsev, Yu. P., and Usenbayev, K.

TITLE: Synthesis and properties of polyacetylene

PERIODICAL: Doklady Akademii nauk SSSR, v. 136, no. 6, 1961, 1342-1344

TEXT: The authors produced polyacetylene (PA) and studied its chemical structure and physical properties. They assumed that PA formed in the oxidation of bis-acetylene acetylenides of the type $HC{\equiv}C-(CH_2)_n-C{\equiv}CH$ which are said to be among the polymeric products not yet studied. They had already suggested a formation mechanism of PA in Ref. 3. In the present investigation, they produced the required acetylenide by passing acetylene through the ammoniacal solution of a salt of bivalent copper. Subsequently, the acetylenide was oxidized by an aqueous solution of potassium ferricyanide at boiling temperature. The authors assumed that the resulting black powder (containing 98% of C) was a mixture of polymer homologs of polyacetylene. On the basis of the temperature-dependent weight losses

Card 1/5

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(Fig. 1) and the electron paramagnetic resonance, they conclude that this product is a polymer with cumulene structure, probably $H-(C=C=C=C)_n-H$. PA showed high heat resistance, being transformed into graphite only at 2300°C. Below 2300°C, the carbon in PA remains in the form of polyacetylene. Graphite is also formed by long boiling of annealed PA samples in concentrated HCl. The authors point to the readiness of transformation of carbon atom chains of PA into graphite monolayers, and the corresponding transformation of valence forms under the action of HCl. The electric resistivity ρ measured by the zero method on an MTB(MTV) bridge dropped with rising temperature. This is explained by the concentration of crystalline copper due to thermal dissociation and the separation of terminal copper atoms from PA. ρ continued dropping at higher temperatures when copper had already evaporated and no graphite was formed. This indicated an extension of PA chains during the pyrogenetic synthesis which took place due to thermal dissociation and copper separation, as well as subsequent recombination of the resulting free polymeric radicals. The emf α was measured by the compensation method on a ППТВ (PPTV) high-resistance potentiometer. On the basis of the values obtained for ρ and α, the authors

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

PETRENKO, Ivan Gavrilovich; KASATOCHKIN, V.I., doktor khim. nauk, prof., otv. red.; TSIVENKO, V.I., red.; SUSHKOVA, L.A., tekhn. red.

[Isotopes in the geochemistry of caustobioliths] Izotopy v geokhimii kaustobiolitov. Moskva, Izd-vo Akad. nauk SSSR, 1962. 85 p. (MIRA 15:12)

(Caustobioliths—Analysis) (Isotopes)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KASATOCHKIN, V. I. (Moskva); YEGOROVA, O. I. (Moskva); GAVRILOVA, O. I. (Moskva)

Spectrochemical characteristics of the metamorphism of coal. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.6:192-195 N-D '62. (MIRA 16:1)

(Coal—Spectra) (Metamorphism(Geology))

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KHRENKOVA, T.M. (Moskva); KASATOCHKIN, V.I. (Moskva)

Electrical properties of the transitional forms of carbon. Izv. AN SSSR. Otd. tekh. nauk. Energ. i transp. no.1:85-88 Ja-F '63. (MIRA 16:5)

(Carbon—Electric properties)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

VONSYATSKIY, V.A.; ASEYEV, Yu.G.; KASATOCHKIN, V.I.; BERLIN, A.A.

Spectral study of polyphenylene and its block copolymers with p-diethynylbenzene. Izv. AN SSSR. Ser.khim. no.9:1654-1658 S '63. (MIRA 16:9)

1. Institut khimicheskoy fiziki AN SSSR i Institut goryuchikh iskopayemykh.
(Phenylene group) (Benzene) (Spectrum analysis)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KASATOCHKIN, V.I.; SLADKOV, A.M.; KUDRYAVTSEV, Yu.P.; SMUTKINA, Z.S.; KHRENKOVA, T.M.; KORSHAK, V.V.

Properties of polyacetylenes. Izv. AN SSSR Ser.khim. no.10:1766-1771 O '63. (MIRA 17:3)

1. Institut elementoorganicheskikh soyedineniy AN SSSR i Institut goryuchikh iskopayemykh.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

BERLIN, A.A.; KASATOCHKIN, V.I.; ASEYEVA, R.M. ; FINKEL'SHTEYN, G.B.

