MEDVEDYUK, Nikolay Ivanovich; NARYSHKIN, A.A., nauchn. red.; MAKSIMOVA, Yu.M., red.

[Metal fitting and sheet-metal work] Slesarno-zhestianitskie raboty. Izd.5., perer. i dop. Moskva, Vysshaia shkola, 1965. 374 p. (MIRA 18:8)

KOVALEVSKIY, Ivan Ivanovich, kand. tekhn.nauk; Prinimal uchastiye SOSNIN, Yu.P., kand. tekhn. nauk; MAKSIMOVA, Yu.M., red.; BARANOVA, N.N., tekhn. red.

[Stove work] Pechnye raboty. Izd.4., perer. i dop. Moskva, Proftekhizdat, 1963. 237 p. (MIRA 16:7)
(Stoves)

MAKSIMOVA, Z.A.

Representatives of the genus Dechenella Kayser from Devonian deposits of the Urals. Ezhegod.Vses.paleont.ob-va 14:213-236 '53. (MLRA 8:3)

(Ural Mountains--Trilobites)

BELYAKOV,N.A. [deceased]; BUL'VANKER,E.Z.; DUBATOLOV,V.N.; YELTYSHEVA,R.S.; KRISHTOFOVICH,A.N.,[deceased]; MAKSIMOVA,Z.A.; MODZALEVSKAYA,Ye.A.; MELESHCHENKO,V.S.; NEKHOROSHEV,V.P.; NALIVKIN,B.V.; NOVOZHILOV,N.I.; OBRUCHEV,D.V.; RZHONSNITSKAYA,M.A.; YANOV,E.N.; SPIRINA,N.I.,redaktor; GUROVA, O.A., tekhnicheskiy redaktor

[Field atlas of characteristic complexes of fauna and flora of Devonian deposits of the Minusinsk Basin] Polevoi atlas kharakternykh kompleksov fauny i flory devonskikh otlozhenii Minusinskoi kotloviny, Sost. N.A. Beliakov, i dr. Pod red. M.A.Rzhonsnitskoi i V.S.Meleshchenko, Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geologii i okhrane nedr, 1955. 139 p. (MLRA 9:1)

1. Leningrad. Vsesoyuznyy geologicheskiy institut.
(Minusinsk Basin--Geology, Stratigraphic--Devonian)

MAKSIMOVA, Z.A.; CHERNYSHEVA, N.Ye., redaktor; NIKITINA, V.N., redaktor izdatel'stva; GUROVA, O.A., tekhnicheskiy redaktor.

[Trilobites of the middle and upper Devonian of the Urals and the Mugodzhar Hills] Trilobity srednego i verkhnego devona Urala i severnykh Mugodzhar. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhr.nedr. 1955. 262 p. (Leningrad, Vsesoiuznyi geologicheskii institut. Trudy, vol.3) (MLRA 10:1)
(Ural Mountains--Trilobites) (Mugodzhar Hills--Trilobites)

MAKSIMOVA, Z.A.

Second session of the All-Union Paleontological Society. Inform. sbor. VSEGEI no.4:168-170 '56. (MLRA 10:4)
(Paleontology--Societies)

USSR / Farm Animals. Cattle

Abs Jour: Ref Zhur-Biol., No 3, 1958, 12087

Author : Maksimova Z. A.
Inst :
Title : The Effect of Feeding Conditions on the Growth and Development of Purebred and Crossbred Heifers (Vliyaniye uslovii kormleniya na rost i razvitiye chistoporodnykh i pomesnykh telok)

Orig Pub: Sb. rabot Leningr. vet. in-ta, 1956, vyp. 18, 85-91

Abstract: In the 4 groups of calves of the East Friesian breed (2 animals in each group), which were fed different amounts of fat in their rations, the digestibility of substances, utilization of N, Ca, P, indices of blood, and carcass division, were determined. It was established that the high content of milk fat in the calves' rations promotes digestibility of the nutritive substances and their better utilization.

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MAKSIMOVA, Z. A. Cand Agr Sci -- (diss) "The Influence of Feeding Conditions on the Growth and Development of Pure- and Mixed-Breed Calves." Len, 1957. 19 pp 20 cm. [illegible] (Len Veterinary Inst of the Min of Agriculture USSR), 120 copies (KL, 25-57, 116)

MAKSIMOVA, Z.A.

Morphology of the genus Brachymetopus McCoy (Trilobites). Ezhegod. Vses. paleont. ob-va 14:58-63 '57. (MIRA 11:4)
(Trilobites)

MAKSIMOVA, Z.A.

Finding of the shield and ten body segments of a representative of the superfamily Phacopoides. Ezhegod. Vses. paleont. ob-va 16:216-217 '57. (MIRA 11:4)

(Trilobites)

MAKSIMOVA, Z.A.

Second session of the All-Union Paleontological Society. Ezhegod. Vses. paleont. ob-va 16:291-295 '57. (MIRA 11:4)
(Paleontology)

MAKSIMOVA, Z.A.

Account of the activitites of the All-Union Paleontological Society for 1955. Ezhegod. Vses. paleont. ob-va 16:295-297 '57.
(MIRA 11:4)

(Leningrad--Paleontological societies)

MAKSIMOVA, Z. I.

Esters of boric acid in the Friedel-Crafts reaction. V. K. Kuskov, B. M. Sheiman, and Z. I. Maksimova (State Univ., Moscow). *Zhur. Obshchei Khim.* 27, 1454-8(1957). — Esters of boric acid can be used in the Friedel-Crafts form of alkylation of aromatic compds. such as C_6H_6, MePh, *m*-xylene, $PhCl$, and PhOH. The mixt. of $(RO)_3B$ and the aromatic compd. is treated at 20-5° with $AlCl_3$ and the mixt. heated 0.5-14 hrs. at 45-100°, depending on the reactivity of the substrate. Yields of alkylated products range up to 80-2%, although mainly 40-65% yields are obtained. The esters used included $(EtO)_3B$, $(PrO)_3B$, $(BuO)_3B$, (iso-$BuO)_3B$, (iso-$AmO)_3B$, tris(2-ethylhexyl)borate, $(C_8H_{17}O)_3B$, $(C_6H_{11}O)_3B$, $(PhCH_2O)_3B$, $(CH_2:CHCH_2O)_3B$, $(ClCH_2CH_2O)_3B$, and ethylene glycol borate. The esters were prepd. by azeotropic dehydration of ROH and $B(OH)_3$ in C_6H_6 with anhyd. $CuSO_4$. Thus were reported: 38% $(EtO)_3B$, b. 117-20°, d_{20} 0.8660, n_D^{20} 1.3775, and tris(2-ethylhexyl)borate, b_4 183-5°, 0.8619, 1.4385. Heating 9.4 g. $(PrO)_3B$ with 9 g. $AlCl_3$ in 65 ml. $PhNO_2$ 3.5 hrs. at 60-75° gave no HCl or PrCl. While predominantly *p*-isomers of alkylated products were obtained, the normally expected *o*-derivs. were also found. Prolonged reaction of C_6H_6 with 3 moles $AlCl_3$ and 1 mole $(EtO)_3Al$ gave 47.2% EtPh and 4.6% Et-C_6H_4; $(MeO)_3Al$ or $(PrO)_3Al$ failed to react. G. M. K.

5
4E4j
4E3d

BUBLICHENKO, N.L.; DUBATOLOV, V.N.; MAKSIMOVA, Z.A.; SPASSKIY, N.Ya.

Paleontological basis for the stratigraphy of Rudnyy Altai.
Trudy Alt.GMNII AN Kazakh.SSR 6:3-39 '58. (MIRA 12:1)
(Altai Mountains--Paleontology)

3(5)
AUTHORS: Maksimova, Z. A., Organova, N. M. SOV/20-128-3-44/58

TITLE: First Discovery of Remains of Devonian Fauna in the West Primor'ye

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 3, pp 594-595 (USSR)

ABSTRACT: In the range of the Sikhote-Alin' geosyncline, no paleontologically characterized deposits of the Middle Paleozoic have hitherto become known though they had been assumed there. The 2nd author found, in 1958, remains of trilobites: Calymene ex gr. blumenbachi Brongn. and Cal. sp. (determinations by Z. A. Maksimova) in the Rayon of Grodekovo. Besides, she found there Pelecypoda of the genera Aviculopectae and Pseudomonotis (determinations by V. M. Kulikov). These organic residues were found in tuffites, higher up than the 1st intermediate layer of aleurolites and loamy slate. In spite of an unsatisfactory state of preservation, the generic determination of the trilobites should be correct (Fig 1). This figure also shows related forms

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of Calymene for comparison: Cal. macrocephala Z. Max. in litt. (Fig 1 b). Deliberations are made on the related forms and their propagation (yields gained by S. A. Ivanov and Yu. M. Samusin, V. A. Bobrov et al). There is 1 figure.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut (All-Union Scientific Geological Research Institute)
Dal'nevostochnyy filial Akademii nauk SSSR (Far East Branch of the Academy of Sciences, USSR)

PRESENTED: May 13, 1959, by D. V. Nalivkin, Academician

SUBMITTED: April 21, 1959

MAKSIMOVA, Zlata Aleksandrovna; NALIVKIN, D.V., akademik, glavnyy red.; BUBLICHENKO, N.L., doktor geol.-mineral.nauk, otv.red.; BALASHOVA, Ye.A., kand.geol.-mineral.nauk, red.; ABKEVICH, P.L., red.izd-va; IVANOVA, A.G., tekhn.red.

[Paleontological basis of Paleozoic stratigraphy in the Rudnyy Altai] Paleontologicheskoe obosnovanie stratigrafii paleozoia Rudnogo Altaia. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr. No.7. [Devonian and Carboniferous trilobites of the Rudnyy Altai] Devonskie i kamennougol'nye trilobity Rudnogo Altaia. 1960. 122 p. (MIRA 13:12)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata. Altayskiy gorno-metallurgicheskiy nauchno-issledovatel'skiy institut.
(Altai Mountains--Trilobites)

MAKSIMOVA, Z.A.

Phylum Arthropoda. Class Trilobita. Trudy SNIIGGIMS no.21: 188-189 '62. (MIRA 16:12)

MAKSIMOVA Z.I.

KUSKOV, V.K.; SHMYGAN, B.[illegible]; MAKSIMOVA, Z.I.

Boric acid esters in Friedel-Crafts reactions. Zhur. obshch. khim. 27 no.6: 1454-1459 Je '57. (MIRA 10:8)

1.Moskovskiy gosudarstvennyy universitet.
(Boric acid) (Friedel-Crafts reaction)

MEL'NIKOV, N.N.; SHVETSOVA-SHILOVSKAYA, K.D.; MAKSIMOVA, Z.I.; BOCHAROVA, L.P.; SHAPOVALOVA, G.K.

