BORISOV, M.; KYNEV, S. [Kunev, S.]; GEORGIYEVA, I. [Georgieva, I.]

On a new rectifying effect in cadmium sulfide monocrystals.
Doklady BAN 15 no.7:715-718 '62.

1. Predstavleno akad. G. Nadzhakovym [Nadzhakov, G.].

BORISOV, M.; VASILEV, V.

Obtaining large monocrystals of cadmium sulfide. Doklady BAN 16 no.5:485-488 '63.

1. Kafedra eksperimental'noy fiziki v fiziko-matematicheskom fakul'tete Sofiyskogo universiteta imeni Klimenta Okhridskogo. Predstavleno akad. G. Nadzhakovym, chl. Redaktsionnoy kollegii, "Doklady Bolgarskoy Akademii nauk."

BORISOV, M., dots.

Diode lasers. Fiz mat spisanie BAN 6 no.1:58-59 '63.

1. Zam.-gl. redaktor i chlen na Redaktsionnata kolegiia, "Fiziko-matematichesko spisanie".

BORISOV, Milko, dots.

Development of the ideas in the physics of electronic processes in crystals. Fiz mat spisanie BAN 6 no. 4:249-275 '63.

1. Assistant Editor, "Fiziko-matematichesko spisanie".

BORISOV, M., dots.

Ultrasonic amplification with the aid of the crystals of piezoelectric semiconductors and semimetals. Fiz mat spisanie BAN 7 no.1 62-63 '64.

1. Deputy Chief Editor, "Fiziko-matematichesko spisanie".

[redacted] A.V, Milko, prof.

Four hundred years since the birth of Galileo Galilei. Fiz mat spisanie BAN 7 no.2:81-90 '64.

1. Deputy Chief Editor, "Fiziko-matematichesko spisanie".

BORISOV, M.; STAINOV, G.; MARTINOV, N.

Ion oscillation of plasma in the cathode region of glow discharge. Doklady B4N 17 no.1:9-12 '64

1. Predstavleno akad. G. Nadzhakovym, chlen Redaktsionnoy kollegii, "Doklady Bolgarskoy Akademii nauk".

ARONOV, D., kand. tekhn. nauk; BORISOV, M., inzh.

New standards for motor oils. Avt. transp. 42 no.11:18-21 N '64. (MIRA 17:12)

1. Nauchno-issledovatel'skiy institut avtomobil'nogo transporta.

BORISOV, M.

International conference of builders and woodworkers. Sov. profsoiuzy 3 no.5:74-77 My '55. (MLRA 8:8)

1. Predsedatel' TsK profsoyuza rabochikh stroitel'stva (Berlin--Building trades--Congresses)

BORISOV, M.

A wide road to new and progressive methods. Sov. profsoiuzy 4 no.9:14-19 S '56. (MLRA 9:10)

1. Predsedatel' TSentral'nogo Komiteta profsoyuza rabochikh stroitel'stva. (Construction insudstry)

BORISOV, M.

Establishing higher norms. Sots.trud. no.4:95-97 Ap '56.
(MLRA 9:11)

(Building machinery industry) (Time study)

BORISOV, M.; BOGOSLOVSKIY, V.

The best builders. Stroitel' no.9:12 S '59. (MIRA 13:3)

1. Starshiy inzhener tresta Ryazan'zhilstroy (for Bogoslovskiy).
(Construction workers)

BORISOV, M.

Alert organizations of the scientific-technological societies are needed in the construction industry. NTO no.9:55-57 S '59. (MIRA 13:1)

1. Predsedatel' TSentral'nogo komiteta profsoyuza rabochikh stroitel'stva i promyshlennosti stroymaterialov.
(Construction industry)

BORISOV, M.; ZUBKOV, P.; KOSTINA, L.; YEFIMOVA, R.; VITCHUK, Boleslav

Builders are introducing new methods. Stroitel' no.12:8-9 D '59. (MIRA 13:3)

1. Predsedatel' TSentral'nogo komiteta profsoyuza rabochikh stroitel'stva i promyshlennosti stroitel'nykh materialov (for Borisov). 2. Nachal'nik otdela truda i zarabotnoy platy Ufimskogo tresta No.3 (for Zubkov). 3. Korrespondent gazety "Znamya stroitelya" (for Yefimova). 4. Brigadir armaturshchikov na zavode zhelezobetonnykh izdeliy Ryazanskogo tresta No.23 (for Vitchuk).

(Building)

BORISOV, M.

The construction industry should be equal to its new tasks.
Sov.profsoiuzy 7 no.1:12-14 Ja '60. (MIRA 12:12)

1. Predsedatel' TSentral'nogo komiteta profsoyuza rabochikh stroitel'stva i promyshlennosti stroitel'nykh materialov.
(Construction industry) (Trade unions)

STROYEV, S., kand.tekhn.nauk; BORISOV, M., inzh.; PUTIN, V., inzh.

Experience in using extra-wide lug-type tires. Avt.transp. 38 no.10: 23-24 O '60. (MIRA 13:10)
(Motortrucks--Tires)

BORISOV, M.; SUYETIN, Yu.

Defects of oil filters and fine purification. Avt.transp. 38 no.10: 24-25 O '60. (MIRA 13:10)

1. Nauchno-issledovatel'skiy institut avtomobil'nogo transporta.
(Motor vehicles--Engines--Oil filters)

BORISOV, M., general-mayor aviatsii

Troop facilities must meet regulation requirements. Tyl i snab.Sov. Voor.Sil 21 no.3:46-49 Mr '61. (MIRA 14:6)
(Russia—Army—Facilities)

BORISOV, M., general-leytenant aviatsii

Housekeeping operations for a unit of antiaircraft defense troops. Tyl i snab. Sov. Voor. Sil 21 no.9:59-62 S '61. (MIRA 14:12)

(Russia--Army--Supplies and stores)

BORISOV, M., inzh.

New fuel consumption norms for special types of motor vehicles.
Avt.transp. 39 no.2:23-25 F '61. (MIRA 14:3)

1. Nauchno-issledovatel'skiy institut avtomobil'nogo transporta.
(Motor vechcles—Fuel consumption)

BORISOV, M., inzh.

Route fuel consumption norms. Avt.transp. 39 no.3:14-16 Mr '61. (MIRA 14:3)
(Motor vehicles—Fuel consumption)

BORISOV, M., inzh.

Norms for the consumption of lubricants. Avt.transp. 39 no.10:20-22 O '61. (MIRA 14:10)

1. Nauchno-issledovatel'skiy institut avtomobil'nogo transporta.
(Motor vehicles--Lubrication)

BORISOV, Mikhail Ivanovich, kand. tekhn. nauk; PANOV, V., red.

[Mechanized grain-cleaning barns] Mekhanizirovannye toka. Saratov, Saratovskoe knizhnoe izd-vo, 1963. 41 p. (MIRA 17:5)

1. Nauchno-issledovatel'skiy institut sel'skogo khozyaystva Yugo-Vostoka (for Borisov).

L 43001-66 T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6031797 SOURCE CODE: BU/0011/65/018/009/0801/0804

AUTHOR: Borisov, M.; Ivanchev, N.; Marinov, M.; Bonchev, L.

ORG: Physics Institute, BAN

TITLE: Positron annihilation in cadmium sulfide monocrystals

SOURCE: Bulgarska akademiya na naukite. Doklady, v. 18, no. 9, 1965, 801-804

TOPIC TAGS: positron, particle annihilation, cadmium sulfide, gamma quantum, valence band, conduction band, crystallography

ABSTRACT: The measurements of the angular correlation between two annihilation gamma quanta during two-photon positron annihilation represents one of the simplest methods for the study of electronic structure of substances. The present article reports on such measurements during positron annihilation in cadmium sulfide monocrystals. The authors obtained different curves for low ohmic and high ohmic crystals and the difference is probably due to the fact that in high ohmic crystals positron annihilation proceeds with the electrons of the valence band of the crystal while in low ohmic crystals part of the positrons annihilate with the conduction band electrons. This paper was presented by Academician G. Nadzhakov on 27 May 1965. Orig. art. has: 2 figures. [JPRS: 34,525]

SUB CODE: 20 / SUBM DATE: 27May65 / ORIG REF: 001 / SOV REF: 001

Card 1/1 MLP

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L 36028-66 T/EWP(t)/EII IJP(c) JD

ACC NR: AP6027348 SOURCE CODE: BU/0011/65/018/012/1091/1094

AUTHOR: Borisov, M.; Marinova, K.; Germanova, K.; Burov, Yu.