Polymers with conjugated bonds and heteroatoms in the conjugate chain. Part 29: Preparation and properties of the polymeric products of dehydrochlorination and carbonization of polyvinyl chloride and chlorinated polyvinyl chloride. Vysokom.soed. 5 no.9:1303-1308 S '63. (MIRA 17:1)

1. Institut khimicheskoy fiziki AN SSSR.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

YEGOROVA, O.I.; MARKOV, L.K.; KASATOCHKIN, V.I.

Spectral investigation of asphaltenes obtained in coal hydrogenation. Khim. i tekh. topl. i masel 8 no.5:31-34 My '63. (MIRA 16:8)

1. Institut goryuchikh iskopayemykh, Vostochno-Sibirskiy filial Sibirskogo otdeleniya AN SSSR.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

L 9873-63 EPF(c)/EWT(1)/EDS AFFTC/ASD Pr-4 GG
ACCESSION NR: AP3000427 S/0076/63/037/005/1162/1164

AUTHOR: Nedoshivin, Yu. N.; Kasatochkin, V. I.

57

TITLE: Electronic paramagnetic resonance in chemically carbonized materials

SOURCE: AN SSSR. Zhurnal fizicheskoy khimii, v. 37, no. 5, 1963, 1162-1164

TOPIC TAGS: dextrose, thermal carbonization, spin-screen relaxation, electron paramagnetic resonance

ABSTRACT: The spin-centers localized in the structure of products obtained by chemical carbonization (with sulfuric acid) of chemically carbonized dextrose differ from those of thermally carbonized dextrose products. "Integration" of the first derived absorption curves was used; the spin-relaxation time was determined by the progressive saturation method with improvements by A. A. Manenkov; work was done at room and at liquid nitrogen temperatures. The greater spin-screen relaxation time, characteristic of the spin-centers discovered, was decreased by the presence of oxygen, which reduced the saturation, part of the spin-spin bond energy being transmitted to the O. The observed

Card 1/2

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L 9873-63
ACCESSION NR: AP3000427

absorption lines of electron paramagnetic resonance may be used for evaluating spin-screen relaxation times in the 10 sup -5 to 10 sup -3 sec. range. Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 19Jun63 ENCL: 00

SUB CODE: 00 NR REF SOV: 000 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

SHISHOVA, O.A.; KLEMINA, Ye.A.; KASATOCHKIN, V.I.

Rate of the intestinal absorption of amino acid mixtures.
Fiziol. zhur. 49 no.12:1461-1467 D '63.
(MIRA 17:12)

1. From the Department of Biochemistry, Institute of Nutrition, Academy of Medical Sciences, U.S.S.R., and Department of General Chemistry, I.M. Sechenov First Medical Institute, Moscow.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

S/020/63/149/003/026/028
B192/B102

AUTHORS: Kasatochkin, V. I., Finkel'shteyn, G. B.

TITLE: Homogeneous and heterogeneous crystallisation of carbon

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 149, no. 3, 1963, 629-632

TEXT: The isothermal crystallization mechanism of carbon is investigated by means of X-ray analysis in a temperature range from 2000° to 3500°K. For sugar coke two series of experiments with different initial quantities (0.8 g and 22 g) were conducted. Within one series the asymmetry of the crystal maximum (002) grows with increasing temperature and with increasing duration of treatment, a fact which points to heterogeneous crystallisation. The series with 22 g initial quantity shows higher maxima than that with 0.8 g. This is interpreted by the assumption that the crystallisation is the result of precipitation from a gaseous phase which flows more easily out of smaller samples than larger ones. The layer distances d_{002} were determined for sugar coke, coal-tar pitch and natural graphite in dependence of the temperature. The values for graphite

Card 1/2

SUBMITTED: October 27, 1962

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

ACCESSION NR: AP3003517 S/0020/63/151/001/0125/0126

AUTHOR: Kasatochkin, V. I.; Yegorova, O. I.; Aseyev, Yu. G.