Recovery of insecticidal preparations in aryl esters of the N-alkyl carbamic acid. Khim. prom. no.10:15-17 O '61. (MIRA 15:2)
(Insecticides)

SHVETSOVA-SHILOVSKAYA, K.D.; MEL'NIKOV, N.N.; MAKSIMOVA, Z.I.; ZAKHAROVA, T.S.; BOCHAROVA, L.P.

Organic insectifungicides. Part 66: Synthesis and insecticide properties of esters of certain carbamic acids. Zhur.ob.khim. 32 no.10:3230-3232 O '62. (MIRA 15:11)

1. Nauchnyy institut po udobreniyam i insektofungitsidam imeni Ya.V. Samoylova.
(Carbamic acid) (Insecticides)

SHVETSOVA-SHILOVSKAYA, K.D.; MEL'NIKOV, N.N.; MAKSIMOVA, Z.I.

Organic insectofungicides. Part 69: Synthesis of esters of alkyl carbamic acids containing a carbonyl group in the ester radical. Zhur.ob.khim. 33 no.7:2109-2110 Jl '63. (MIRA 16:8)

1. Nauchnyy institut po udobreniyam i insektofungitsidam imeni Ya.V.Samoylova, Moskva.
(Insecticides) (Carbamic acid) (Carbonyl group)

SARAYEVA, N.P.; MAKSIMOVA, Z.N.

Photometric method of copper determination in tailings from the flotation of complex metal ores. Sbor. nauch. trud. Gintsvetmeta no.23:341-343 '65. (MIRA 18:12)

MAKSIMOVA-VOZNESENSKAYA, G. A.

Maksimova-Voznesenskaya, G. A. —"Disturbance of the Permeability of the Capillaries in the Presence of Alternation Current Electrotrauma." Gor'kiy State Med Inst imeni S. M. Kirov, Gor'kiy, 1955 (Dissertation for the Degree of Candidate of Veterinary Sciences)

SO: Knizhnaya Letopis', No. 24, Moscow, Jun 55, pp 91-104

MAKLAKOV, A.

From the history of socialist planning in the national economy of the Chinese People's Republic. Vop.ekon. no.10:139-148 O '58. (MIRA 11:11)

(China--Economic policy)

MAKLAKOV, A., chlen Kommunisticheskoy partii Sovetskogo Soyuza s 1921 g.

Monoliths for Lenin's mausoleum. Nauka i zhyttia 12 no.4:5 Ap '62. (MIRA 15:8)
(Moscow--Sepulchral monuments)

MAKLAKOV, A.A

109-3-3, 23

AUTHORS: Mel'nikov, A.I., Morozov, A.V., Popov, B.N. and Maklakov, A.A.

TITLE: Pressed Cathode Based on Barium-calcium Tungstate (Pressovannyy katod na osnove bariy-kal'tsiyevogo vol'framata)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol.III, No.3, pp. 322 - 328 (USSR)

ABSTRACT: The active material which is employed in the preparation of pressed film-type cathode should have the following characteristics: capacity to produce the necessary quantity of the activator during its interaction with the reducing agent; good stability under normal atmospheric conditions; a low gas-absorption capacity and a low evaporation rate. The above requirements are, to a large extent, fulfilled by barium tungstate, Ba_3WO_6. This substance can be prepared from pure barium carbonate and tungsten oxide, the chemical reaction being in the form:

$$3BaCO_3 + WO_3 = Ba_3WO_6 + 3CO_2 \qquad (1).$$

Properties of the cathode can be further improved by using

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Pressed Cathode Based on Barium-calcium Tungstate

barium-calcium tungstate instead of Ba_3WO_6. This can be obtained by adding into the mixture of barium carbonate and tungsten oxide an appropriate quantity of calcium carbonate. The reactions are then in the form represented by Eqs. (2), (3) and (4). The resulting material was used in two types of pressed, experimental cathodes (see Figs 2a and 6). The cathodes were in the form of molybdenum cylinders; the active mixture consisted of 90% tungsten, 9.5% tungstate and 0.5% aluminium (by weight). The cathodes were mounted in special diodes (see Fig.3) which were fitted with special cooling copper anodes. The distance between the cathodes and the anodes was 0.4 to 0.6 mm. The experimental results are shown in Figs. 4, 5, 6 and 7. Fig. 4 shows voltage current characteristics of the diodes taken at various cathode temperatures; the two curves of Fig. 4a were taken under pulse conditions, while the curves of Fig. 46 were measured under static conditions. Fig. 5 shows the static emission current of a tube as a function of time; Curve 1 refers to the cathode made of barium tungstate, while Curve 2 illustrates the emission of a barium-calcium tungstate cathode. Fig. 6 illustrates the influence of hydrogen-poisoning on barium-calcium tungstate cathodes (full

Pressed Cathode Based on Barium-calcium Tungstate

curves illustrate the poisoning effect, while 'dotted' curves illustrate the process of the reactivation of the cathode). Secondary electron emission of the cathodes was also investigated at temperatures of 800, 900, 1 000, 1 100 and 1 200 °C and the resulting curves are shown in Fig.7. From the data obtained, it is concluded that the barium-calcium tungstate cathodes can produce stable emission densities of 6 to 7 A/cm^2 at operating temperatures of 1 130 to 1 150 °C; the cathodes have a life of about 1 000 hours, provided the anodes of the tubes are properly cooled.
There are 7 figures, and 7 references, 5 of which are English, 1 French and 1 Russian.

SUBMITTED: April 10, 1957

AVAILABLE: Library of Congress

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MAKLAKOV, A.A.

SOV-109-3-6-26/27

AUTHORS: Savitskaya, Ya. S., Vikhlyayeva, R. P., Alpatova, N M.

TITLE: An Interdepartmental Seminar on Cathode Electronics (7th Session) ((Mezhduvedomstvennyy seminar po katodnoy elektronike (7-e zasedaniye))

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 6, p 854 (USSR)

ABSTRACT: On the 3rd February 1956 a Session of the Interdepartmental Seminar took place in the Institute of Radio Engineering and Electronics of the Soviet Academy of Sciences. During the meeting 6 lectures were delivered. A. A. Maklakov and Ye. P. Ostapchenko dealt with the new method of preparing barium and barium-calcium aluminates and tungstates. L. Ya. Smoktiy presented the results of her work on the improvement of the processing of sintered cathodes. The lecture of R. M. Rybakova dealt with the investigation of oxide suspensions for directly heated cathodes. A. P. Iyevlev spoke of the production technology and the methods of control of a new barium getter. N. I. Ekivina considered the problem of application of the electro-osmosis for the investigation of the electro-phoresis of alundum suspensions. The paper of

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SOV-109-3-6-26/27

An Interdepartmental Seminar on Cathode Electronics (7th Session)

Yu. N. Buznikov analysed the causes and the mechanism of the darkening of alundum coatings during the preparation and the operation of the electron tubes.

SUBMITTED: March 14, 1958

Card 2/2 1. Electron tubes - USSR

AUTHORS: Mel'nikov, A. I., Morozov, A. V. 48-22-5-18/22
Popov, B. N., Maklakov, A. A.

TITLE: Pressed Cathodes of Aluminates and Tungstates of Barium and Calcium (Pressovannyye katody na osnove alyuminatov i vol'framatov bariya-kal'tsiya)(Data From VIII. All Union Conference on Cathode Electronics, Leningrad, October 17-24, 1957)(Materialy VIII Vsesoyuznogo soveshchaniya po katodnoy elektronike, Leningrad, 17-24 oktyabrya 1957 g.)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1958 Vol. 22, Nr 5. pp. 613-621 (USSR)

ABSTRACT: Recently the demand for new types of cathodes has risen, as the oxide cathodes fail in the acception of emission currents of high density (mostly in high-frequency apparatuses). Therefore the idea of uniting the cathode space, where the active substance is formed, with the sponge by means of a direct introduction of barium combinations into the pores of the latter, has been put forward. There are a) impregnated (Ref 1) and b) pressed catholes (Ref 2). Figure 1 demonstrates the construction of a pressed cathode. It is a molybdenum cylinder, into which a mixture of the active substance, tungsten powder and the reducing substances has been pressed. At the working

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temperature of the cathode, the interaction of the components of this mixture leads to the formation of free barium and to the activation of the cathode. As the barium compounds tested so far had proved unsatisfactory (reference 3,4), the authors set themselves the task of testing the compounds resulting from the interaction of alkaline earth metal oxides of barium and calcium with acidity- -and amphoteric oxides. The investigations yielded the following conclusions: 1. The pressed cathodes mentioned in the title permit an uninterrupted emission up to a current density of 8 A cm^{-2} if the time of operation exceeds 1000 hours. 2. The mechanical and electrical stability of the cathodes is satisfactory, they are easily enough reactivated after the poisoning. 3. Their production is simpler than that of the L-cathodes. 4. The emission properties and the life of the cathodes depends on the properties of the active substance. Here Barium-calcium tungstate is superior to aluminates because

of its stability in air. 5. The tungstate mentioned last makes possible a longer time of operation than the barium tungstate. 6. Preliminary tests have shown that the influence of considerable changes in the concentration of tungstate in the emitter on the emission currents of the cathodes is insignificant. A final interpretation of this phenomenon has not been given yet. S. D. Uman, Z. V. Kukushkina, L. G. Sherstnev, Ye. P. Ostapchenko, A. A. Gugnin, A. I. Figner and the first two authors joined in the discussion. There are 9 figures and 9 references, 2 of which are Soviet.

1. Cathodes (Electron tube)--Design 2. Cathodes (Electron tube) --Materials 3. Cathodes (Electron tube)--Effectiveness 4. Barium aluminates--Applications 5 Calcium aluminates--Applications 6. Barium tungstates--Applications 7. Calcium tungstates--Applications

MAKLAKOV, A.A.; OSTAPCHENKO, Ye.P.

X-ray investigation of the kinetics of formation of barium calcium aluminates and tungstates. Zhur. struk. khim. 1 no.2:178-182 Jl-Ag '60. (MIRA 13:9)
(Barium calcium aluminate)
(Barium calcium tungstate)

ZIMKIN, Ye.A.; [illegible] Ya.P.; MAKLAKOV, A.G.

[illegible] cyanates in collagen and gelatin. [illegible] Zhur.prikl.khim. 38 no.11:2581-2585 N '65. (MIRA 18:12)

1. Kazanskiy filial Vsesoyuznogo nauchno-issledovatel'skogo kinofotoinstituta i Kazanskiy zhelatinovyy zavod. Submitted August 15, 1964.

MAKLAKOV, A. I.