ORG: Department of Experimental Physics, Physics Faculty, Sofia University

TITLE: Injected currents in CdS monocrystals caused by pulsed voltages

SOURCE: Bulgarska akademiya na naukite. Doklady, v. 18, no. 12, 1965, 1091-1094

TOPIC TAGS: single crystal, cadmium sulfide, electric current, current density

ABSTRACT: The injected currents in CdS monocrystals generated by pulsed voltages (0-1000 V) at room temperature have been investigated. Crystals up to several tens of microns thick were subjected to pulses having repetition frequencies of 1 to 200 kc and a duration from 5 to 200 sec. The results are in the form of current-voltage diagrams for different operating conditions. Although the currents acheived have a density exceeding those obtained in earlier works (see, e.g., E. Schnuerer, Physica statu solidi, 6, 1963 (K133), no. 3; E. Vatova, Compt. rend. Acad. bulg. Sci., 18, 1965, no. 2, 105), it is still by several orders of magnitude smaller than those predicted by the theory of double injection (Steel, Ando, Lampert, J. Phys. Soc. Japan, 17, 1962, 1729). A subsequent paper will deal with the recombination omission observed at low temperatures. This paper was presented by Academician G. Nadzhakov on 21 September 1965. Orig. art. has: 2 figures. [JPRS: 36,465]

SUB CODE: 20 / SUBM DATE: 21Sep65 / ORIG REF: 002 / OTH REF: 012

Card 1/1 MLP

L 07503-67 ARG/EWP(c)/EWT(d)/EWP(h)/FBO

ACC NR: AP6019557 SOURCE CODE: UR/0416/66/000/001/0068/0072

34
13

AUTHOR: Borisov, M. (Lt. Gen. of aviation)

ORG: none

TITLE: In the interest of the reliable work of military complexes

SOURCE: Tyl i snabzh sov vooruzh sil, no. 1, 1966, 68-72

TOPIC TAGS: air defense system, air force organization, instrument calibration equipment

ABSTRACT: The reliable operation of all military complexes depends primarily on the mastery, technical level, and practical skills of engineers, technicians, and specialists who prepare this complex equipment for use, but at the same time a regular and careful check of the equipment and measuring instruments plays an enormous role. Since the parameters of measuring equipment can change with the course of time under the effect of various factors, it is necessary to check the accuracy of the readings of the equipment at rigorously established periods. This article discusses a system of planning and new methods of calibrating operations for equipment used by air defense troops. Since the measuring equipment cannot be removed without replacement and sent to permanent laboratories for a mandatory check, even for a comparatively short time, and because air defense units are situated over an extensive territory and many of them in remote regions, temporary-duty groups have been created in the author's air

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L 07503-67

ACC NR: AP6019557

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defense district to service the troops. These groups transport their calibration equipment in special railroad cars, trucks which are equipped with reliable shock absorbing systems for the calibration instruments, and in aircraft and helicopters. In this manner the personnel of the temporary-duty groups can calibrate with high accuracy all instruments directly at the place of their installation without disrupting the military readiness of the air defense units. Experience has shown that the work of these groups of checkers and repairmen is the most economic and best method of servicing the equipment.

SUB CODE: 15,14/ SUBM DATE: none

Card 2/2/mb

USSR/Electronics - Communications Nov 51
Pulse Techniques

"Principles of Pulse Radio Communications," M. Borisov

"Radio" No 11, 31-37

Discusses the general principles of pulse radio communications under the following headings: (1) pulse-amplitude modulation; (2) pulse-width modulation; (3) pulse-phase modulation; (4) the effect of interference in pulse modulation. The

208T19

USSR/Electronics - Communications Nov 51
(Contd)

principles of pulse communications were 1st suggested in the USSR by A. N. Shchukin in 1930 and N. M. Izyumov, V. I. Siforov, V. A. Kotel'nikov, and I. S. Gonorovskiy have made important contributions in this field.

208T19

BORISOV, M.

BORISOV, M.

USSR/Radio - Communications, Pulse Dec 51

"Multi-Channel Pulse Communications," M. Borisov

"Radio" No 12, pp 19-26

General discussion under the following subject headings: time division of channels, the distribution and modulation unit, synchronization in pulse radio lines, and radio lines with pulse-code modulation.

208T88

KHANAPETOV, M.V.; BORISOV, M.A.

The AB-4-T/230 gasoline-powered unified electric plant. Biul.tekh.-ekon.inform. no.6:36-38 '58. (MIRA 11:8)
(Electric power plants)

KHANAPETOV, M.V.; BORISOV, M.A.

Power single-phase three-winding autotransformers. Biul.tekh.-ekon.inform. no.1:36-37 '59. (MIRA 12:2)
(Electric transformers)

BORISOV, M.A.; KHANAPETOV, M.V.

The TMG-30 and TMG-30P-type d.c. tachometer generators. Biul. tekh.-ekon.inform. no.12:32-33 '59. (MIRA 13:4)
(Electric generators)

BORISOV, M.A.

The ShBM-400/800 drum-shaped ball mill. Biul.tekh.-ekon.inform. no.8:10-11 '60. (MIRA 13:9)

(Milling machinery)

VCHERASHNIY, R.P.; BORISOV, M.A.

Awards to participants in the Exhibition of Achievements of the National Economy of the U.S.S.R. Prom. energ. 15 no.9:49-52 S '60. (MIRA 13:10)

(Electric engineering--Exhibitions)

BOROVITSKIY, V.N.; BORISOV, M.A.; RYBAL'NIK, T.I., red.; PYATNITSKIY, V.N., tekhn. red.

[Pavilion of the "Electrification of the U.S.S.R." a catalog and guide] Putevoditel'-katalog Pavil'ona "Elektrifikatsiia SSSR". Moskva, 1961. 46 p. (MIRA 15:7)

1. Moscow. Vystavka dostizheniy narodnogo khozyaystva SSSR. Pavil'on "Elektrifikatsiya SSSR."
(Moscow--Exhibitions) (Electrification)

BORISOV, M.A.

Awards to participants of the Exhibition of Achievements of the National Economy of the U.S.S.R. in 1960. Prom.energ. 16 no.9:53-56 S '61. (MIRA 14:8)
(Moscow—Exhibitions)

BORISOV, M.A.

Awarding of the participants of the Exhibition of Achievements of the National Economy of the U.S.S.R. Elek. sta. 32 no. 5:95-96 My '61. (MIRA 14:5)

(Electric engineering—Exhibitions)

BORISOV, M.A.

Awarding the participants of the Exhibition of the Achievements of the National Economy of the U.S.S.R. in 1960. Vest.elektroprom. 32 no.8:58-63 Ag '61. (MIRA 14:8)
(Moscow--Exhibitions)
(Electric apparatus and appliances--Exhibitions)

BOROVITSKIY, V.N.; BORISOV, M.A.; RYBAL'NIK, T.I., red.; SINYUKHIN, V.N., tekhn. red.

[Guige to the Pavilion of the Electrification of the U.S.S.R.] Putevoditel Pavil'ona "Elektrifikatsiia SSSR". Moskva, 1962. 46 p. (MIRA 15:7)

1. Moscow. Vystavka dostizheniy narodnogo khozyaystva SSSR. Pavil'on "Elektrifikatsiya SSSR."
(Moscow--Exhibitions) (Electrification)

BOROVITSKIY, V.N.; BORISOV, M.A.; SMIRNOVA, G.M.; SEDEL'NIKOV, V.I., red.; SERBINA, L.N.; SMIRNOVA, N.S., tekhn. red. MAYOROV, V.V., tekhn. red.

[Economy and efficient use of electric power] Ekonomiia i ratsional'noe ispol'zovanie elektroenergii; po materialam tematicheskoi vystavki. Moskva, VDNKh SSSR, 1962.
No.1. [In its production and distribution] Pri ee proizvodstve i raspredelenii. 23 p. No.2. [In machinery manufacturing enterprises] Na mashinostroitel'nykh predpriiatiiakh. 27 p. No.3. [In electric transport] Na elektrifitsirovannom transporte. 10 p. No.4. [In metallurgy] V metallurgii. 16 p. No.5. [In electrothermics and aluminum elelctrolysis] V elektrotermii i pri elektrolize aliuminiia. 52 p. No.6. [In electrical lighting] V elektroosveshchenii. 19 p. (MIRA 16:8)

(Electric power)

BORISOV, M.A., inzh.; SMORGONSKIY, V.I., inzh.