TITLE: On the atomic structure of carbon in polyyne form

SOURCE: AN SSSR. Doklady, v. 151, no. 1, 1963, 125-126 and Fig. 2 on insert following p. 126

TOPIC TAGS: acetylene, acetylene condensation, copper acetylide oxidation, polyynes, polyyne carbon chain, cumulene, cumulene carbon chain, polyene, polyene carbon chain, conjugation, x-ray diffraction, infrared spectra, cross-linking, ordered structure, nonordered structure

ABSTRACT: A study is made of the x-ray diffraction patterns and infrared spectra of carbon products of acetylene condensation prepared at the Institut elementoorganicheskikh soyedineniy (Institute of Organoelemental Compounds). The products were obtained by the reaction of acetylene with an aqueous bivalent Cu solution and the subsequent oxidation of the resulting polymeric cupric

Card 1/3

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

ACCESSION NR: AP3003517

acetylide with potassium ferricyanide. The following is the mechanism postulated for the formation of the polyynes:

$4HC{=}CH + 2\,Cu = HC{=}C{-}C{=}CH + 2HC{=}CCu + 4H;$

$4HC{=}C{-}C{=}CH + 2Cu{=}HC{=}C{-}C{=}C{-}C{=}C{-}C{=}CH + CH{=}C{-}C{=}CCu + 4H.$

The x-ray pattern shows two discrete sharp interference bands which correspond to Bragg's periods of 3.90 and 2.62 Å, respectively. The first band is attributed to intermolecular interference in a bundle of parallel, closely packed linear polyyne chains. The period corresponding to the second band, which may be attributed to intramolecular interference in the carbon chain, was somewhat greater than the sum of the triple and single carbon-carbon bond lengths in a biacetylene molecule. The presence in the x-ray pattern of a background of independent scattering and a wide interference halo revealed a slightly ordered portion of the carbon chains with an average intermolecular distance of approximately 4.0 Å. The infrared spectra of the products contained absorption bands characteristic both of polyyne and cumulene structures in the carbon chain. The polyyne structure was revealed by the strong absorption band of the monosubstituted triple bond system at 2100 cm^{-1} and the

Card 2/3

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

ACCESSION NR: AP3003517

disubstituted triple bond system at 2200 cm^{-1}. Bands characteristic of triple bonds, corresponding to ≡ CH at the end of the carbon chain were also present. The structure of cumulene carbon chains revealed a strong absorption band at 1950 cm^{-1} and a weak band at 1060 cm^{-1}, both corresponding to cumulated double bonds. An additional wide band with a maximum at 1640 cm^{-1} was attributed to "cross-linking" of some polyyne chains to form a three-dimensional structure of the polyene type. It was concluded that the polymeric carbon products were linear macromolecules with a polyyne and (in part) cumulene structure brought together in molecular bundles of parallel chains. Part of the macromolecules are cross-linked to form a nonordered three-dimensional conjugated polyene structure. Orig. art. has: 2 figures.

ASSOCIATION: Institut goryuchikh iskopayemykh (Institute of Mineral Fuels)

SUBMITTED: 01Mar63 DATE ACQ: 30Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 002 OTHER: 003

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KASATOCHKIN, V.I.; SLADKOV, A.M.; ASEYEV, Yu.G.; KUDRYAVTSEV, Yu.P.; YEGOROVA, O.I.; KORSHAK, V.V.

Infrared spectra of polyynes. Dokl. AN SSSR 153 no.2:346-349 N '63. (MIRA 16:12)

1. Institut goryuchikh iskopayemykh AN SSSR i Institut elementoorganicheskikh soyedineniy AN SSSR. 2. Chlen-korrespondent AN SSSR (for Korshak).

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KUZNETSOV, Viktor Vasil'yevich; KASATOCHKIN, V.I., retsenzent; KRETININ, S.A., retsenzent; PALKINA, N.A., retsenzent; KONDRASHKOVA, S.F., red.

[Physical and colloid chemistry] Fizicheskaia i kolloidnaia khimiia. Moskva, Vysshaia shkola, 1964. 385 p. (MIRA 17:5)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

LUKIANOVICH, V. M.; KASATOCHKIN, V. I.; NEDOSHIVIN, Yu. N.; FINKELSHTEYN, G. B.

"Elektronenmikroskopische Untersuchung der Russe."

report submitted to 3rd European Regional Conf, Electron Microscopy, Prague, 26 Aug-3 Sep 64.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

ACCESSION NR: AP4041172 S/0062/64/000/006/1132/1132

AUTHOR: Sherle, A. I.; Aseyev, Yu. G.; Frankevich, Ye. L.; Berlin, A. A.; Kasatochkin, V. I.