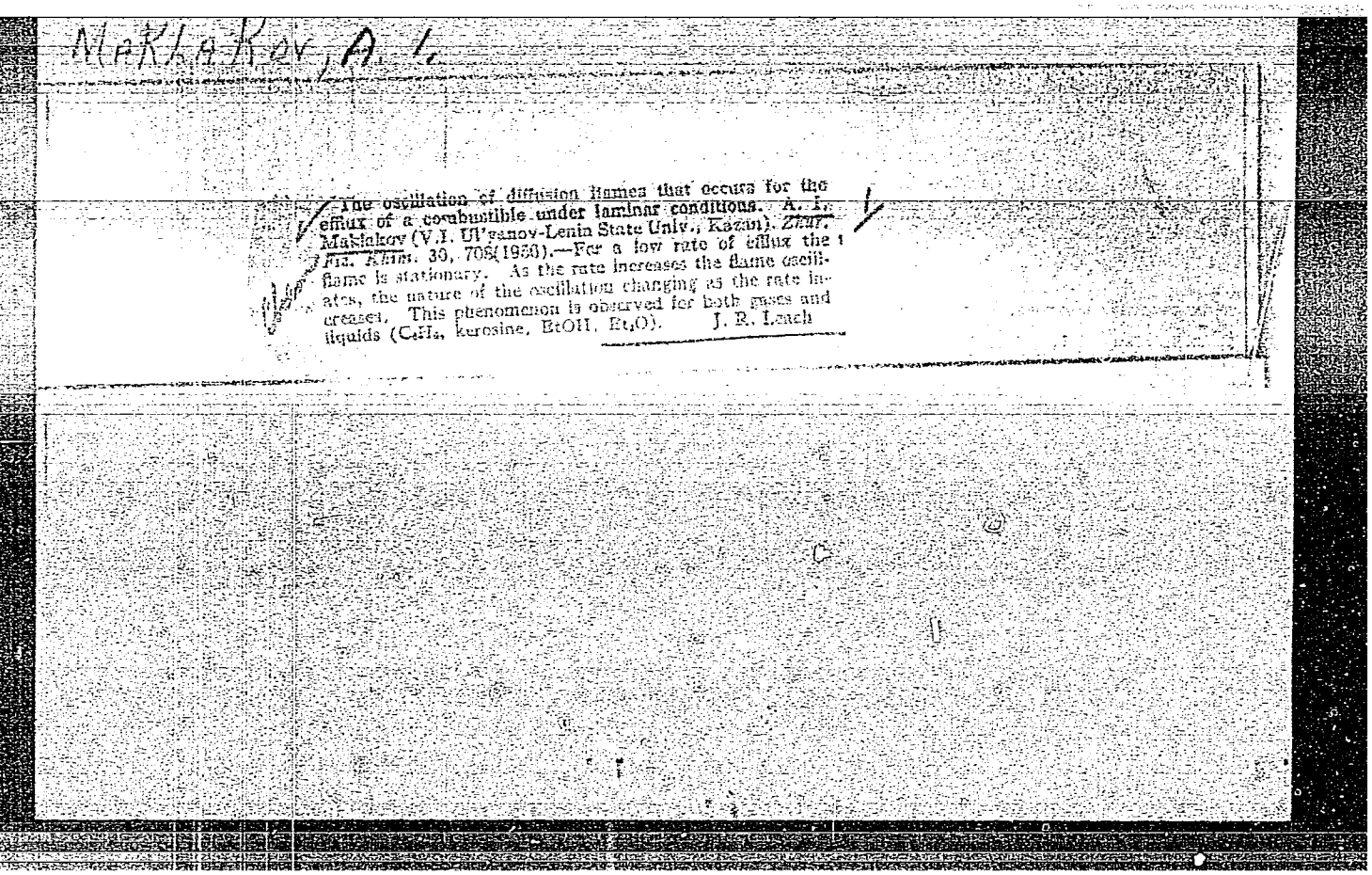
MAKLAKOV, A. I.--"A Study of the Stability of Open Laminar Diffusion Flames." Kazan' State U imeni V. I. Ul'yanov-Lenin. Kazan', 1955. (Dissertation for the Degree of Candidate of Physicomathematical Sciences).

SO: Knizhnaya Letopis' No. 27, 2 July 1955

MAKLAKOV, A.I.

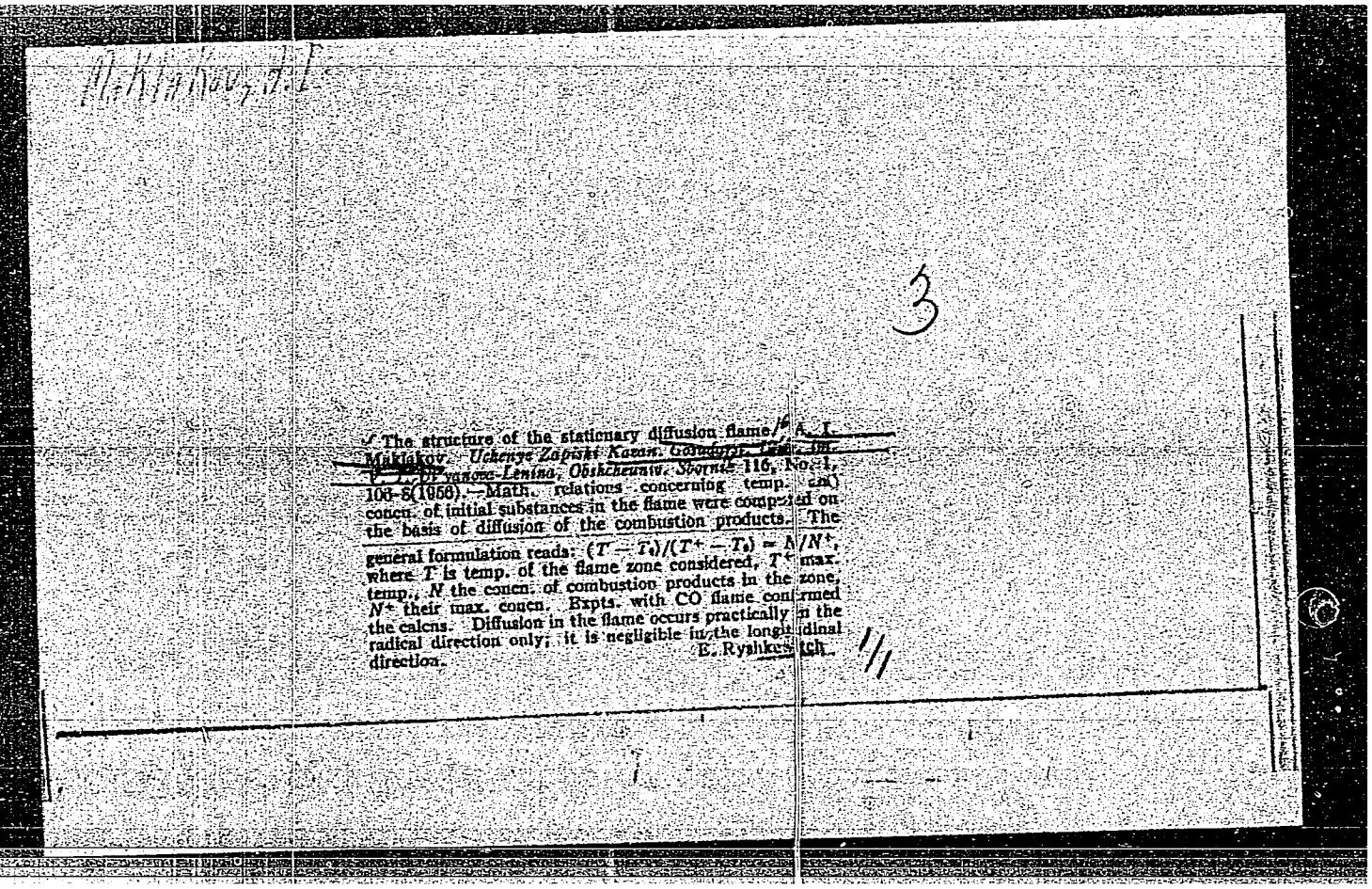
Structure of a stationary diffusion flame-brush. Uch.zap.Kaz.un. 116 no.1:106-108 '55. (MLRA 10:5)

1.Kafedra molekulyarnykh i teplovykh yavleniy.
(Flame)



Maklakov, A. I.

The oscillation of diffusion flames that occurs for the efflux of a combustible under laminar conditions. A. I. Maklakov (V.I. Ul'yanov-Lenin State Univ., Kazan). *Zhur. Fiz. Khim.* 30, 706(1956).—For a low rate of efflux the flame is stationary. As the rate increases the flame oscillates, the nature of the oscillation changing as the rate increases. This phenomenon is observed for both gases and liquids (C_6H_6, kerosine, EtOH, Et_2O). J. R. Leach



3

The structure of the stationary diffusion flame/ A. I. Makliakov. *Uchenye Zapiski Kazan. Gosudarst. Un. im. V. I. Ul'ianova-Lenina, Obshcheniia. Sbornik* 116, No. 1, 103-8(1956).—Math. relations concerning temp. and concn. of initial substances in the flame were computed on the basis of diffusion of the combustion products. The general formulation reads: $(T - T_0)/(T^+ - T_0) = N/N^+$, where T is temp. of the flame zone considered, T^+ max. temp., N the concn. of combustion products in the zone, N^+ their max. concn. Expts. with CO flame confirmed the calcns. Diffusion in the flame occurs practically in the radial direction only; it is negligible in the longitudinal direction. E. Ryshkov

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DMITRIYEV, V.D.; MAKLAKOV, A.I.

Determining the combustion properties of Kazan gas by the "constant pressure bomb" method. Uch. zap. Kaz. un. 117 no.9: 167-169 '57. (MIRA 13:1)

1.Kazanskiy gosudarstvennyy universitet im. V.I. Ul'yanova-Lenina. Kafedra molekulyarnykh i teplovykh yavleniy.
(Combustion) (Gases--Analysis)

76-32-5-25/47

AUTHOR: Maklakov, A. I.