Awarding of the participants of the Exhibition of Achievements of the National Economy of the U.S.S.R. Vest. elektroprom. 34 no.1:36-38 Ja '63. (MIRA 16:1)
(Moscow--Exhibitions) (Electric equipment industries)

BORISOV, M.A.

Awarding of the participants of the Exhibition of Achievements of the National Economy of the U.S.S.R. Elek. sta. 34 no.3:95 Mr '63. (MIRA 16:3)
(Moscow—Exhibitions)
(Electric industry workers—Rewards, prices, etc.)

BORISOV, M.A.

Awards presented to the participants of the Exhibition of the Achievements of the National Economy of the U.S.S.R. Elek. sta. 34 no.10:94 O '63. (MIRA 16:12)

BORISOV, M.A.

Base loading stations improve the organization of freight operations. Zhel.dor.transp. 47 no.12:15-17 D '65.
(MIRA 18:12)

1. Nachal'nik gruzovoy sluzhby Yugo-Zapadnoy zheleznoy dorogi.

BORISOV, M. E.

28382

Zadachi vnitomtss v organizatsii tsakhtnogo stroityelbstva. (Ugolbnaya prom - stv.) Sbornik rabot vniiomtss (vsyesoyuz nauch-isslyed. In - t organizatsii i mykhanizatsii tsakhtnogo stroit - va), byp. 1, 1949, S. 4 - 11

So: Letopis No. 34

BORISOV, M.B., redaktor.

[Chemical technology and metallurgy of beryllium and beryllium alloys; collection of translations] Khimicheskaia tekhnologiia i metallurgiia berilliia i ego splavov; sbornik perevodov. Part 1. Moskva, Izd-vo inostrannoi lit-ry, 1953. 148 p. (MLRA 7:4)
(Beryllium)

BORISOV, M.B., redaktor; PERELESHINA, A.P., redaktor; VILLENEVA, A.V., [illegible]cheskiy redaktor

[Industrial chemistry and metallurgy of beryllium and its alloys; collection of translations] Khimicheskaia tekhnologiia i metallurgiia berilliia i ego splavov; sbornik perevodov. Moskva, Izd-vo inostrannoi lit-ry. Pt.2. 1953. 188 p. (MLRA 8:3)
(Beryllium)

BORISOV, M.B., kand.tekhn.nauk; CHERNYSHEV, V.G., inzh.

Performance of the ShBM-1 cutter-loader at the 12-Mikhailovskaia Mine in the Donets Basin. Izv.vys.ucheb.zav.; gor.zhur. no.1: 42-47 '59. (MIRA 13:1)

1. Khar'kovskiy inzhenerno-ekonomicheskiy institut.
(Donets Basin--Coal mining machinery)

BORISOV, M.D.; SUPRUNENKO, V.A.; SUKHOMLIN, Ye.A.; VOLKOV, Ye.D.

[Stability of a heavy-current discharge in hydrogen at low electric field strength] Issledovanie ustoichivosti vysokotochnogo razriada v vodorode pri malykh napriazhennostiakh elektricheskogo polia. Khar'kov, Fizikotekhn. in-t AN USSR, 1960. 307-338 p. (MIRA 17:1)
(Electric discharges through gases)

BORISOV, M.D. DECEASED 1962/5
C' 1961

SEE ILC

PHYSICS

MOISEYEV, A.F.; ZHNIKIN, D.Ya.; BORISOV, M.F.

Heat-resistant or ganosilicon coatings. Lakokras.mat. i ikh prim. no.4:35-40 '60. (MIRA 13:10)
(Silicon organic compounds) (Protective coatings)

34689

Z/011/62/019/001/016/017
E073/E136

15.7140

AUTHORS: Nagayeva, A.P., and Zhinkin, D.Ya., and Borisov, M.F.

TITLE: Electro-insulating varnish KM-17 and its application

PERIODICAL: Chemie a chemická technologie. Přehled technické a hospodářské literatury, v.19, no.1, 1962, 38, abstract Ch 62-526. (Lakokras. Materialy, no.5, 1961, 58-60).

TEXT: The organosilicic (silicon) varnish KM-17 has outstanding electrical-insulating properties - it is highly resistant to thermal ageing and to moisture under tropical-climate conditions. It can be used both as impregnation varnish and as a coating (surface varnish) for electrical products made from oxidized (eloxated) Al in the temperature range -60 to +350 °C. It can also be applied as an adhesive varnish for mica insulators and for the insulators constructed from glass fibres for conductors operating at temperatures up to 350 °C. The varnish KM-17 is a 50% solution of the polymethylphenylsiloxane polymer in toluene. 2 figures, 5 tables, 4 references.

Card 1/1 [Abstractor's note: Complete translation.]

REYBAKH, M.S.; TSIRLIN, A.M.; MOZHAYKIN, A.S.; BORISOV, M.F.; TISHINA, N.N.

Studying the continuous process of cohydrolysis of organosilicon monomers used for the manufacture of electric insulation lacquers. Lakokras.mat. i ikh prim. no.2:64-67 '64. (MIRA 17:4)

S/081/62/000/022/084/088
B101/B186

AUTHORS: Nagava, A. P., Zhinkin, D. Ya., Borisov, M. F.

TITLE: Electrical insulating lacquer KM-17 (KM-17) and its use

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 22, 1962, 559, abstract 22P525 (Lakokrasochn. materialy i ikh primeneniye, no. 5, 1961, 58 - 60)

TEXT: The properties of KM-17 organosilicon lacquer (I) consisting of a 50 % solution of polymethyl-phenyl siloxane in toluene were studied. It is shown that films of I supported on oxidized aluminum foil have high insulating properties at 20 - 300°C. Tables indicate the dielectric properties of films of I (1) after thermal aging (200 and 500 hrs at 250 and 300°C); (2) after exposure to 95 - 98 % relative humidity and thermal aging; (3) after the effect of a "thermal shock" (exposure 1 hr each at -60 and at +250°C). It was found that I resisted thermal aging and the effect of tropical humidity; it can , therefore, be used to impregnate and coat products of oxidized Al subject to temperatures between -60 and +350°C, and also to bond and impregnate glass fiber insulations on oxidized conductors exposed to working temperatures of 350°C. [Abstracter's

Card 1/2

Electrical insulating lacquer...

S/081/62/000/022/084/088
B101/B186

note: Complete translation.]

Card 2/2

S/079/63/033/001/019/023
D204/D307

AUTHORS: Losev, V. B. and Borisov, M. F.

TITLE: Synthesis of organosilicon compounds containing the Si-C-N bond

PERIODICAL: Zhurnal obshchey khimii, v. 33, no. 1, 1963, 258-260

TEXT: 2,2,6,6-tetramethyl-4-(4-aminobutyl)-2,6-disilamorpholine (compound I, b.p. 117°C/1 mm Hg, n_D^{20} = 1,4586, d_4^{20} = 0.9253, MR_D = 72.68) and bis-1,4-(2,2,6,6-tetramethyl-2,6-disilamorpholine-4)butane (compound II, b.p. 157°C/1 mm Hg, m.p. 39°C) were synthesized by replacing the α-chlorine in 1,2-bis-(chloromethyl)tetramethyldisiloxane (A) with tetramethylenediamine (B). A was added dropwise, over 40 min, to molten B; the temperature was allowed to rise to 140°C, then fell to 120°C. The mixture was heated for 5 hours at that temperature. The products were extracted from the cooled mixture with anhydrous toluene (which was then distilled off) and were distilled under vacuum. The structures of I and II were

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Synthesis of organosilicon ...

confirmed by ir spectroscopy. Diethylaminomethylmethyldi-iso-propoxysilane (b.p. 73.5°C/5 mm Hg, n_D^{20}= 1.4185, d_4^{20}= 0.8686, MR_D = 71.01) and diethylaminomethyldimethylethoxysilane (b.p. 106°C/20 mm Hg, N_D^{20}= 1.4232, d_4^{20}= 0.8277, MR_D = 58.2) were prepared by reacting, respectively, chloromethylmethyldi-iso-propoxysilane and chloromethyldimethylethoxysilane with diethylamine, by heating at 50°C for 6 hrs, in 65.4 and 34.8% yields. There are 2 figures.