TITLE: Formation of a tetracyanoethylene chelate polymer

SOURCE: AN SSSR. Izv. Seriya khimicheskaya, no. 6, 1964, 1132

TOPIC TAGS: tetracyanoethylene, organic semiconductor, semiconducting polymer, chelate polymer, copper tetraacetylenide

ABSTRACT: Copper tetraacetylenide (I) has been prepared, identified, and its semiconducting properties studied. Salt I was obtained in acetonitrile and with lower yield in nitrobenzene. Identification was made by elemental analysis and UV and IR spectroscopy. At below 100C, electrical conductivity (δ) in vacuum was described by

$$\delta = 10^{-0.6} \exp(-5670/RT), \quad \delta_{300k} = 10^{-4.7} \text{ ohm}^{-1} \text{ cm}^{-1}.$$

At higher temperatures δ drops irreversibly and after heating to 150C becomes $\delta = 10^{0.8} \exp(11900/RT)$, $\delta_{300k} = 10^{-7.8}$ ohm^{-1} cm^{-1}.

Card 1/2

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

[illegible]T(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL WW/RM

[illegible]

[illegible] A. A. Aseyeva, R. M. Smutkina, [illegible]

[illegible] kinetics of thermal dissociation of chlorine-containing poly-

[illegible]

[illegible] poly-

[illegible]

[illegible] deals with results [illegible] of thermal

[illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

ACCESSION NR: AP5000483

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

of the relative dissociation rate and decrease of activation energy, the polymers

ped in the following order: PVC, CHPVC, PVDC, CP, with activation

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

GORSHKOVA, G.N.; CHUBAROVA, M.A.; UKHIN, L.Yu.; SLADKOV, A.M.; KASATOCHKIN, V.I.

Infrared and ultraviolet absorption spectra of substituted diphenylacetylenes. Zhur. fiz. khim. 38 no.10:2485-2487 O '64. (MIRA 18:2)

1. Institut goryuchikh iskopayemykh AN SSSR.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

L 9900-65 EWT(1)/EPA(s)-2/EWG(k)/EWT(m)/EWP(j)/T Pe-6/Pe-4/Pt-10 ESD(dp)/

[illegible]

[illegible]dryavtsev, Yu. P.; Sladkov, A. M.; [illegible]

[illegible]

[illegible] Study of the properties and structure of carbyne

[illegible] AN SSSR. Doklady*, v. 158, no. 2, 1964, 389-392

TOPIC TAGS: organic semiconductor, semiconducting polymer, dehydro-chlorination, polyacetylene

[illegible] Polymers containing conjugated polyyne groups in the back-[illegible] been studied by IR and EPR spectroscopy. The polymer sam-[illegible] prepared by dehydrochlorination [illegible] chlo-[illegible] sodium amide in [illegible] sodium amide [illegible]

[illegible] of the samples were [illegible] with [illegible] except that of sodium [illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

L 8900-65
ACCESSION NR: AP4045633

[illegible]ding to the C≡C bond were found. It was concluded that poly(vinyl-[illegible]-[illegible]ride) dehydrochlorination is a suitable preparative method [illegible] or, at least, for fragments thereof. [illegible] of the samples [illegible] ESR signal, with a g-factor [illegible] of a free [illegible] line width of [illegible] the degree of [illegible] and 1 figures.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii [illegible] (Institute of Organoelemental Compounds, Academy of Sciences)

[illegible] 30Apr64 ATD PRESS: 3109 ENCL: 00

[illegible] NO REF [illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

GORSHKOVA, G.N.; CHUBAROVA, M.A.; SLADKOV, A.M.; UKHIN, L.Yu.; KASATOCHKIN, V.I.

Infrared and ultraviolet absorption spectra of substituted ethynylbenzenes and diethynylbenzenes. Zhur. fiz. khim. 38 no 10:2513-2516 O '64.

Infrared and ultraviolet absorption spectra of substituted diphenylbutadiynes. Ibid.:2516-2520

(MIRA 18:2)

1. Institut goryuchikh iskopayemykh Instituta elementoorganicheskikh soyedineniy AN SSSR.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(f)/T Pc-4/Pr-4/Ps-4/Pt-10 RPL/

0843/0846

me properties of polybenzimidazole

insert facing p. 844

ductor polymer

comparative investigation of the structure and proper-

and diphenyl

at up to

I

and

II

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

[illegible]

[illegible] changes in [illegible]

[illegible] at elevated [illegible]

[illegible] talline in Polymer I and amorphous in Polymer II) remains intact. The [illegible] specifi[illegible] [illegible] that the molecular [illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

ACCESSION NR: AP5000916

SUBMITTED: 14Jul64 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 002 OTHER: 003 ATD PRESS: 3152

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

MITROFANOV, Pavel Petrovich; KASATOCHKIN, V.I., prof., reviewer;
FEDOROVA, T.P., red.