TITLE: An Experimental Investigation of the Stability of Open Laminary Diffusion Flames (Eksperimental'noye izucheniye ustoychivosti otkrytykh laminarnykh diffuzionnykh plamen)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 5, pp. 1107-1115 (USSR)

ABSTRACT: There is no concrete opinion existing on the problem mentioned above; thus the data by Khottel' and Gausorn (Ref 1), Chamberlin and Rose (Ref 2) and Barr (Ref 3) were contradicting and no systematic investigations had been carried out. The present work has this aim, the previous experiments having been mentioned earlier. From the experimental part can be seen that mainly burners with glass tubes were used and that as combustion gases carbon monoxide, hydrogen, acetylene, ethylene and hydrogen sulfide, as well as ethanol, ether, acetone, kerosene and gasoline were used. The pictures were taken on a rotating film drum, and the Tepler IAB-451 apparatus was used. From the experimental results can be seen that at a certain "critical velocity" of the fuel the flame looses its stability, with a difference being made between a linear and a volume velocity. In the case of ethylene the

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author could especially clearly observe a soot formation at the surpassing of the laminary velocity of the unsteady flame; this soot formation pointed at a decrease of the combustion density. It was found that the critical velocity and the formation of the unsteady flame depend on the nature of the fuel and that a minimum diameter of the burner exists below which the flame remains steady at any velocity (for CO for instance, about 3 mm). The flame had two combustion zones -the inner kinetic one, and the outer diffuse one, the fluctuations only occurring in the outer one. It was observed that the material of the burner also has an influence on the critical velocity, just as well as the position of the burner, as was observed by N. N. Norkin (Ref 7). The frequency of flame fluctuations as well as the form of the flame and its height were also investigated. In evaluating the results the author mentions the work by Lewis and Elbe (Ref 8) and it is commented on together with the two works mentioned in the beginning, on which occasion it is assumed that the formation of "vortexes" in the flame is to be explained by an unequal separation of the reaction products in the combustion at equal velocity of

An Experimental Investigation of the Stability of Open Laminary Diffusion Flames 76-32-5-25/47

escape. Explanations are mentioned for the combustion process, as well as a computation of the diffusion coefficient of oxygen; from a table can be seen that the value of the diffusion time is close to that of the fluctuation period of the flame, from which fact the author concludes that in the diffusion combustion the diffusion coefficient of oxygen and of the fuel into the combustion products is decisive, and not that of the oxygen into the fuel. There are 6 figures, 5 tables, and 11 references, 8 of which are Soviet.

ASSOCIATION: Kazanskiy gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina (Kazan' State University imeni V.I. Ul'yanov-Lenin)

SUBMITTED: February 1, 1957

1. Flames--Diffusion 2. Flames--Velocity 3. Flames--Test methods 4. Gases--Combustion

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27578
S/190/61/003/009/013/016
B124/B101

15.8510

AUTHORS: Maklakov, A. I., Pimenov, G. G., Sagitov, R. Ya.

TITLE: Investigation of polymers subjected to uniaxial stretch at high deformation rates

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 9, 1961, 1410 - 1414

TEXT: The phenomenon of "hairline cracking" and the resulting structural changes are the topic of this publication. An amorphous, transparent film made of Lavsan (polyethylene terephthalate), 0.15 to 0.40 mm thick, was investigated. To prepare crystalline samples, the amorphous film was heated to 120°C for 2 hr, which causes the film to become opaque. Tensile tests were performed with an РМИ-60 (RMI-60) machine at stretching rates of 100, 200, 500, and 1000 mm/min and constant temperature (0 - 100°C). The X-ray pictures were taken with a УРС-55 (URS-55) apparatus (copper anode and nickel filter); the anode voltage was 35 kv, the amperage 20 ma. The structure of hairline cracks was studied using an МБИ-6 (MBI-6) microscope. The density of the samples was determined by the flotation

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Investigation of polymers...

technique. The formation of hairline cracks was found to occur in amorphous and crystalline polyethylene terephthalate, low-density polyethylene, polypropylene, caprone, and enant, which, except for the first, were all crystalline before deformation, which shows that hairline cracking is possible under conditions of high-rate cold drawing. Fig. 1 shows that stress curves are the same with formation of a transparent bottleneck and of hairline cracks. The stress which causes the formation of hairline cracks is, however, smaller than the one which yields a transparent substance. The structure of hairline cracks in amorphous and crystalline Lavsan is somewhat different. The opacity of samples decreases with increasing temperature at constant stretching rate. The sample remains completely transparent when deformed at a definite temperature. The higher the deformation rate, the higher are the initial temperatures of stretching without formation of hairline cracks, and vice versa. The formation of hairline cracks occurs below the vitrification point and in the center of the Lavsan sample with only a thin top layer remaining transparent. The density of samples of oriented Lavsan with cracks (about 0.82 - 1.13 g/cm^3) strongly differs from that of the same samples showing no hairline cracks (about 1.32 g/cm^3) and drops with rising temperature and

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Investigation of polymers...

drawing rate. The orientation of the amorphous Lavsan film with hairline cracking leads to the phase transition of the oriented film. This was confirmed by the appearance of new symmetry elements in the X-ray pictures. When the samples showing hairline cracks are heated to 200°C for 5 hr, the bending strength in the direction of drawing, but not perpendicular to this direction, is considerably reduced. The number of hairline cracks is somewhat reduced by storage in a mixture of phenol and tricresol at 20°C; pressures of 150 atm lead to an increase in transparency with density increasing from 1.01 to 1.56. The formation of a bottleneck with hairline cracks in forced elastic deformation of amorphous polyethylene terephthalate at room temperature is accompanied by a phase transition, while only the degree of orientation increases when hairline cracks form in high-rate uniaxial deformation of crystalline low-pressure polyethylene, polypropylene, enant, and caprone. When the stretching rate of Lavsan is reduced below about 200 mm/min, no further hairline cracking is found at room temperature. The dependence of hairline cracking on the regular structure of the molecule in a polymer is proved by the fact that no hairline cracks form in high-pressure polyethylene. V. A. Kargin and G. L. Slonimskiy (Ref. 5: Kratkiye ocherki po fiziko-khimii polimerov

Card 3/5

Investigation of polymers...

(Short treatise on physical chemistry of polymers), izd. MGU, 1960, p. 130) are mentioned. There are 3 figures, 1 table, and 8 references: 7 Soviet and 1 non-Soviet.

ASSOCIATION: Kazanskiy gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina (Kazan' State University imeni V. I. Ul'yanov-Lenin)

SUBMITTED: October 14, 1960

Card 4/5

L 60886-65

ACCESSION NR: AR5011412 UR/0081/65/000/006/S011/S012

SOURCE: Ref. zh. Khimiya, Abs. 6S70

AUTHOR: Zhuravleva, I.P.; Zgadzay, E.A.; Maklakov, A.I.; Pimenov, G.G.

TITLE: Physical properties of polymers with conjugated bonds. Polyphenylene imine

CITED SOURCE: Sb. Itog. nauchn. konferentsiya Kazansk. un-ta za 1962 g. Kazan',

TOPIC TAGS: polyenylene imine, conjuguted polymer, electric property, magnetic property, thermoelectric property, physical property, semiconducting polymer

TRANSLATION: Polyphenylene imine was reprecipitated, heated (not always) in vacuum or in air for 2 hrs at 200-300°C; the electroconductivity and static magnetic susceptibility were determined; a Debye powder pattern was photographed; and the nuclear magnetic resonance spectrum was recorded. The electroconductivity in vacuum ($3 \cdot 10^{-2}$ mm Hg) at 20-300°C is in conformity with the law: $\sigma = \sigma_0 \exp(-E/kT)$, at 20° is 10^{-7}-10^{-14} ohm^{-1}cm^{-1}, E = 0.38 to 0.78 ev. At 120 to 140°C the polyphenylene imine undergoes irreversible changes with absorption of heat and change of crystallinity, and the log σ - (1/T) curve drops sharply. Unheated polyphenylene imine

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L 60886-65

ACCESSION NR: AR5011412 0

has the highest electroconductivity, and that heated in air at 300°C has the lowest. The application of vacuum decreases the conductivity 1½ to 3 times. Judging by the sign of the thermoelectromotive force, the electroconductivity of the polyphenylene imine is of the hole type. It was also established that polyphenylene imine is highly hygroscopic, which fact causes changes in its electroconductivity. On the basis of its magnetic properties it cannot be included in any one known class of magnetic materials. The static magnetic susceptibility, determined by the Gouy method in magnetic fields of 300-5350 oersteds at 20 to 120°C, is positive and equal to $0.17\text{-}16.59 \cdot 10^{-6}$, and for an annealed polyphenylene imine reaches a maximum at 600 to 800 oersteds. The magnetization curve under the condition of this investigation did not reach saturation. The Debye powder patterns obtained on a URS-55 unit with copper emission and nickel filter indicate that crystallinity decreases after heating at 200°C in vacuum (and especially in air) and disappears entirely after heating at 300°C. At ~20°C the nuclear magnetic resonance spectrum of polyphenylene imine not treated with vacuum had a narrow and a wide (halfwidth 5.5 oersteds) portion, the first of which disappeared entirely under vacuum, while the second widened to 6.2 to 6.4 oersteds. The presence of semiconductor properties of polyphenylene imine was also established. L. Andreyev.

SUB CODE: OC, FM ENCL: 00

Card 2/2

ACCESSION NR. AT4033991 S/0000/63/000/000/0087/0090

AUTHOR: Nikitina, V. I.; Maklakov, A. I.; Balakireva, R. S.; Pudovik, A. N.

TITLE: Polymers consisting of aromatic rings conjugated with hetero atoms. I. Polypheneylene- and polydiphenyleneimines.

SOURCE: Geterotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Heterochain macromolecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 87-90

TOPIC TAGS: organic semiconductor, semiconducting polymer, polyphenyleneimine, polydiphenyleneimine, polymer electrical property

ABSTRACT: Polyphenyleneimines, semiconducting polymers containing NH groups between aromatic rings in the backbone, have been prepared, and their electrical and magnetic properties have been studied at the Kazanskiy gosudarstvepny*y universitet im. V. I. Ul'yanov-Lenina (Kazan' State University). Polycondensation of aromatic diamines with dihydric phenols was used. Polymer I was obtained from p-phenylenediamine and hydroquinone; II, from benzidine and hydroquinone;

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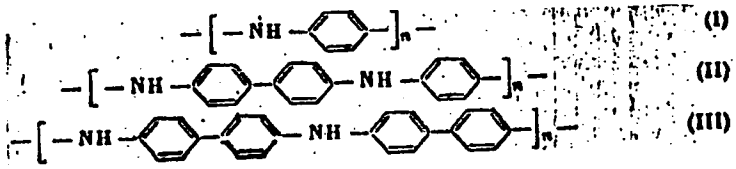
ACCESSION NR. AT4033991

and III, from benzidine and 4,4'-dihydroxybiphenyl. The polycondensation was carried out in the melt at 260—280C for 6 hr, and then at the same temperature and 1—2 mm Hg for 2 hr. All the polymers are black powders insoluble in the common organic solvents except dimethylformamide. Three types of polymers were prepared: reprecipitated (a), nonreprecipitated (b), and reprecipitated and heat-treated in air at 320C for 1 hr (c). On the basis of the synthesis method and IR spectroscopy, the following structures were



assumed. D-c electrical conductivity was determined for pellet samples at 20—100C. The temperature dependence of conductivity obeyed an exponential law fairly well. Numerical data are given in Table 1 of the Enclosure. All the samples exhibited high conductivity, positive magnetic susceptibility, and an EPR signal. The unpaired

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ACCESSION NR. AT4033991

electron concentration in Ia was calculated to be about 10^{19} — 10^{20} per gram. Orig. art. has: 2 tables, 1 figure, and 1 formula.