SUBMITTED: February 12, 1962

Card 2/2

L 14351-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10/Pa-4
SSD/AEDC(a)/ASD(p)-3 WW/RM

ACCESSION NR: AP4048205 S/0191/64/000/011/0022/0026

AUTHOR: Molchanov, B. V.; Borisov, M. F.

TITLE: Synthesis and properties of chlorinated polyorganosiloxanes

SOURCE: Plasticheskiye massy*, no. 11, 1964, 22-26

TOPIC TAGS: polyorganosiloxane, silicone, thermoxidative condensation, alkaline polymerization, heat stability, thermal elasticity, phenyltrichlorosilane, dimethyldichlorosilane, chlorinated silicone

ABSTRACT: The authors investigated the rate of the thermooxidative polycondensation and alkaline polymerization of the low-molecular hydrolysis products of di- and trifunctional organosilicon monomers depending on the number of chlorine atoms in the phenyl group, as well as various properties of the resulting polymers such as heat stability, thermal elasticity, fireproofness, and dielectric properties. Chlorinated phenyltrichlorosilane with 1,2,3, or 4 chlorine atoms in the phenyl ring, phenyltrichlorosilane and dimethyldichlorosilane were used as starting products. The conditions of cohydrolysis are given. The polycondensation was effected at 200C. By increasing the number of Cl atoms in the phenyl ring, the rate of thermooxidative polycondensation was increased. A mechanism is also proposed for alkaline polymerization. Polydimethylphenyl and

Card 1/3

polydimethylmonochlorophenylsiloxane were obtained with 0.3% KOH in the form of an aqueous solution at 20 and 30C. It was found that the introduction of one Cl atom into the phenyl ring slows down the rate of polymerization. An increase in the number of Cl atoms from two to three increases the rate of polymerization; with four chlorine atoms in the phenyl group, the polymerization does not reach its end point. Only an increase in the concentration of the solution to 63% leads to gel formation. On the basis of the experimental data, the chlorophenyl groups can be arranged in the following order according to decreasing activity during alkaline polymerization:

$$C_6H_5 > ClH_6H_4 > Cl_3C_6H_2 > Cl_2C_6H_3 > Cl_4C_6H.$$

A study of the thermooxidative destruction of halogen-substituted polydimethylphenylsiloxanes heated at 350 for 24 hours showed that the final degree of destruction was 27.6-30.8% and did not depend on the number of Cl atoms in the phenyl group. The analytical data showed that the Cl atoms are very stable under the given conditions in the polymer molecules. The duration of stability of the chlorinated polymers was 96-166 hrs. at 350C for 50-μ-thick lacquer films, except for tetrachloro-substituted samples (2 hrs). The total weight loss in 24 hrs. at 350C was 18.5-20.1%. The thermal elasticity decreased with an increasing number of Cl atoms. The addition of anthrahydroquinone and azobenzene (1%) had a favorable effect on the heat stability. The

L 14351-65
ACCESSION NR: AP4048205

fireproofness was increased 1.5-fold by one Cl atom, and was doubled by two atoms in the phenyl ring, as compared to non-halogenated polydimethylphenylsiloxane. The thermomechanical properties were also improved by an increase in the number of Cl atoms. For films on steel backing, the introduction of one or two Cl atoms into the phenyl group increased the tensile strength of the polymer on steel 2.5-3.5 times, and the microhardness 2 and 4 times, respectively. The experimental data are plotted, tabulated and discussed in detail. "The authors express their gratitude to Ye. P. Mikheyev and G. V. Motsarev for supplying the chlorine-containing organosilicon monomers, and to T. F. Altukhova and K. B. Ryazanov for the determination of the physico-mechanical properties of the polymers." Orig. art. has: 6 figures, 3 tables and 3 chemical equations.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: OC, MT

NO REF SOV: 006 OTHER: 001

Card 3/3

L 19006-65 EWT(m)/EPF(c)/EPR/EWP(j) Pc-4/Pr-4/Ps-4 AFWL/SSD RM/WW

ACCESSION NR: AP5000747 S/0191/64/000/012/0014/0017

AUTHOR: Molchanov, B.V.; Chukardin, B.P.; Borisov, M.F.; Ryazanov, K.B.

TITLE: An electron microscopic study of chlorine containing organic polysiloxanes during their thermoxidative decomposition

SOURCE: Plasticheskiye massy*, no. 12, 1964, 14-17

TOPIC TAGS: polysiloxane, silicoorganic polymer, polyorganosiloxane, halogenated polysiloxane, polymer structure, electron microscopy, thermooxidative degradation, polycondensation

ABSTRACT: Microstructural changes during heating in air at 200, 250, 350, and 400C were studied by electron microscopy at 1:10,000 magnification with experimental specimens of polyphenyldimethylpolysiloxane, and of polychloro-, polydichloro-, and polytrichlorophenyldimethylsiloxane. The polymers were prepared by cohydrolysis and thermooxidative polycondensation of phenyltrichlorosilane, chlorinated phenyltrichlorosilanes, and dimethyldichlorosilane, and deposited as films from toluene solution. Structural changes in the transparent or semitransparent specimens started at 200-250C and involved the appearance and growth of globules and fibrillae, a loss of transparency, and the emergence of crystalline forms. The changes were less pronounced if only one film surface was exposed to air.

Card 1/2

L 19006-65
ACCESSION NR: AP5000747

Orig. art. has: 9 photomicrographs.

SUBMITTED: 00 ENCL: 00 SUB CODE: MT

NO REF SOV: 004 OTHER: 000

Card 2/2

L 34100-65 EWT(m)/EPF(c)/EPA(w)-2/EWP(j)/T Pc-4/Pab-10/Pr-4 RWH/WW/DJ/RM

ACCESSION NR: AP5007434 S/0286/65/000/004/0062/0062

AUTHOR: Borisov, M. F.; Novitskiy, E. G.; Melyakhova, E. I.

TITLE: Preparative method for organosilicon polymers. Class 39, No. 168444

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 4, 1965, 62

TOPIC TAGS: silicone, organosilicon polymer, polysiloxane gel

ABSTRACT: An Author Certificate has been issued for a preparative method for organosilicon polymers based on a polymethylphenylsiloxane fluid. In order to produce a gel-type polymer whose properties would be preserved at elevated temperatures, the fluid is mixed with 1,2-diethoxymethacrylatetetramethyldisiloxane [sic]. The mixture is thickened with aluminum naphthenate and heated at 150C for 4—6 hr. [SM]

ASSOCIATION: none

SUBMITTED: 08Apr63 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3210

Card 1/1

L 34860-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T/EWA(c) Pc-4/Pr-4/Ps-4/Pt-10 WW/RM

ACCESSION NR: AP5008143 S/0286/65/000/005/0022/0022

AUTHOR: Minsker, Ye. I.; Solovey, G. G.; Borisov, M. F.; Orlov, N. F.

TITLE: A method of preparing polyaluminodiorganosiloxanes. Class 12, No. 168689

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 5, 1965, 22

TOPIC TAGS: elastomer, polymer, aluminum containing polymer, polysiloxane

ABSTRACT: This Author Certificate introduces an improved preparative method for aluminum-containing polysiloxanes utilizing dihydroxypolydiorganosiloxanes and methylpropylsiloxy-bis-(β-chloroalkoxy)-aluminum and triphenylsiloxydiisopropoxy-aluminum as starting materials. This results in a product with improved thermal stability. [VS]

ASSOCIATION: none

SUBMITTED: 29Dec63 ENCL: 00 SUB CODE: oc,cc

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3211

Card 1/1

L 39717-66 EWP(j)/EWT(m)/T IJP(c) RM/GD-2

ACC NR: AF6007968 (A) SOURCE CODE: UR/0191/66/000/003/0033/0036

AUTHOR: Andrianov, K. A.; Varlamova, N. V.; Borisov, M. F. (Deceased); Kolchina, A. G.; Grebenshchikova, G. V.