[Physical chemistry] Fizicheskaia khimiia. Moskva, Vysshaia shkola, 1965. 302 p. (MIRA 18:3)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

SLADKOV, A.M.; UKHIN, L.Yu.; GORSHKOVA, G.N.; CHUBAROVA, M.A.; MAKHSUMOV, A.G.; KASATOCHKIN, V.I.

Synthesis and spectra of iodo and bromoacetylene derivatives.
Zhur.org.khim. 1 no.3:415-421 Mr '65. (MIRA 18:4)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

ASEYEVA, R.M.; ASEYEV, Yu.G.; BERLIN, A.A.; KASATOCHKIN, V.I.

Spectral study of the products of oxidation of high-molecular conjugate polyenes. Zhur. strukt. khim. 6 no.1:47-52 Ja-F '65. (MIRA 18:12)

1. Institut khimicheskoy fiziki AN SSSR. Submitted November 19, 1963.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KLEMINA, Ye. A. ; SHISHOVA, O.A.; KASATOCHKIN, V.I.

Regulation of amino acid relationships in the intestines. Vop. pit. 24 no. 6:31-35 N-D '65 (MIRA 19:1)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KASATOCHKIN, V.I.; LARINA, N.R.; YEGOROVA, O.I.

Common features of the structure and properties of humic substances in peat and coals. Zhur.prikl.khim. 38 no.9:2059-2066 S '65. (MIRA 18:11)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

Zhurnal fizicheskoy khimii, v. 39, no. 1,

graphite, aromatic carbon, carbon ESR spectrum, electron spin
black, polyvinylchloride, unpaired electron carbonization,

detector was employed for the ESR
graphitizing carbon (exemplified by thermal black), there are two regions of change
concentration of unpaired electrons and in the ESR line width in relation to
the thermal treatment; these regions correspond to two stages

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

in the concentration of [illegible]
the temperature of the thermal treatment; these regions correspond to two stages
[illegible] high-temperature carbonization ($T_{tr} < 1750C$) and homogeneous
[illegible]

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

L 41392-65

ACCESSION NR: AP5008912

carbon into the crystal lattice of graphite. Orig. art. has: 2 figures

ASSOCIATION: Moskovskiy institut goryuchikh iskopayemykh (Moscow institute of

NO REF SOV: 007 OTHER: 016

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

L 13032-66 EWT(m)/EWP(j)/T RM

ACC NR: AP5028581 SOURCE CODE: UR/0076/65/039/011/2695/2700

AUTHOR: Gorshkova, G. N.; Chubarova, M. A.; Sladkov, A. M.; Luneva, L. K.; Kasatochkin, V. I.

ORG: Moscow Institute of Mineral Fuels (Moskovskiy institut goryuchikh iskopayemykh)

TITLE: Spectra of elemental-organic monomers and polymers containing double and triple bonds

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 11, 1965, 2695-2700

TOPIC TAGS: IR spectrum, UV spectrum, polymer, organosilicon compound, organotin compound, organogermanium compound, organomercury compound, organic phosphorus compound

ABSTRACT: IR and UV spectra were studied for monomeric silicon, germanium, mercury and phosphorus organic compounds and the IR spectra of related polymeric silicon, germanium and tin organic compounds with C=C and C≡C bonds. The IR spectra were taken using an IKS-14 spectrophotometer in the 4000-400 cm^{-1} region on specimens in the form of pellets with KBr. The spectra of the three monomers containing phenylethynyl groups displayed C≡C valence vibration band. The position and the in-

Card 1/2 UDC: 543.42+547

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

L 13032-66

ACC NR: AP5028581

tensity of this band was somewhat dependent on the element: dimethyldi-(phenylethynyl)silane at 2159 cm^{-1} was very intense; ethyltri(phenylethynyl)germanium at 2160 cm^{-1} was less intense and di(phenylethynyl) mercury at 2139 cm^{-1} was of medium intensity. In diphenyldiethynyl silane, the C≡C bond occurs in the 2030-2040 cm^{-1} region. This shows the effect of the benzene substituent on the position of the C≡C bond. In the former three compounds the shift of the band toward the higher frequency region is caused by the shift of electrons from the nucleus to the C≡ bond and thus strengthening of the bond. Ultraviolet spectra were measured on an SF-4 instrument using cyclohexane as the solvent. An attempt is made to find the relationship between the position and the intensity of the principal maxima on the molecular structure and the nature of the element. Orig. art. has: 3 figures, 1 table.