ASSOCIATION: Kazanskiy gosudarstvenny*y universitet im. V. I. Ul'yanova-Lenina(Kazan' State University)

SUBMITTED: 09Jul62 DATE ACQ: 30Apr64 ENCL: 01

SUB CODE: CH,PH NO REF SOV: 010 OTHER: 000

Card 3/4

ACCESSION NR: AT4033991 ENCLOSURE: 01

Table 1. Electrical and magnetic properties of polyphenyleneimines

Polymer	Sample	ρ_{20}, $ohm^{-1} \cdot cm^{-1}$	ρ_∞, $ohm^{-1} \cdot cm^{-1}$	E, ev	EPR line half width, oersted	Polymer	Sample	ρ_{20}, $ohm^{-1} \cdot cm^{-1}$	ρ_∞, $ohm^{-1} \cdot cm^{-1}$	E, ev	EPR line half width oersted
I	a	10^{-9}	10^{-4}	0.48	~7	II	a	10^{-9}	10^{-3}	0.68	~9
	b	10^{-10}	10^{-4}	0.60			b	10^{-12}	10^{-5}	0.86	
	c	10^{-11}	10^{-6}	0.68		III	a	10^{-10}	10^{-6}	0.50	~9

Card 4/4

MAKLAKOV, A.I.

Application of a radio-frequency method for the measurement of diamagnetic susceptibility. Zhur. fiz. khim. 37 no.11: 2609-2611 N'63. (MIRA 17:2)

1. Kazanskiy gosudarstvennyy universitet imeni Ul'yanova-Lenina.

ACCESSION NR. AP4030367 S/0190/64/006/003/0488/0492

AUTHOR: Zhuravleva, I. P.; Zgadzay, E. A.; Maklakov, A. I.

TITLE: Certain properties of polyphenylenemine

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 3, 1964, 488-492

TOPIC TAGS: organic semiconductor, semiconductor polymer, polyphenylenemine, electrical property, magnetic property

ABSTRACT: A study has been made of the electrical properties of a new semiconducting polymer — polyphenylenemine $[-C_6H_4-NH]_n$ (V. I. Nikitina, A. I. Maklakov, R. S. Balakireva, A. N. Pudovik, Sb.: Geterotsepny*ye vysokomolekulyarny*ye soyedineniya [Symposium: Heterochain High-Molecular-Weight Compounds], Izd. "Nauka," 1964, p. 87). This research was done at the Kazanskiy gosudarstvenny*y universitet im. V. I. Ul'yanov-Lenin (Kazan' State University imeni V. I. Ul'yanov-Lenin). Three types of samples were used: samples prepared without catalysts and reprecipitated (I) or nonreprecipitated (II), and samples prepared in the presence of Al_2O_3

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ACCESSION NR. AP4030367

catalyst and reprecipitated (III). D-c electrical conductivity was studied in air or at 3 x 10^{-2} mm Hg for pellet samples as a function of ambient temperature (20—270C) and preliminary heat-treatment temperature (200—300C). The temperature dependence of electrical conductivity of I shown in Fig. 1. of enclosure indicates that at about 120C (inflection) and above the electrical nature of the polymer changes probably owing to the elimination of bound water. Of all the samples, nonheat-treated I showed the highest conductivity at 20C — 10^{-7} ohm^{-1} x cm^{-1}. This conductivity dropped to 10^{-14} ohm^{-1} x cm^{-1}, and activation energy rose with heat-treatment temperature increases to 300C. Nonheat-treated II and III showed poorer conductivity than I, evidently owing to the presence of impurities. Room temperature degassing of nonheat-treated samples produced a partially irreversible rise in resistivity by a factor of 1.2—3.0 owing to the elimination of free water. The sign of the thermoelectric power for all the samples indicated p-type conductivity. The magnetic susceptibility was positive for all the samples; its value rose with rising ambient and heat-treatment temperatures. X-ray analysis indicates that order in the polymer

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ACCESSION NR. AP4030367

structure is no greater than "gas crystalline" order and deteriorates with heat treatment. The authors thank R. S. Balakireva for making the samples available. Orig. art. has: 3 figures and 2 tables.

ASSOCIATION: Kazanskiy gosudarstvenny*y universitet imeni V. I. Ul'yanov-Lenin (Kazan State University)

SUBMITTED: 16Mar63 DATE ACQ: 07May64 ENCL: 01

SUB CODE: CH,PH NO REF SOV: 007 OTHER: 002

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031610010-8"

ACCESSION NR: AP4030367

ENCLOSURE: 01

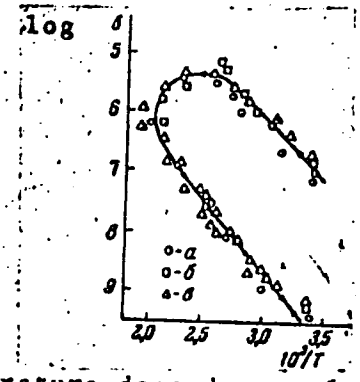

Fig. 1. Temperature dependence of conductivity (σ) of nonheat-treated I

a, b - in vacuum; c - in air. The arrow indicates the course of the temperature change.

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ACCESSION NR: AP4037289 S/0190/64/006/005/0923/0924

AUTHORS: Maklakov, A. I.; Voskresenskiy, V. A.; Khiyenkina, B. D.; Yegorova, L. Ya.

TITLE: A nuclear resonance investigation of filled plasticized polyvinylchloride

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 5, 1964, 923-924

TOPIC TAGS: polyvinylchloride, nuclear magnetic resonance, filler, plasticizer, stabilizer, silica gel, aluminum, calcium stearate, dibutylphthalate, dioctylphthalate, spin spin relaxation, polyvinylchloride PF 4

ABSTRACT: The process of polymer filling was studied by the method of nuclear magnetic resonance. Samples were 2 mm thick and consisted of (parts by weight): polyvinylchloride (PVC) brand PF-4 -- 100; plasticizer -- 64; stabilizer (calcium stearate) -- 3; filler -- 0-70. Silica gel and aluminum powder were used as fillers; dibutylphthalate (DBP) and dioctylphthalate (DOP) were used as plasticizers. The oscillographic investigation and the study of spin-spin relaxation period (T_2) indicated a strong molecular interaction between the polymer and the plasticizer. It was noted that DBP exerted a greater influence than DOP on the mobility of the PVC molecules. The introduction of DBP gradually diminished T_2, with silica gel

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ACCESSION NR: AP4037289

being more active than aluminum in this process. T_2 for PVC + DOP + silica gel proved to be almost independent of the filler content; aluminum diminished the molecule mobility in this system to a lesser extent than in the system containing DBP. These experiments showed that T_2 is related to the amount and type of plasticizers and stabilizers. Orig. art. has: 2 graphs.

ASSOCIATION: Kazanskiy gosudarstvenny*y universitet (Kazan' State University); Kazanskiy inshenerno-stroitel'ny*y institut (Kazan' Engineering and Structural Institute)

SUBMITTED: 01Jul63 DATE ACQ: 09Jun64 ENCL: 00

SUB CODE: MT NO REF SOV: 004 OTHER: 003

Card 2/2

ACCESSION NR: AP4041683 S/0153/64/007/002/0297/0300

AUTHOR: Voskresenskiy, V. A.; Maklakov, A. I.; Orlova, Ye. M.; Kireyeva, G. V.

TITLE: The nature of modifications in plasticized poly(vinyl chloride) induced by high-frequency currents

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 7, no. 2, 1964, 297-300

TOPIC TAGS: poly(vinyl chloride), pf 4 resin, plasticized poly(vinyl chloride), phthalic acid ester, sebacic acid ester, phosphoric acid ester, high frequency preheating, physicomechanical property

ABSTRACT: The previously established high-frequency-induced improvements in physicomechanical characteristics of plasticized poly(vinyl chloride) (PF-4 resin) were studied in detail in order to explain the mechanism of the high-frequency action. This study