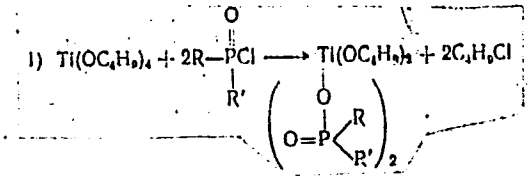
ORG: none

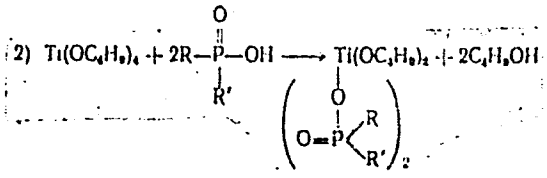
TITLE: Polybis-(organophosphinoxy)-titanomethylphenylsiloxanes

SOURCE: Plasticheskiye massy, no. 3, 1966, 33-36

TOPIC TAGS: organosilicon compound, condensation reaction, thermal analysis, organotitanium compound

ABSTRACT: The author prepared linear polyorganotitaniumsiloxane with a regular distribution of Ti and Si atoms in their chains by a condensation of α, ω -dihydroxymethylphenylsiloxane with bis(methylalkoxyphosphoxy)dibutoxytitanium and studied the influence of the bis(methylalkoxyphosphoxy)titanoxane groups on the properties of the polymers obtained. The bis(organophosphinoxy)dibutoxytitanium compounds were prepared by the reaction of the general scheme:

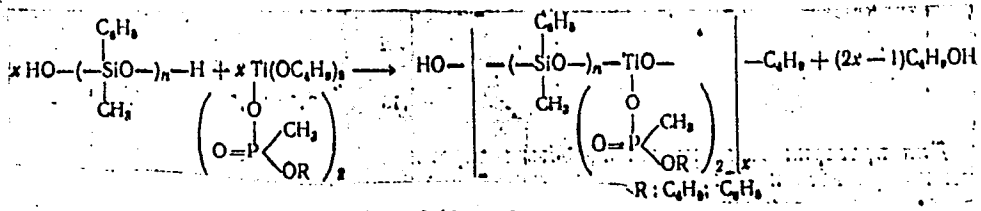




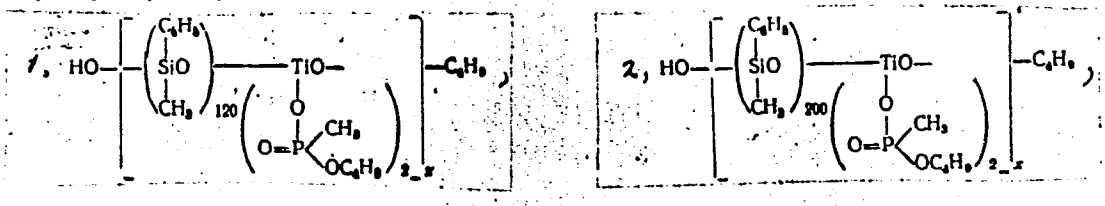
Card 1/4 UDC: 678.84

ACC NR: AP6007968 O

Organophosphinic acid was added to tetrabutoxytitanium by drops, the mixture was mixed thoroughly and the products fractionally distilled . The reaction was exothermic. Thus obtained, bis(organophosphinoxy)dibutoxytitanium compounds were subjected to a condensation with α, ω -dihydroxymethylphenylsiloxane according to the general scheme:

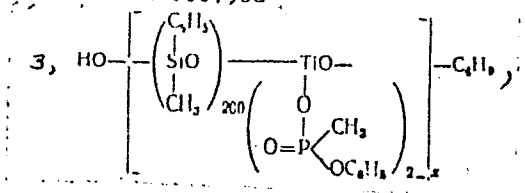


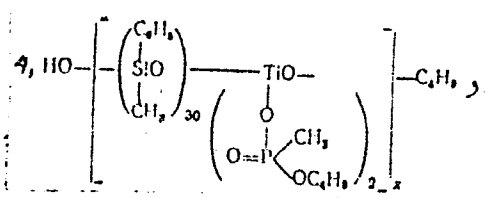
The condensation was performed at 175-180C, first in air, then in N_2, and finally in vacuo (1-2 mm). The following compounds were prepared having a Si/Ti ratio - 30, 50, 90, 120, and 200:

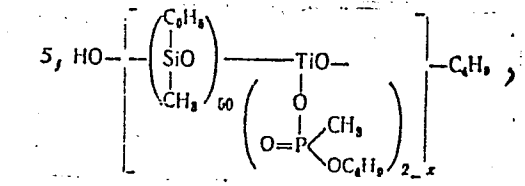


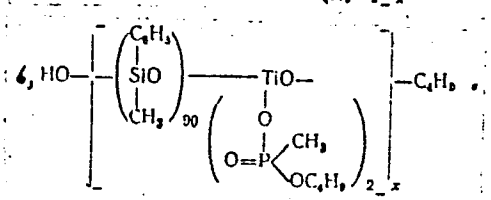
Card 2/4

ACC NR: AP6007968

3, 

4, 

5, 

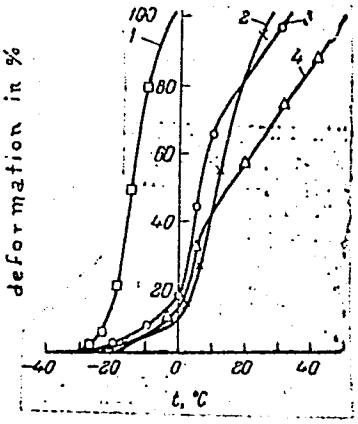
6, 

The properties of the polymers obtained were compared with those of polymethylphenylsiloxane. Their glass temperatures are in the more positive ranges (Fig. 1), and the endo- and exothermal peaks during thermodifferential analysis were at higher temperatures (Fig.2). By heating at 400C for 4 hr in air, their weight losses were lower (Fig.3). Orig. art. has: 4 fig. and 3 tables.

Card 3/4

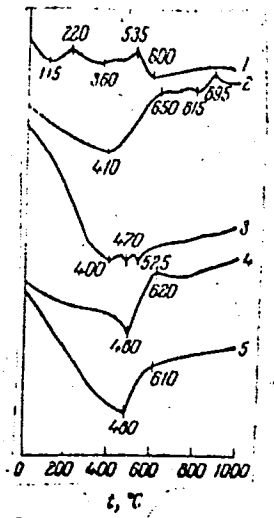
ACC NR: AP 6007968

Fig. 1. Results of thermomechanical study of polyorganophosphinoxytitanium methylphenylsiloxanes



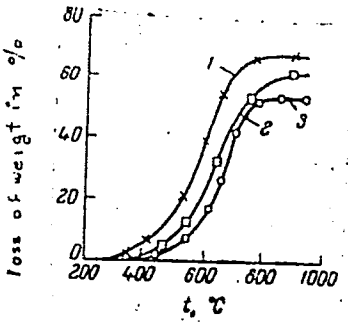
1-polymethylphenylsiloxane; 2—Si : Ti=200; 3—Si : Ti=120; 4—Si : Ti=50.

Fig. 2. Thermodifferential analysis



1-polymethylphenylsiloxane; 2—Si : Ti=200; 3—Si : Ti=120; 4—Si : Ti=90; 5—Si : Ti=50.

Fig. 3. Loss of weight



1-polymethylphenylsiloxane; 2—Si : Ti=90; 3—Si : Ti=200.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 007

Card 4/4 gd

L 37216-66 EWP(j)/EWT(m)/T IJP(c) RM/WW/JWD

ACC NR: AP6018125 (A) SOURCE CODE: UR/0191/66/000/006/0026/0027

AUTHOR: Molchanov, B. V.; Borisov, M. F. (deceased); Grebenshchikova, G. V.

ORG: none

42
41
B

TITLE: Synthesis and properties of polyphenyldimethylmethyl-(gamma-trifluoroprophyl)-siloxanes

SOURCE: Plasticheskiye massy, no. 6, 1966, 26-27

TOPIC TAGS: siloxane, polymerization, heat resistance

ABSTRACT: The effect on polymer properties of introducing methyl-(gamma-trifluoroprophyl)siloxy groups (A) into polyphenyldimethyl-siloxanes was studied. Low molecular weight polyphenyldimethylmethyl-(gamma-trifluoroprophyl)-siloxanes (B) were obtained by reacting dimethylsilicon dichloride, phenylsilicon trichloride and methyl-(gamma-trifluoropropyl)silicon dichloride. B was polymerized at 30°C with 0.3% KOH. Increasing the amount of A in the polymer reduced the alkaline polymerization rate, increased gel time, produced insignificant improvements in mechanical properties of the polymer, increased the rate

Card 1/2 UDC: 678.84.01:53

L 37210-00

ACC NR: AP6018125

of rearrangement processes in the siloxanes, and reduced the thermal stability of the polymers in the 300-600°C range. Orig. art. has: 2 tables, 1 figure and 1 equation.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 003

Card 2/2

ACC NR: AP6013282 (A) SOURCE CODE: UR/0413/66/000/008/0079/0079

INVENTOR: Borisov, M. F.; Molchanov, B. V.; Antonov, R. P.