SUB CODE: 07,20/ SUBM DATE: 22Jul62/ ORIG REF: 002/ OTH REF: 000

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

L 60048-65 EWG(i)/EWP(e)/EWT(m)/EPF(c)/EWP(i)/[illegible]

[illegible] NR: AP5017959 UR/0062/65/[illegible]

541.124

AUTHOR: Kasatochkin, V. I.; Berlin, A. A.; Smutkina, Z. S.; Asevev, Yu. G.; [illegible]

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 6, 1965, 1003-1009

TOPIC TAGS: polyvinyl chloride, polyvinylidene chloride, polymer thermal property, polymer carbonization

[illegible] Polyvinyl chloride (PVC), chlorinated [illegible] (PVC), poly- [illegible]

[illegible] were studied by meas[illegible]

[illegible] studied. [illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

L 60048-65

ACCESSION NR: AP5017959

4

[illegible] metacres, this peak corresponds to the destruction of the side bonds [illegible] aromatic systems at a [illegible]

[illegible] which changes into a condensed [illegible]

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

bonization of PVDC involves the formation of chlorine-containing conjugated
structures containing triple and cumulative double bonds. The generation

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

Source: Vysokomolekulyarnyye soyedineniya, v. 7, no. 7, 1965, 1147-1153

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

Card 3/3

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KASATONOV, V., admiral

We carry out the decisions of the fourth session of the Supreme Soviet of the U.S.S.R. Komm.Vooruzh.Sil 1 no.2:12-16 O '60. (MIRA 14:8)

1. Komanduyushchiy Chernomorskim flotom.
(Russia--Navy) (Retired military personnel--Employment)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

ACC NR: AN7002251 SOURCE CODE: UR/9008/67/000/027/0004/0004

AUTHOR: Gorshkov, S. G.; Grishanov, V. M.; Kasatonov, V. A.; Sergeyev, N. D.; Borzov, I. I.; Kotov, P. G.; Ivanov, V. N.; Fominykh, V. A.; Butoma, B. Ye.; Lobov, S. M.; Orel, A. Ye.; Chursin, S. Ye.; Amel'kov, N. N.; Andreyev, V. A.; Chabanenko, A. T.; Anisimov, I. A.; Smirnov, N. I.; Volosatov, B. M.; Slivin, Ye. M.; Noskov, A. K.; Karaganov, L. I.; Sutyagin, B. V.; Sukachev, K. P.; Sukhov, S. M.; Vashantsev, V. I.; Tkachenko, T. I.; Napitukhin, V. A.; Smirnov, M. S.; Gorokhov, A. S.

ORG: none

TITLE: Death of Vice-admiral V. P. Razumov

SOURCE: Krasnaya avezda, no. 27, 01 Feb 67, p. 4, col. 6

TOPIC TAGS: military personnel, scientific personnel

ABSTRACT:

Engineer Vice-admiral V. P. Razumov is dead. He was born in 1909. In the postwar period he served with the Northern fleet and the main administration of the Navy.

SUB CODE: 05/ SUBM DATE: none / ATD PRESS: 5112

Card 1/1 UDC: none

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

KASATONOV, V.A., admiral

In close unity. Mor. sbor. 47 no.6:3-9 Je '64. (MIRA 18:7)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010009-1

L 44553-66 EWT(d)/EWT(m)/EWP(v)/EWP(k)/EWP(h)/EWP(l) IJP(c) JD/WW

ACC NR: AP6012613 SOURCE CODE: UR/0182/66/000/004/0044/0046

34
33
B

AUTHOR: Kasatonov, V. F.; Matrosov, G. A.; Saltykov, A. G.