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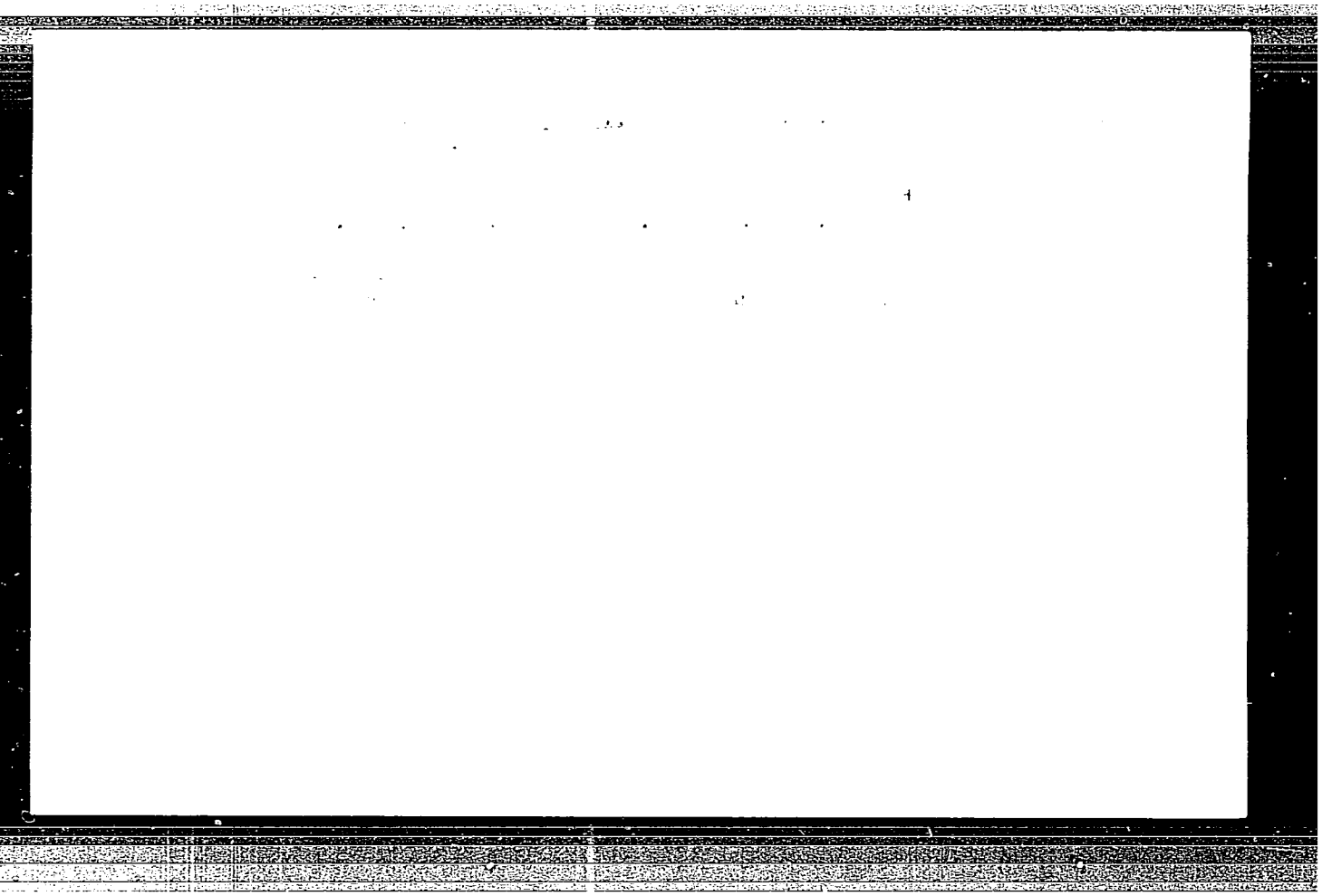
was prompted by the successful application of high-frequency currents in curing polymer materials, polymerizing glass-reinforced plastics, et cetera. Mixtures of PF-4 resin with a polar plasticizer and calcium stearate stabilizer were subjected to high-frequency preheating under optimum conditions before calendering to form thin films. Viscosimetric and thermomechanical measurements and differential thermal analysis showed nearly identical characteristics for high-frequency treated and untreated samples of the same initial composition, regardless of the nature of the plasticizer (phthalic, sebacic, or phosphoric acid esters). It was concluded that high-frequency currents do not induce any fundamental modification of the chemical structure or kinetic properties in macromolecules of the polymer. The previously observed improvements in physicomechanical characteristics, as well as resistance to aging and to low-molecular-weight liquids, are attributed to accelerated diffusion of the plasticizers into the bulk of the polymer and gelation. Such a degree of gelation is reached that the highest possible number of polymer-plasticizer-polymer bonds are formed. Orig. art. has: 3 figures.

ACCESSION NR: AP4041683

ASSOCIATION: Kazanskiy inzhenerno-stroitel'ny*y institut (Kazan Construction Engineering Institute); Gosudarstvenny*y universitet im. V. I. Ul'yanova-Lenina (Kazan State University)

SUBMITTED: 21Jun63	ATD PRESS: 3052	ENCL: 00
SUB CODE: MT, OC	NO REF SOV: 009	OTHER: 003

Card 3/3



SHEPELEV, V.I.; MAKLAKOV, A.I.

Nuclear magnetic resonance in polyphenylenimine. Zhur. strukt. khim. 6 no.2:298-299 Mr-Ap '65. (MIRA 18:7)

1. Kazanskiy gosudarstvennyy universitet.

MAKLAKOV, A.I.; PIMENOV, G.T.

Nuclear magnetic resonance in polymers in the amorphous and crystalline states. Vysokom. soed. 7 no.3:536-538 Mr '65.
(MIRA 18:7)

1. Kazanskiy gosudarstvennyy universitet.

L 2928-66 EWT(m)/EPF(c)/EWP(j)/T/EWA(c)/ETC(m) WW/RM

ACCESSION NR: AP5022606 UR/0190/65/007/009/1592/1596
678.01:53+678.675

AUTHORS: Kuznetsov, G. A.; Gerasimov, V. D.; Fomenko, L. N.; Maklakov, A. I.; Pimenov, G. G.; Sokolov, L. B.

TITLE: The nature of the transitions in polymetaphenyleneisophthalamide

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 9, 1965, 1592-1596

TOPIC TAGS: polymer, resin, thermomechanical property, x-ray, nuclear magnetic resonance, thermal stability, phenylone

ABSTRACT: The nature of the transitions of polymetaphenyleneisophthalamide (phenylone) was investigated by thermomechanical, differential thermal, x-ray, and nuclear magnetic resonance methods. It was desired to determine the best conditions for producing polymers of high thermal stability with improved film and fiber properties. A powdery specimen with a viscosity higher than 1.0 in sulfuric acid and a 5% moisture content was used. The experimental conditions are described. It was found that the initially amorphous phenylone crystallizes upon heating. The thermomechanical curves plotted at a load of 0.8, 6, and 1000 kg/cm^2 show that the glass temperature of phenylone is 280C. The x-ray

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L 2928-66

ACCESSION NR: AP5022606

diagrams of amorphous and crystalline phenylone were taken at 26, 100, 286, 356, and 430C. The thermomechanical curve is interpreted on the basis of the data of differential thermal analysis and of x-ray study. After softening at 300C, the polymer starts to crystallize. The range of steady deformation lying at 340-400C corresponds to the crystalline state of phenylone. Heating above 400C causes decomposition, while melting sets in at 430C. The second moment of the absorption line of nuclear magnetic resonance is plotted against temperature for the initial amorphous polymer and for a specimen preheated to 360C. The character of the curves is discussed. It was found that the increase in ΔH_2^2 of the preheated specimen over all temperature ranges produces a smaller mobility and better packing of the molecules, indicative of the crystallization process. The disappearance of the highly elastic state below the melting point of the crystalline substance explains the absence of the minimum on the ΔH_2^2--temperature curve in the range of 290-320C. Orig. art. has: 5 figures.

ASSOCIATION: Vladimirskiy nauchno-issledovatel'skiy institut sinteticheskikh smol (Vladimir Scientific Research Institute of Synthetic Resins); Kazanskiy gosudarstvennyy universitet (Kazan State University) 44,55

SUBMITTED: 19Oct64 ENCL: 00 44,55 SUB CODE: GC, OC

NO REF SOV: 005 OTHER: 001

Card 2/2

L 27333-66 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP6008968 SOURCE CODE: UR/0190/65/007/011/1894/1898

41
38
B

AUTHORS: Maklakov, A. I.; Pimenov, G. G.; Shepelev, V. I.

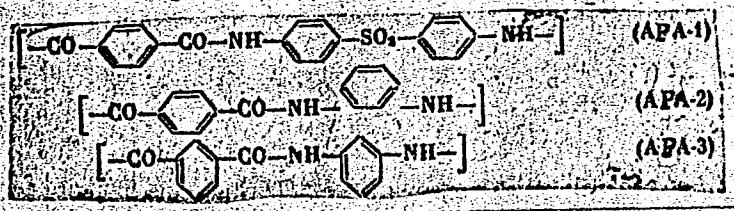
ORG: Kazan State University (Kazanskiy gosudarstvennyy universitet)

TITLE: Evaluation of the mobility of macromolecules in amorphous regions of crystalline polymers by nuclear magnetic resonance

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 11, 1965, 1894-1898

TOPIC TAGS: macromolecular chemistry, nuclear magnetic resonance, crystalline polymer

ABSTRACT: NMR spectra of polyethyleneterephthalate, isotactic polystyrene, and a number of aromatic polyamids with monomeric units

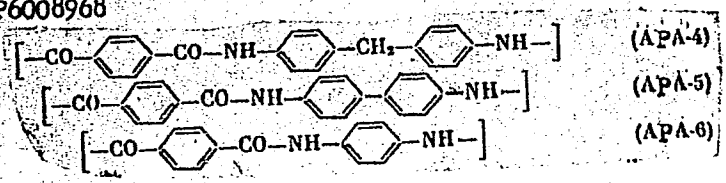


Card 1/2

UDC: 678.01:53

L 27333-66

ACC NR: AP6008968



were studied at 20--350C by using a scheme described by A. I. Maklakov and G. G. Pimenov (Dokl. AN SSSR, 157, 1413, 1964). It was shown that the temperature T_n of appearance of the narrow component in the complicated NMR signal of the above polymers may serve as a measure of the mobility of the macromolecules in their amorphous areas. The T_n of 25 samples has been determined. The relationship between the structure of the polymer and T_n is discussed. "The authors express their gratitude to R. S. Balakirev, G. A. Kuznetsov, and L. B. Sokolov for supplying a number of samples." Orig. art. has: 1 table and 2 figures.

SUB CODE: 07/ SUBM DATE: 07Dec64/ ORIG REF: 008/ OTH REF: 009

Card 2/2

L 17626-66 EWT(m)/EWP(j) RM

ACC NR: AP6001735 SOURCE CODE: UR/0020/65/165/004/0868/0870

AUTHORS: Maklakov, A. I.; Chenborisova, L. Ya.

ORG: Kazan State University im. V. I. Ul'yanov-Lenin (Kazanskiy gosudarstvennyy universitet); Institute for Organic Chemistry, Academy of Sciences, SSSR, Kazan (Institut organicheskoy khimii Akademii nauk SSSR)

TITLE: Estimation of the plasticizer character of polyvinylchloride by means of a nuclear magnetic resonance method

SOURCE: AN SSSR. Doklady, v. 165, no. 4, 1965, 868-870

TOPIC TAGS: plasticizer, polyvinyl chloride, plastic, polymer, NMR, NMR spectroscopy

ABSTRACT: Nuclear magnetic resonance technique was employed for the identification of the plasticizer type (e.g., inter-fiber, intrafiber, or interstitial) in polyvinyl chloride. The investigation is a continuation of the work of A. I. Chernitsyn, A. I. Maklakov i dr. (Vysokomolek. soyed., 6, 2185, 1964). The experimental procedure is described by I. N. Razinskaya, P. V. Koslov i dr. (Vysokomolek. soyed., 5, 1850, 1963). The nmr spectra of polyvinyl chloride

Card 1/3 UDC: 678.049+539.143.43:538.69.083.2

containing dimethylphthalate, dibutylphthalate, and dioctylsebacinate as intra-fiber plasticizer, castor oil and glycerin as inter-fiber plasticizer, and ethylstearate as interstitial plasticizer were studied. The experimental results are presented in graphs and tables (see Fig. 1). It is concluded that the nature of the concentration dependence of the spin-spin proton relaxation time affords

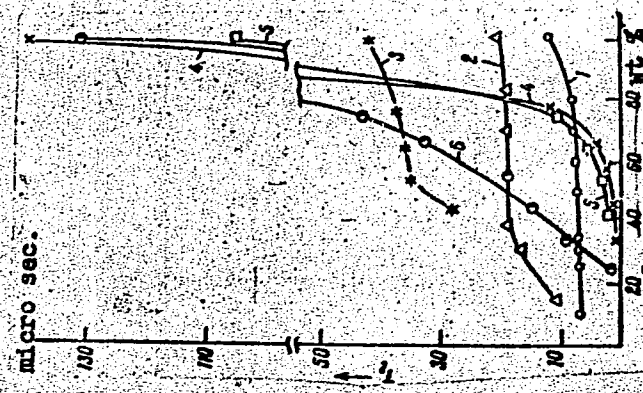


Fig. 1. Dependence of T_2 on the plasticizer content in polyvinylchloride. 1 - castor oil 2 - glycerine; 3 - ethyl-stearate; 4 - dibutylphtha-late; 5 - dimethylphthalate; 6 - dioctylsebacinate.