ORG: none

TITLE: Preparation of chlorinated polyorganosiloxanes. Class 39, No. 180798

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 79

TOPIC TAGS: polyorganosiloxane, organosilicon monomer, chlorinated organic compound

ABSTRACT: This Author Certificate introduces a method for preparing chlorinated polyorganosiloxanes by hydrolytic polycondensation of organosilicon monomers. In order to conduct both the hydrolysis and halogenation simultaneously, the hydrolytic condensation is performed in the presence of an oxidizer such as hydrogen peroxide. [LD]

SUB CODE: 11/ SUBM DATE: 17Nov64/

Card 1/1

UDC: 678.84.944:542.938

BORISOV, M. G. and B. L. MORDKOVICH.

Nagrev krupnykh shesteren tokami vysokoi chastoty pod zakalku. (Vestn. Mash., 1951, no. 3, p. 38)

(Heating and hardening large gears by high-frequency currents.)

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

1. BORISOV, M. G., Eng.; MORDKOVICH, B. L.

2. USSR (600)

4. Escalators

7. Load testing of escalator transmissions by the grounded method, Vest. mash., 32, No. 10, 1952.

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

SOV/51-5-4-2/21

AUTHORS: Sverdlov, L.M., Borisov, M.G. and Tarasova, N.V.

TITLE: Vibrational Spectra of Unsaturated Hydrocarbons (Kolebatel'nyye spektry nepredel'nykh uglevodorodov)
VI. Calculation and Interpretation of Vibrational Spectra of Butene-1, Pentadiene-1,4 and 1,1-Dimethylallene (VI. Raschet i interpretatsiya kolebatel'nykh spektrov buten-1, pentadiyen-1,4 i 1,1-dimetilallena)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 4, pp 354-364 (USSR)

ABSTRACT: Previous parts were reported in papers given by Refs 1-5. The present paper reports calculations of normal vibrations of the butene-1 molecule which is the second member of a homologous series $RCH=CH_2$. Knowledge of the normal frequencies of butene-1 vibrations is important in thermodynamical calculations. The authors investigated also pentadiene-1,4 and 1,1-dimethylallene in order to find the effect of a second double bond in the carbon chain on the spectra of these molecules. Calculation of normal vibrations followed the method described by Yel'yashevich and Stepanov (Ref 15). Bond lengths and angles were chosen as vibrational coordinates (Figs 1-3). Force constants for butene-1 and pentadiene-1,4 were taken from calculations for propylene (Ref 2) and propane (Ref 15). Several new force constants

Card 1/3

Vibrational Spectra of Unsaturated Hydrocarbons. VI. Calculation and Interpretation of Vibrational Spectra of Butene-1, Pentadiene-1,4 and 1,1-Dimethylallene

were determined using a variational method. In the case of 1,1-dimethylallene the authors used force constants of allene (Ref 5) and isobutylene (Ref 1). Tables 1-3 give the vibrational spectra of butene-1, pentadiene-1,4 and 1,1-dimethylallene respectively. The third column in each table gives the calculated frequencies. The fourth and later columns give the observed experimental values. Table 4 gives the interpretation of the fundamentals and harmonics for butene-1. Tables 1-3 show that good agreement was obtained between the calculated and experimentally observed frequencies. Using the results obtained in this paper the authors interpreted Raman spectra of molecules of the $RCH{=}{=}CH_2$ (from pentene-1 to undecene-1) and diallyl (Tables 5, 6). More precise values of the characteristic frequencies of $RCH{=}{=}CH_2$ molecules were obtained and the characteristic frequencies of diolefines and dialkyl-derivatives of allene were

Vibrational Spectra of Unsaturated Hydrocarbons. VI. Calculation and Interpretation of Vibrational Spectra of Butene-1, Pentadiene-1,4 and 1,1-Dimethylallene

calculated. There are 3 figures, 6 tables and 21 references, 11 of which are Soviet, 4 American, 2 German, 1 English, 1 French, 1 translation and 1 other.

ASSOCIATION: Saratovskiy avtodorozhnyy institut i vsesoyuznyy avtodorozhnyy zaochnyy institut (Saratov Automobile Institute and All-Union Highway Correspondence Institute)

SUBMITTED: November 16, 1957

Card 3/3 1. Hydrocarbons--Spectra 2. Molecules--Vibration 3. Mathematics --Applications 4. Roman spectra--Applications

AUTHORS: Sverdlov, L. M., Borisov, M. G., SOV/48-22-9-3/4o
Klochkovskiy, Yu. V., Kraynov, Ye. P., Kukina, V. S.,
Tarasova, N. V.

TITLE: Theory of the Vibration Spectra of Unsaturated Compounds
(Teoriya kolebatel'nykh spektrov nepredel'nykh soyedineniy)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958,
Vol 22, Nr 9, pp 1o23 - 1o25 (USSR)

ABSTRACT: On the basis of abundant experimental information on
unsaturated compounds the authors tried to generalize
the conclusions drawn from it in two directions.
The determination of the characteristic frequencies
of some structural groups with a double bond and the
observation of the mutual influence of the structural
elements. To solve these problems, normal oscillations
and the constants of the potential energy were computed
by means of the theory of the small vibrations of
polyatomic molecules (Refs 1-2). Partial results of
these computations have been published already before
(Ref 3). The basic results of the present paper can be condensed

Card 1/4

as follows: The substitution of the hydrogen atoms by alkyl radicals in ethylene leaves the field of the remaining ethylene groups as well as the field of the alkyl radicals almost unchanged. The geometrical distribution of the alkyl radicals with respect to the double bond plays an essential role with regard to the spectrum. The calculations show that in the case of two double bonds that are separated by at least two single bonds the former ones exert almost no influence on each other. On the basis of the computation of the oscillation frequency of cyclopentene the spectrum of the molecule combination dispersion was for the first time interpreted with success. The frequencies and the force constants of some bromine-, chlorine,- and fluorine-substituents of ethylene were computed theoretically. Because of comprehensive data on the spectra of the deutero-substituted molecules it was possible to carry out an exact computation of the force constants. The good agreement between the computed and the observed frequencies proves the correctness of the whole system of constants. Compared with the halogen

substituents of saturated hydrocarbons the stability of the C-Br-, C-Cl-, and C-F-bonds in unsaturated compounds is somewhat higher. For the first time $\frac{\partial P_i}{\partial Q_j}$ was computed in the first approximation of the optical valence scheme. On this occasion μ_{CH} and μ'_{CH} had, as expected, the same values for the oscillations of all types of symmetry. Thus the calculation has shown that the optical valence scheme only in first approximation is applicable to the computation of the intensities in infrared spectra. There are 4 references, 3 of which are Soviet.

ASSOCIATION: Saratovskiy avtodorozhnyy institut (Saratov Highway Institute); Vsesoyuznyy avtodorozhnyy zaochnyy institut (All-Union Highway Institute for Correspondence Courses)

S/051/60/009/004/003/034
E201/E191

AUTHORS: Sverdlov, L.M., and Borisov, M.G.