ORG: none

TITLE: Improvements in the technology of the production of hollow forgings by means of hydraulic and steam-hydraulic presses

18

SOURCE: Kuznechno-shtampovochnoye proizvodstvo, no. 4, 1966, 44-46

TOPIC TAGS: metal forging, forge press, hot forging, metal industry

ABSTRACT: Owing to the conical and spherical shapes of mold bottoms, the production of hollow forgings normally involves the wastage of as much as 5-7% of ingot metal. In this connection, during 1963-1964 the Bol'shevik Plant carried out a study of the possibility of producing hollow forgings of the centering-ring type without having to scrap the bottom part of the ingot. It was found that this can be accomplished by using a core punch with a diameter that is 50 mm greater than the diameter of the cone-shaped part of the ingot bottom. Then the wastage of metal can be reduced to 1.42-1.48% and the labor-consuming as well as relatively unsafe operation of trimming the ingot bottom can be eliminated. The resulting blanks can be

UDC: 621.73.046

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ACC NR: AP6012613

readily forged in a 3000-ton steam-hydraulic press without requiring special additional press tools. Analysis of the hollow forgings thus produced revealed absence of sulfur accumulations, blowholes, vacancies and nonmetallic inclusions. This new technique can be employed to forge ingots weighing up to 10 tons each and produces metal savings amounting to 3-5% of the weight of the ingot. Orig. art. has: 1 table.

SUB CODE: 13, 11/ SUBM DATE: none/

Card 2/2 blg

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(SALIVATION,
hypersalivation in teeth dis.)
(TEETH, diseases,
with hypersalivation)

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COUNTRY : USSR
CATEGORY : [illegible]

ABS. JOUR. : RZhBiol., No. 14 1959, No. 63225

AUTHOR : Kasaurov, Yu.
INST. : --
TITLE : Improving the Health of Aspen Forests of Bashkiriya

ORIG. PUB. : S. kh. Bashkirii, 1957, No. 7, 27-30

ABSTRACT : No abstract

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Periodic phenomena during anodic solution of nickel. A. L. Rotinyan and I. A. Kasavin (Inst. Nickel, Cobalt & Tin Ind., Leningrad). *Zhur. Fiz. Khim.* 24, 100-10 (1950).—Potential oscillations occur in a Ni anode immersed in $NiSO_4$ 79, Na_2SO_4 40, H_3BO_3 20 g./l. only if either NaCl (e.g., 3 g./l.) or H_2SO_4 (to pH 0.3) is added to the soln. The amplitude is, e.g., 0.7 v. and the period is, e.g., 75 sec. at 18° and 10 sec. at 50°. Often, oscillations start after some hrs. of electrolysis. The oscillations die down within a few hrs., if the anode was previously heated in air to 900° or in H to 600° or 900°. No oscillations occur if the anode was heated in N to 600–1200° or was made of remelted electrolytic Ni. Superimposed a.c., when its intensity was greater than that of the d.c., increased the period of oscillation and made the oscillation less sym. At 50° the effect of a.c. is smaller than at 22°. A passivating film on the anode cannot explain these results. Presumably, these periodic phenomena are detd. by the structure of the anode and the H concn. in it.

J. J. Bikerman

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***Periodic Phenomena During Anodic Solution of Nickel.** A. L. Rotinyan and I. A. Kasayin (*Zhur. Fiz. Khim.*, 1950, **24**, (1), 106–110; *C. Abs.*, 1950, **44**, 4804).—[In Russian]. Potential oscillations occur in a nickel anode immersed in $NiSO_4$ 79, Na_2SO_4 40, H_3BO_3 20 g./l. only if either NaCl (e.g. 3 g./l.) or H_2SO_4 (to pH 0·3) is added to the solution. The amplitude is, e.g. 0·7 V. and the period is, e.g. 75 sec. at 18° C. and 10 sec. at 50° C. Often, oscillations start after some hours of electrolysis. The oscillations die down within a few hours, if the anode was previously heated in air to 900° C. or in hydrogen to 600° or 900° C. No oscillations occur if the anode is heated in nitrogen to 600°–1200° C. or is made of remelted electrolytic nickel. Superimposed A.C., when its intensity is greater than that of the D.C., increases the period of oscillation and makes the oscillation less symmetrical. At 50° C. the effect of A.C. is smaller than at 22° C. A passivating film on the anode cannot explain these results. Presumably, these periodic phenomena are determined by the structure of the anode and the hydrogen concentration in it.

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