L 17626-66
ACC NR: AP6001735

a method for determining the plasticizer mechanism in polymers. The authors thank V. A. Voskresenskiy for several of the specimens studied and V. A. Byl'yev for critical appraisal of the experimental results. This paper was presented by B. A. Arbuzov, academician, on 29 April 1965. Orig. art. has: 1 table and 1 figure.

SUB CODE: 11,20 SUBM DATE: 23Apr65/ ORIG REF: 005/ OTH REF: 001

Card 3/3

L 29569-66

ACC NR: [illegible] SOURCE CODE: UR/0190/66/008/006/1007/1011

AUTHOR: [illegible]; [illegible] I.; Shamkina, G. G.; Nikitina, V. I.; Bezzubov, V. [illegible]

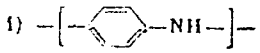
ORG: Kazan [illegible] ...skiy gosudarstvennyy universitet); Institute of Organic Chemistry, [illegible] (Institut organicheskiy khimii AN SSSR)

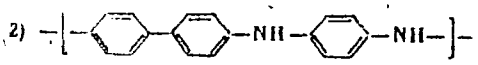
TITLE: Semiconductor properties of polymers containing benzene rings and heteroatoms in the backbone

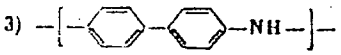
SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 6, 1966, 1007-1011

TOPIC TAGS: semiconducting polymer, benzene ring, imino group, degassing

ABSTRACT: A study has been made of the effect of preliminary degassing on the electrical properties of polymers containing benzene rings and NH-groups in the backbone. Polymers with the following repeat units were prepared:

1) 

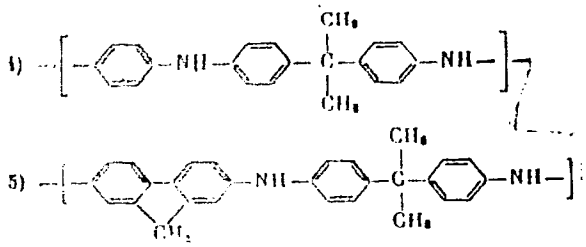
2) 

3) 

Card 1/2 UDC: 678.01:53

L 29569-66

ACC NR: AP6019538



The polymers were identified from their IR spectra. The presence of conjugated bonds was established by UV spectroscopy. The electrical and magnetic properties of the polymers were studied. Degassing of polymer specimens decreased their electrical conductivity. Thorough elimination of low-molecular-weight impurities increased the electrical conductivity of the polymers. The conductivity range of the polymers was 10^{-8} to 10^{-17} mho/cm. Orig. art. has: 1 figure and 3 tables. [BO]

SUB CODE: 11, 20/ [illegible] ORIG REF: 006/ ATD PRESS: 5015

Card 2/2 CC

L 01047-67 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP6019537 SOURCE CODE: UR/0190/66/008/006/1003/1006

AUTHOR: Sagitov, R. Ya.; Maklakov, A. I. 30 B

ORG: Kazan University im. V. I. Ul'yanov-Lenin (Kazanskiy universitet)

TITLE: NMR study of crystallization of certain polymers

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 6, 1966, 1003-1006

TOPIC TAGS: NMR spectrum, crystalline polymer, polymer structure, POLYETHYLENE TEREPHTHALATE

ABSTRACT: Applicability of the NMR technique to the investigation of the crystallization process was examined using polyethyleneterephthalate and several polyamides as model compounds. The secondary momentum of the absorption line, ΔH_2^2, was measured during 20 min to 4 hr crystallization at 20°-190°C. NMR spectra of amorphous and crystalline samples of polymers are graphed. The NMR spectra, as derivatives of the proton absorption indicate, corresponded to 17 megacycles at 20°-190°C. Because of the dependence of the NMR spectrum upon crystallinity, it is concluded that the NMR technique can be utilized in studying the crystallization process. Orig. art. has: 4 figures.

SUB CODE: 07/ SUBM DATE: 27May65/ ORIG REF: 006/ OTH REF: 002

UDC: 678.01:53

awm
Card 1/1

L 33178-66 EWT(l)/EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AR6016221 SOURCE CODE: UR/0058/65/000/011/E023/E023

AUTHOR: Zgadzay, E. A.; Maklakov, A. I. 66 B

TITLE: Magnetic and electric properties of certain polymers with semiconductor properties

SOURCE: Ref. zh. Fizika, Abs. 11E165

REF SOURCE: Sb. Itog. nauchn. konferentsiya Kazansk. un-ta za 1963 g. Sekts.: paramagnitn. rezonansa, spektroskopii i fiz. polimerov, radiofiz., astron., bion. Kazan', 1964, 52-53

TOPIC TAGS: organic semiconductor, magnetic susceptibility, conjugate bond system, temperature dependence, activation energy, semiconductor conductivity

ABSTRACT: The authors measured the static magnetic susceptibility χ and the electric conductivity σ of three polymers with conjugated bonds. χ was measured in the field-intensity interval 500 - 5500 Oe at room temperature, and σ in the range 20 - 110C. It follows from the obtained data that χ varies hyperbolically with the field for all samples, while σ varies in accordance with the usual exponential law with temperature. The experimental data show also the χ changes in the same manner as the activation energy σ. S. Kubarev [Translation of abstract]

SUB CODE: 20

Card 1/1 mc UDC: 538

MAKLAKOV A. YA.

137-58-1-733

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 109 (USSR)

AUTHOR: Maklakov, A. Ya.

TITLE: Reduction in Consumption of Tool Steel for Blanking and Punching Dies (Snizheniye raskhoda instrumental'noy stali dlya vyrubnykh i probivnykh matrits)

PERIODICAL: V sb.: Progressiv. tekhnol. kholodnoshtamp. proizv. Moscow-Leningrad, Mashgiz, 1956, pp 234-244

ABSTRACT: Measures are described and recommendations offered to economize die steel. It is recommended that dies consisting of back-up and working portions be used, with built-up knives for cutting rolled strip. Data for the design for a built-up tool are presented.

Ya.O.

1. Dies—Design 2. Tools—Design

Card 1/1

Маклаков А. Я.

AUTHOR: Maklakov, A.Ya., Engineer. 122-2-11/23

TITLE: The use of built-up dies in piercing and blanking press tools. (Primeneniye sostavnykh matrits v probivnykh i vyrubnykh shtampakh)

PERIODICAL: "Vestnik Mashinostroyeniya" (Engineering Journal), 1957, No.2, pp. 56 - 57 (U.S.S.R.)

ABSTRACT: In the Agricultural Machinery Plant (Zavod Selsko Khozyaystvennykh Mashin) imeni Ukhtomskogo, solid die plates were replaced by a gauge plate die top supported by a die block of structural steel. The gauge plate was hardened and tempered without distortion in a vice type fixture to a hardness of 58-60 Rockwell C. Satisfactory results and a substantial economy of tool steel were achieved with gauge plate thicknesses down to 3 mm after three re-grinds.
There are 4 figures.

Card 1/1

AVAILABLE: Library of Congress

MAKLAKOV, A.Ya., inzh.

Investigating the design of thin blanking dies. Sbor. MOSSTANKIN no.4:222-235 '58. (MIRA 12:4)
(Dies (Metalworking))

MAKLAKOV, A.Ya., inzh.

Lowering the expenditure of tool steel in manufacturing punching and perforating dies. Trakt. i sel'khozmash. no.10:37-41 O '58. (MIRA 11:10)

(Dies (Metalworking))

MAKLAKOV, A. Ya., Cand Tech Sci -- (diss) "Research into the efficiency of cutting dies." Moscow, 1956. 14 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Machine Tool Instrument Inst im I. V. Stalin); 150 copies; price not given; (KL, 21-56, 125)

MAKLAKOV, A.Ya.

Calculating the matrices of blanking dies. Trakt. i sel'khozmash. 33 no.1:35-37 Ja '63. (MI 16:3)

(Dies (Metalworking))

MAKLAKOV, A.Ya.

Manufacture of the parts of the flangeless type of bushings. Trakt. i sel'khozmash. no.7:39-41 Jl '64. (MIRA 18:7)

MAKLAKOV, Afanasiy Fedorovich; KHAKHALIN, Vasiliy Stepanovich; BELEN'KAYA, L.L., red.

[Modern techniques of studying the atmosphere; radiosondes, rockets, artificial earth satellites] Sovremennaia tekhnika issledovaniia atmosfery; radiozondy, rakety, iskusstvennye sputniki Zemli. Leningrad, Gidrometeoizdat, 196... 129 p. (MIRA 17:12)

L 22202-65 EWT(m)/EPF(c)/EWP(j)/T-2 Pc-4/Pr-4 AFWL/SSD/AS(mp)-2/RAEM(c)/RAEM(t) RM

ACCESSION NR: AP5001483 S/0190/64/006/012/2185/2188

AUTHOR: Chernitsyn, A.I.; Maklakov, A.I.; Voskresenskiy, V.A.; Orlova, Ye. M.