TITLE: Vibrational Spectra of Unsaturated Hydrocarbons. IX. Calculation and Interpretation of the Vibrational Spectra of Deuteroallenes and Methylallene

PERIODICAL: Optika i spektroskopiya, 1960, Vol 9, No 4, pp 432-437

TEXT: In preceding papers (Refs 1, 2) the authors discussed vibrational spectra of allene, tetradeuteroallene, and 1,1-dimethylallene. The present paper extends the earlier work to calculation of the vibrational spectra of partly deuterated allenes: monodeuteroallene, 1,1-dideuteroallene, 1,3-dideuteroallene, trideuteroallene, as well as methylallene. Calculation of the normal-vibration frequencies followed the method of Yel'yashevich and Stepanov (Ref 3). The bond lengths and angles were used as the natural vibrational coordinates; these coordinates are shown in Figs 1-3 for monodeuteroallene, 1,1-dideuteroallene, and methylallene, respectively. Tables 1 and 2 give the calculated and observed frequencies (in cm^{-1}) of all the five molecules considered here, as well as an interpretation of the spectra of 1,1-dideuteroallene and

Card 1/2

S/051/60/009/004/003/034
E201/E191

Vibrational Spectra of Unsaturated Hydrocarbons. IX. Calculation and Interpretation of the Vibrational Spectra of Deuteroallenes and Methylallene

methylallene. There was a good agreement between the calculated and empirical values. The fundamental frequencies of methylallene were used to interpret the remaining frequencies as harmonics or combination frequencies (Table 3). The results of calculation were used to predict the characteristic frequencies of monoalkyl derivatives of allene $RCH{=}C{=}CH_2$; the experimental values agreed quite well with these predictions (Table 4).

There are 3 figures, 4 tables and 13 references: 5 Soviet, 6 English, 1 French, and 1 translation into Russian.

SUBMITTED: December 24, 1959

Card 2/2

L 13093-63 EPF(c)/BDS/EWT(m) Pr-4 RM/RH/WW

ACCESSION NR: AP3003407 S/0051/63/015/001/0031/0037

AUTHOR: Borisov, M.G.; Sverdlov, L.M.

60
59

TITLE: Vibrational spectra of unsaturated hydrocarbons. 11. Integral intensities and polarizations in the Raman and infrared absorption spectra of allene and tetradeuteroallene

SOURCE: Optika i spektroskopiya, v.15, no.1, 1963, 31-37

TOPIC TAGS: spectral line intensity, bond polarizability, spectrum calculation, allene tetradeuteroallene, unsaturated hydrocarbons

ABSTRACT: Using the results of earlier calculations (Optika i spektroskopiya, 8, 594, 1960 and Optika i spektroskopiya, Sbornik 2, p.308, L.1963) of the electro-optical parameters (dipole moments, bond polarizabilities and their derivatives with respect to bond lengths and angles), the authors calculated in the first approximation of the valence-optical theory of Vol'kenshtein, Yel'yashevich and Stepanov (Kolebaniya molekul /Molecular vibrations/, Vol.2, M.1949) the values of the integral intensity and polarization in the Raman and infrared absorption spectra of allene (propadiene) (C_3H_4) and tetradeuteroallene (C_3D_4). The allene molecule belongs to the D_{2d} symmetry group. The directions of polarization of the C-H bond were assumed by analogy with ethylene. The calculated values are tabulated and

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L 13093-63
ACCESSION NR: AP3003407

compared with qualitative experimental data. To explain some of the high line intensities it proved necessary to introduce supplementary electro-optical parameters. In the case of the infrared spectra reasonably good agreement between the calculated and observed intensities is obtained for most, but not all, the bands. "In conclusion the authors thank A.G.Finkel' for evaluation of the integral intensities of allene and tetradeuteroallene on the basis of the experimental results of Reference 7 [R.Lord and P.Venkateswarlu, J.Chem.Phys.,20, 1237, 1952]." Orig.art.has: 1 figure, 8 equations and 2 tables.

ASSOCIATION: none

SUBMITTED: 31Oct62 DATE ACQ: 30Jul63 ENCL: 00

SUB CODE: PH,CH NO SOV REF: 008 OTHER: 004

Card 2/2

FINKEL', A.G.; BORISOV, M.G.; SVERDLOV, L.M.

Experimental and theoretical study of the absolute intensities of infrared spectra of hydrocarbons in the gaseous phase. Part 2. Opt. i spektr. 19 no.1:65-70 Jl '65. (MIRA 18:8)

L 49778-65 EPF(c)/EWT(1)/EWT(m) Pr-4 IJP(c) RM
ACCESSION NR: AR5012237 UR/0058/65/000/003/D015/D015

SOURCE: Ref. zh. Fizika, Abs. 3D103

AUTHORS: Borisov, M. G.; Prokof'yeva, N. I.; Sverdlov, L. M.; Tarasova, N. V.; Finkel', A. G.

TITLE: Investigation of intensities of vibrational spectra of molecules of different classes

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR, vyp. 1, 1964, 199-203

TOPIC TAGS: vibrational spectrum, electro optical parameter, infrared spectrum, spectral intensity, hydrocarbon molecule

TRANSLATION: The intensities and polarizations of vibrational spectra and the electronic parameters were calculated for 26 molecules: CH_4, C_2H_6, C_3H_4, C_3H_6, C_4H_6, C_4H_8, C_6H_{12}, olefins and their isotopic substitutes. The intensities of the infrared spectra and electro-optical parameters are calculated for 15 molecules: C_3H_4, C_3H_6, C_4H_6, C_4H_4, C_5H_{10}, C_6H_{12}, olefins and their deuterium substitutes. The

Card 1/2

L 49778-65
ACCESSION NR: AR5012237

experimental data on the intensities, obtained by the authors, were used for the calculations.

SUB CODE: OP, OC ENCL: 00

0353

Card 2/2

BORISOV, M.G.; SVERDLOV, L.M.

Vibrational spectra of unsaturated hydrocarbons. Part 12.
Opt. i spektr. 17 no.6:842-847 D '64. (MIRA 18:3)

L 61666-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM
ACCESSION NR: AP5011135 UR/0051/65/018/004/0724/0725

35
B

AUTHORS: Borisov, M. G.; Finkel', A.G.; Sverdlov, L. M.

TITLE: An experimental and theoretical investigation of the absolute intensities of the infrared spectra of gaseous hydrocarbons

SOURCE: Optika i spektroskopiya, v. 18, no. 4, 1965, 724-725

TOPIC TAGS: gaseous hydrocarbon, infrared spectrum, olefin, electro-optical parameter, methyl group, tetramethylethylene, absorption spectrum, absolute intensity

ABSTRACT: This is a continuation of an earlier investigation of the absolute intensities of the infrared bands of propylene and isobutylene (Opt. i spektr. v. 18, no. 6, 1965). The purpose of the present investigation was to measure the absolute intensities of the infrared bands of gaseous tetramethylethylene and to verify the use of the electro-optical parameters of the metal group

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of propylene and isobutylene to explain the intensity distribution in the infrared spectrum of tetramethylethylene. The absorption spectrum of the tetramethylethylene was recorded with an IKS-6 infrared spectrometer with LiF and NaCl prisms. The absolute integrated intensities were determined by the Wilson-Wells extrapolation method. The conditions for recording the spectra and the method of determining the absolute intensities have been presented previously (Opt. i spektr. v. 15, 195, 1963). The error in the measurements of the intensity for a group of bands is 5 to 10 per cent. The measured absolute intensities of the absorption bands are tabulated. The normal coordinates of tetramethylethylene were calculated with an electronic computer. The infrared band densities were calculated by using the electro-optical parameters of the CH_3 group from the authors' earlier work. The introduction of these parameters has improved the agreement between the calculated and measured intensities in some sections of the spectrum and provides for complete explanation of the intensity distribution in the infrared spectrum of tetramethylethylene. The maximum

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relative error is 15 per cent, which is only slightly higher than the error in measuring the intensities. It is thus concluded that the electro-optical parameters of the CH_3 group of propylene and isobutylene can be used to calculate the infrared band intensities of tetramethylethylene. This confirms the possibility of transferring the electro-optical parameters of less complex olefins to the calculation of the intensities of more complex olefinic hydrocarbons. Original article has: 2 formulas and 1 table

ASSOCIATION: None

SUBMITTED: 03Aug64 ENCL: 00 SUB CODE: OP, OC

NR REF SOV: 004 OTHER: 001

Card 3/3

BORISOV, M.I., Cand Tech Sci -- (diss) "Study of the production of the disk grating machine for the drying of small seeds." Saratov, 1958, 20 pp with drawings (Min of Agr USSR. Saratov Agr Inst) 150 copies (KL, 26-58, 105)

SHEYNIN, Aleksandr Mikhaylovich; BORISOV, Mikhail Ivanovich; FILIN, A.G., red.; DONSKAYA, G.D., tekhn. red.

[Standards of liquid fuel consumption for automobiles; reference book] Normy raskhoda zhidkogo topliva dlia avtomobilei; spravochnik. Moskva, Nauchno-tekhn. izd-vo M-va avtomobil'nogo transp. i shosseinykh dorog RSFSR, 1961. 174 p. (MIRA 14:7)
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BORISOV, M.I., aspirant; BORISYUK, Yu.G. [Borysiuk, IU.H.]

Chemical analysis of the bedstraw Galium ruthenicum. Farmatsev. zhur. 18 no.4:75-78 '63. (MIRA 17:7)

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PRUSYANTSEV, N.V., kand. tekhn. nauk; ARONOV, D.M., kand. tekh. nauk; BORISOV, M.V., inzh.

Operational testing of oils. Eksp1.-tekh. svois. i prim. avt. top. smaz. mat. i spetszhid. no.3:65-76 '63.

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BORISOV, M.I., inzh.

The LZ-266 (1-13c improved) for the wheel hub bearing of motor vehicles. Ekspl.-tekh. svois. i prim. avt. top. smaz. mat. i spetszhid. no.3:91-100 '63.

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SHEYNIN, Aleksandr Mikhaylovich; BORISOV, Mikhail Ivanovich; BELOTSERKOVSKAYA, S.I., red.

[Norms of liquid fuel consumption for motor vehicles; a handbook] Normy raskhoda zhidkogo topliva dlia avtomobilei; spravochnik. Izd. 2., dop. i perer. Moskva, Transport, 1964. 207 p. (MIRA 17:11)

BORISOV, M. I.

PA 196T90

USSR/Metals - Castings, Grinding Jun 51

"Complex Mechanization and Automatization of Castings Trimming," M. I. Borisov, E. G. Rutter, I. I. Sankov, Engineers

"Liteyn Proizvod" No 6, pp 4-7

Describes method used at Gor'kiy Automobile Plant for trimming cast-iron castings. All castings are divided into 9 groups by shape and sizes, and location of spots to be ground. Ten various types of automatic and semiautomatic grinders were designed for abrasive

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USSR/Metals - Castings, Grinding (Contd) Jun 51

trimming of castings in all groups. Construction of these grinders provides for replaceable fixtures, which secure quick and reliable fastening of castings, automatic forced feed, high cutting speed (up to 50 m/sec), increased feeding rates and cutting depths. Brief description and schematic drawings of 3 grinders.

196T90

BORISOV, M. I.

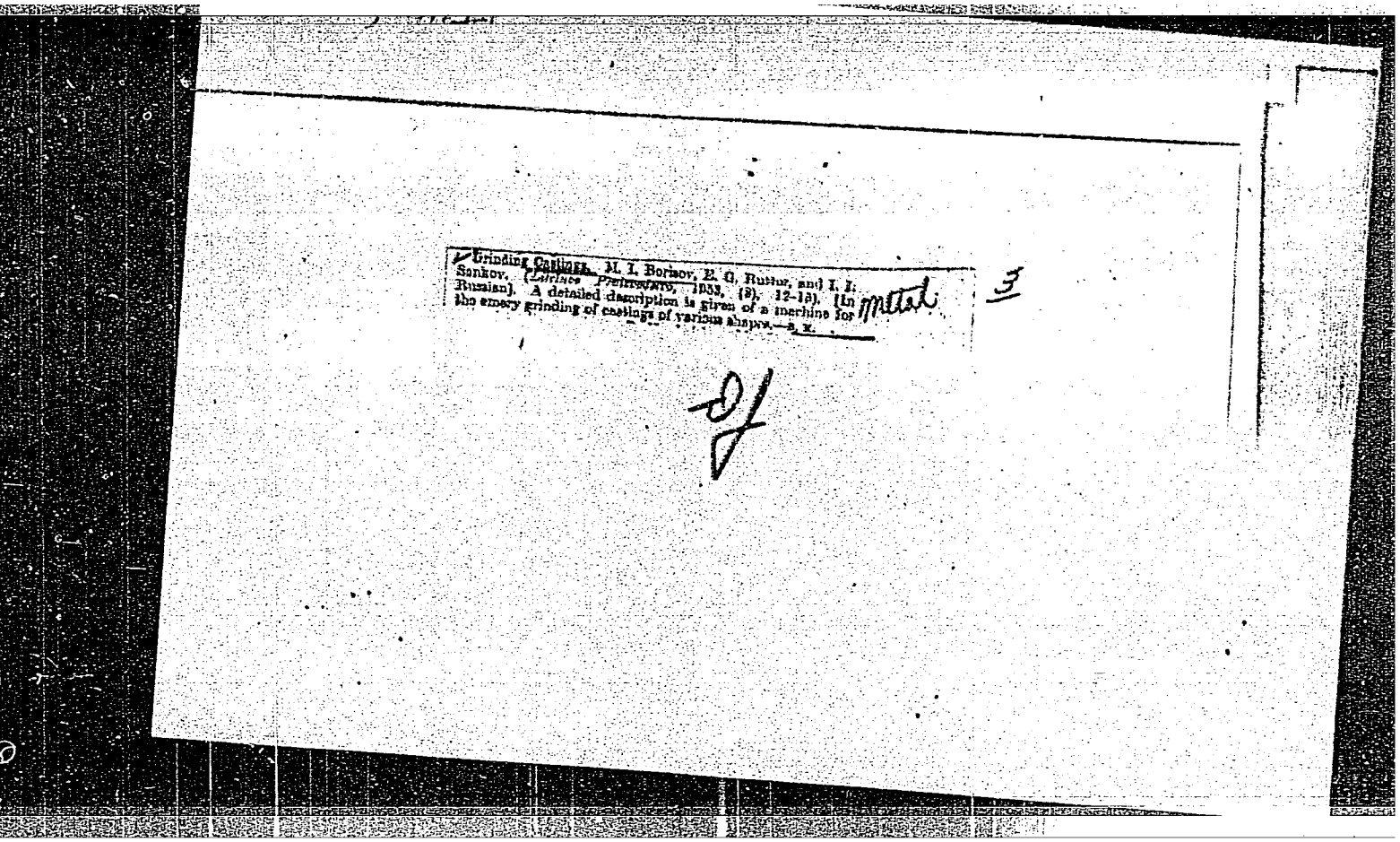
USSR/Engineering - Foundry, Equipment Mar 52

"Grinding the Flanges of Castings," M. I. Borisov, E. G. Rutter, I. I. Sankov, Engineers

"Litey Proizvod" No 3, pp 16-19

Describes 2 types of semiautomatic grinders, for small castings up to 5 kg in wt and for larger castings, such as brake drums and the like. Gives and discusses kinematic diagrams of both grinders and diagrams of their elec systems.

212T73



Grinding Castings. M. I. Borisov, E. G. Rutkur, and I. I. Sankov. (*Liteinoe Proizvodstvo*, 1953, (3), 12-13). [In Russian]. A detailed description is given of a machine for the emery grinding of castings of various shapes.—S. K.

metal

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PHASE I BOOK EXPLOITATION SOV/4358

Trud i tekhnika v semiletke (Labor and Engineering in the Seven-Year Plan) Moscow, Profizdat, 1960. 325 p. (Series: Massovaya biblioteka rabochego) 10,000 copies printed.

Compiler: S. G. Krylov; Ed.: A. V. Anisimov; Tech. Ed.: A. A. Golichenkova.

PURPOSE: This book is intended for the general reader.

COVERAGE: The book is a collection of 19 articles dealing with the achievements and progress of the Soviet economy and in science. Plan in branches of the Seven-Year Attention is given to power plant construction, machine building, cybernetics, electrification, transportation, prospecting, steel production, production of consumer goods, mechanization of agriculture, and chemistry. Suggestions for further progress are made. No personalities are mentioned. There are no references.

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Breyev, B. D. [Director, Tsentral'nyy nauchno-issledovatel'skiy institut kozhevennoy i obuvnoy promyshlennosti (Central Scientific Research Institute of the Leather and Footwear Industry)] Half a Billion Pairs of Shoes 320

Kamenskiy, A. N., Member, All-Union Academy of Agricultural Sciences imeni V. I. Lenin. Large-Scale Mechanization of Agriculture 325

Zhukov, V. V. [Corresponding Member, Academy of Sciences USSR, Honored Scientist and Technologist] A Big Leap in the Book 341

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