TITLE: Study of the efficiency of plasticizers for polyvinyl chloride by nuclear magnetic resonance

SOURCE: Vysomolekulyarnyye soyedineniya, v. 6, no. 12, 1964, 2185-2188

TOPIC TAGS: nuclear magnetic resonance, NMR spectrum, plasticizer, polyvinyl chloride, spin, spin relaxation, spin lattice relaxation, dialkyl phthalate, dialkyl sebacate, dicresyl phosphate

ABSTRACT: NMR spectroscopy was used to determine the spin-spin (T_2) and spin-lattice (T_1) relaxation of plasticized polyvinyl chloride specimens, and the results for T_2 were shown to be a measure of the efficiency of the plasticizers. The samples contained 9-43 wt. % dimethyl, diethyl, dibutyl, dioctyl or dinonyl phthalate, dibutyl or dioctyl sebacate, or dicresyl phosphate. T_2 relaxation times, measured by the spin echo method on the commercial model of a Soviet NMR relaxometer, depended on the proton structure of the plasticizer molecules and on plasticizer concentration. T_2 increased sharply with 30-40 wt. % plasticizer per polymer, while T_1 simultaneously decreased as illustrated in Fig. 1 of the Enclosure. The increase in T_2 was related to the increased

Card 1/2

L 22202-65
ACCESSION NR: AP5001483

mobility of both plasticizer and polymer molecules. Sebacic acid esters gave the highest T_2 values, and this was ascribed to the chemical structure of their molecules causing their good distribution between the polymer molecules. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Kazanskiy Gosudarstvennyy universitet im. V.I. Ul'yanova-Lenina (Kazan State University); Kazanskiy inzhenerno-Stroitel'nyy institut (Kazan Engineering-Construction Institute)

SUBMITTED: 24Feb64 ENCL: 01 SUB CODE: MT, NP

NO REF SOV: 007 OTHER: 003

Card 2/3

L 17800-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10 RPL WW/RM
ACCESSION NR: AP4044747 S/0153/64/007/003/0482/0485

AUTHOR: Voskresenskiy, V. A.; Maklakov, A. I.; Yegorova, L. Ya.; Bikchentayeva, S. Kh.; Orlova, Ye. M.

B

TITLE: The blended polytetrafluorethylene + polyethylene polymer system

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 7, no. 3, 1964, 482-485

TOPIC TAGS: polytetrafluorethylene, polyethylene, x ray diffraction, x ray structural analysis, thermographic study, polymer strength, chemical interaction, copolymer formation

ABSTRACT: Comparative x-ray structural analyses and thermographic studies were made of the blended polytetrafluorethylene and polyethylene system and of the component resins to determine the cause of the increased strength and improved pressure casting processibility of the blended systems. X-ray patterns showed that the radii of the diffraction circles of the component resins were retained in various blends of the two resins, indicating preservation of the initial

Card 1/2

crystal structure. Differential thermal analysis also indicated there was no chemical interaction of copolymer formation. The strengthening effect was explained due to the secondary intermolecular bonding between chains or packs of chains of the initial polymers. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Kazanskiy inzhenerno - stroitel'ny*y institut (Kazansk Construction Engineering Institute) Kazanskiy gosudarstvenny*y universitet im. V. I. Ul'yanova-Lenina (Kazansk State University)

SUBMITTED: 07Dec62 ENCL: 00

SUB CODE: GC, MT NO REF SOV: 003 OTHER: 000

L 21067-65 EPF(c)/EPR/EPA(s)-2/EWP(j)/EWT(m)/T Pc-4/Pr-4/Ps-4/Pt-10/Pa-4
RPL RM/WW

ACCESSION NR: AP4044884 S/0020/64/157/006/1413/1415

AUTHOR: Makhlakov, A. I.; Pimenov, G. G.; Arbuzov, B. A.

TITLE: Nuclear magnetic resonance in pyrolysed polyacrylonitrile

SOURCE: AN SSSR. Doklady*, v. 157, no. 6, 1964, 1413-1415

TOPIC TAGS: polyacrylonitrile, pyrolysis, NMR spectra, pyrolysed polyacrylonitrile

ABSTRACT: Verification of the proposed 2-stage pyrolysis of polyacrylonitrile (PAN) (I-formation of the cyclic structure and conjugation of the C=N bonds and II-reduction of the number of hydrogen atoms and conjugation of the C=C bonds) was sought in this investigation. The NMR spectra of PAN, pyrolysed under 9×10^{-3} mm Hg at 210 and 320C for 3, 6 and 10 hours, were obtained in the -150 to +200C temperature interval. From the analysis of the secondary moment-temperature relationships it was concluded that PAN pyrolysed for 3 hours at 210C had already undergone cyclization to I; the second stage of the reaction started to appear on prolonged pyrolysis at this temperature. The role of the

Card 1/2

L 21067-65
ACCESSION NR: AP4044884

product formed by stage II predominated at 320C. Since H_2^2 was independent of time of pyrolysis at 320C, there was no change in the hydrogen structure of the product obtained; the increased specific conductance was attributed to partial graphitization of the material. Orig. art. has: 1 equation and 1 figure

ASSOCIATION: Kazanskiy gosudarstvenny*y universitet (Kazansk State University)

SUBMITTED: 08Apr64 ENCL: 00 SUB CODE: OC, NP

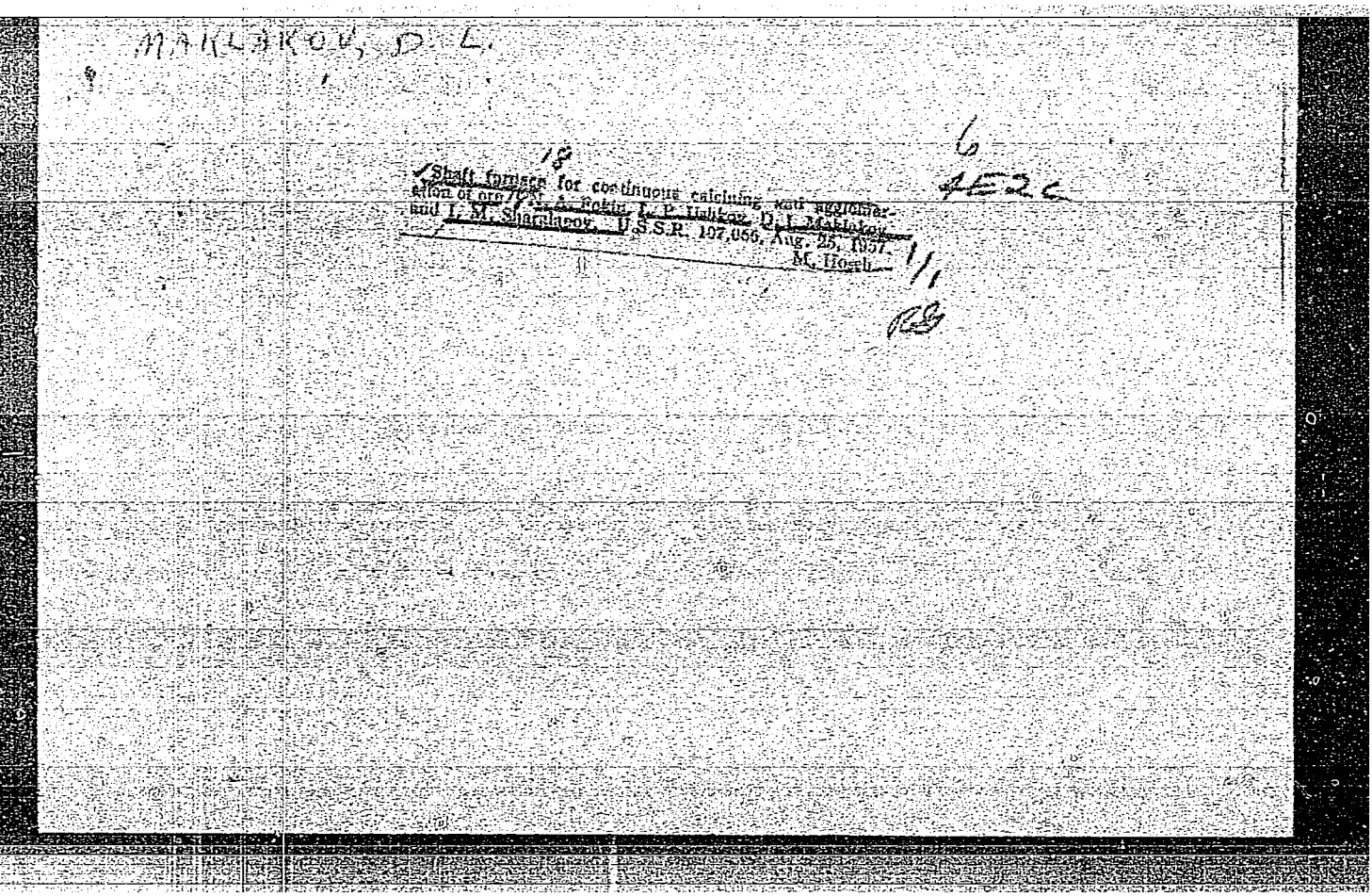
NR REF SOV: 003 OTHER: 004

Card 2/2

MAKLAKOV, B.M., zasluzhennyy vrach RSFSR; KOKIN, M.K., kand.med.nauk

Universities of health in Orel Province. Zdrav. Ros. Feder. 5 no.1:33-36 Ja '61. (MIRA 14:1)

1. Iz Orlovskogo oblzdravotdela (zav. K.A. Trofimov).
(OREL PROVINCE--HEALTH EDUCATION)



MAKLAKOV, I.A.; STEKHNOVSKIY, D.I.

Caprices of winter in 1961-1962. Priroda 51 no.6:126-127 Je '62.
(MIRA 15:6)

1. TSentral'nyy institut prognozov, Moskva.
(Winter)

MAKLAKOV, I.A.; MININA, L.S.

Height of the tropopause over Moscow in the period from 1957 to 1960. Trudy TSIP no.137:21-26 '64.

Fluctuations of tropopause altitude in connection with the temperature variations in the troposphere and lower stratosphere. Ibid.:39-43 (MIRA 17:9

Correlation between the height of the lower boundary of the tropopause and the temperature of the troposphere. Tracy
TSIP no.137 27 3b '64. (MIRA 17:9)

ACC NR: AT6032600 SOURCE CODE: UR/2546/66/000/152/0040/0048

AUTHOR: Minina, L. S.; Maklakov, I. A.

ORG: none

TITLE: Evolution of the tropopause during sudden intrusions of cold air masses

SOURCE: Moscow. Tsentral'nyy institut prognozov. Trudy, no. 152, 1966. Planetarnaya tsirkulyatsiya atmosfery i iskusstvennyy sputniki Zemli (Planetary circulation of the atmosphere and artificial earth satellites), 40-48

TOPIC TAGS: tropopause, air mass, wind velocity

ABSTRACT: The paper describes various stages in the evolution of the tropopause when masses of cold air intrude into the lower latitudes and a corresponding mass of warm air is pushed back into the higher latitudes. In general, an intrusion of cold air mass results in a drop in the tropopause's altitude while, an intrusion of warm air raises the altitude. The fluctuations of the altitude were found to be from 2 to 6 km. Orig art. has: 5 figures.

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 001

Card 1/1

MAKLAKOV, L., inzh.

New brake valves for the ZIL motortrucks. Avt.transp. 39 no.10:37-40 O '61. (MIRA 14:10)
(Motortrucks--Brakes)

MAKIAKOV, L.

Central hand brake for the ZIL-164A and ZIL-157K motortrucks. Avt. transp. 40 no.1:41 Ja '62. (MIRA 15:1)
(Motortrucks--Brakes)