

LUBENETS, P.A., doktor sel'skokhozyaystvennykh nauk; TVERDOKHLEB, N.S.,  
agronom.

Cultivation practices for perennial grasses on the "Kuban" State  
Farm. Zemledelis 4 no.5:23-27 My '56. (MLBA 9:8)  
(Gul'kevichi District--Grasses)

TVERDOKHLEB, P.Ye. (Novosibirsk)

Set of components for idealized models of analog-to-digital converters. Avtometriia no.2:43-52 '65. (MIRA 13:9)

ACC NR: AP6026457

SOURCE CODE: UR/0410/66/000/002/0090/0098

AUTHOR: Korshever, I. I. (Novosibirsk-Leningrad); Smolov, V. B. (Novosibirsk-Leningrad); Tverdokhlebo, P. Ye. (Novosibirsk-Leningrad); Fomichev, V. S. (Novosibirsk-Leningrad)

ORG: none

TITLE: One possibility for construction of digital analog functional converters

SOURCE: Avtometriya, no. 2, 1966, 90-98

TOPIC TAGS: digital analog converter, circuit design, mathematic analysis

ABSTRACT: A method is described for the construction of digital-analog functional converters based on preliminary expansion of the function into a series by Walsh functions. It is shown that the elements of the digital-analog converter are interpreted easily by the category of this expansion. Examples are presented of the realization of some digital-analog functional converters. The limitations within which the application of this method will give a gain in comparison with known methods are determined. The advantages of converters constructed using Walsh function expansion are simplicity of the analog portion of the circuit and the constant output impedance of the analog portion of the circuit, which allows them to be used with any load without disrupting the nature of the dependence reproduced. Orig. art. has: 2 tables, 7 formulas, and 4 figures.

SUB CODE: 09,12/ SUBM DATE: 27Nov65/ ORIG REF: 003

Card 1/1

UDC: 681.142.621

ACC NR: AM6004772

Monograph

UW

Karandeyev, Konstantin Borisovich; Karpyuk, Bogdan Vladimirovich; Kasperovich, Aleksandr Nikolayevich; Pushnoy, Boris Mikhaylovich; Rabinovich Vladimir Izrailevich; Sinitsyn, Boris Sergeyeovich; Tverdokhle, Petr Yemel'yanovich; TSapenko, Mikhail Petrovich

Electrical methods of automatic control (Elektricheskiye metody avtomaticheskogo kontrolya) Moscow, Izd-vo "Energiya", 1965. 383 p. illus., biblio. 10,000 copies printed

TOPIC TAGS: automatic control design, automatic control equipment, data processing

PURPOSE AND COVERAGE: The book, written by staff members of the Institute of Automation and Electrometry of the Siberian Department of the Academy of Sciences SSSR, deals with electric automatic control systems, their structure, and their principal elements and characteristics. The emphasis is on the relation between production quality control and automatic inspection of the manufactured products, and emphasizes statistical methods, automatization of various measurements, and the handling of the information and data generated by the automatic control devices. Different systems, components, and individual control and measurement equipment are also described. Chapter 1 was written by K. B. Karandeyev, B. V. Karpyuk, A. N. Kasperovich, V. I. Rabinovich, P. YE. Tverdokhle, and M. P. TSapenko, Ch. 3 by V. I. Rabinovich and M. P. TSapenko, Ch. 4 by B. S. Sinitsyn, Chs. 5 and 6 mainly by B. V. Karpyuk, Chs. 7 and 8 by A. N. Kasperovich, Ch. 9 by B. M. Pushnoy, Chs. 11 and 12 mainly by P. E. Tverdokhle, and the appendix by B. V. Karpyuk. Authors thank the scientific workers

Card 1/3

UDC: 621.317

ACC NR: AM6004772

V. M. YEFimov and G. G. Matushkin who wrote the main material of Chs. 2 and 10 respectively; and also to the scientific staff members M. A. Rozov, G. A. Shtamberger, G. YE. YEremenchuk, YU. I. Baklanov, and others for supplying some data and for a discussion of individual problems considered in the book. They also thank L. YE. Pinchuk for participating in the preparation of the manuscript.

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Card 2/3

ACC NR: AM6004772

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Ch. 11. Composition of devices and classification of automatic control systems.

Automatic control systems with single utilization of the control-channel devices

- - 309

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SUB CODE: 13/    SUBM DATE: 30 Jun 65/    ORIG REF: 198/    OTH REF: 066

Card 3/3

L 06557-67 EWT(d)/EWP(1) IJP(c) GG/BB  
ACC NR: AP6015234 (N)

SOURCE CODE: UR/0410/65/000/002/0043/0052

AUTHOR: Tverdokhle, P. Ye. (Novosibirsk)

ORG: none

TITLE: The selection of components for idealized models of analog-to-digital converters 16C 24 13

SOURCE: Avtometriya, no. 2, 1965, 43-52

TOPIC TAGS: analog digital converter, computer component

ABSTRACT: A generalized analog-to-digital converter model was developed which is applicable to the analysis of a large class of such converters. The model was analyzed by congruence of the sets of components; it was assumed that quantization and numeric coding of the measured values occur during the measurement process. Four major sets of parameters which quantitatively define the developed simulator model are defined; one of the parameters simultaneously defines the number of scale graduations of the analog, and the number of lines of the matrix, and thus the number of states of the model. The developed concepts of structural and functional evaluation of simulator models can be used in the quantitative evaluation of the complexity of various classes of analog-to-digital converters. The authors thank Doctor of technical sciences M. P. Tsapenko and Candidates of technical sciences A. N. Kasperovich and B. V. Karpyuk for their com-

Card 1/2

UDC: 681.2.082+621.317.08

L 06557-67

ACC NR: AP6015234

ments throughout the preparation of this paper. Orig. art. has: 3 figures, 15 formulas.

SUB CODE: 09/      SUBM DATE: 23Sep64/      ORIG REF: 004/      OTH REF: 001

Card 2/2 *MAE*



KARANDEYEV, Konstantin Borisovich; KARYUK, Bogdan Vladimirovich;  
KASPEROVICH, Aleksandr Nikolayevich; PUSINOV, Boris  
Mikhaylovich; RABINOVICH, Vladimir Izrailevich; SINITSYN,  
Boris Sergeevich; TVERDOKHLEB, Petr Yemel'yanovich;  
TSAPENKO, Mikhail Petrovich; ~~Prinimal'sobremennye:~~ ~~HERIMOV,~~  
V.M., nauchn.sotr.; MATUSHKIN, G.G., nauchn.sotr.

[Electrical methods in automatic control] Elektricheskie  
metody avtomaticheskogo kontrolya. Moskva, Energiia,  
1965. 383 p. (MIRA 18:8)

**"APPROVED FOR RELEASE: 04/03/2001**

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APPROVED FOR RELEASE: 04/03/2001

CIA-RDP86-00513R001757620020-1"

ACC NR: AP7003845

(A)

SOURCE CODE: UR/0122/67/000/001/0045/0047

AUTHORS: Tverdokhlebo, V. G. (Engineer); Kuz'min, N. P. (Candidate of technical sciences, Docent)

ORG: none

TITLE: Slip bearings of AST-T plastic and of its compositions

SOURCE: Vestnik mashinostroyeniya, no.1,1967, 45-47

TOPIC TAGS: bearing material, antifriction bearing, wear resistance, friction coefficient, plastic, bronze/ AST-T plastic, Br. OTsS 6-6-3 bronze

ABSTRACT: The results of tests of slip bearings with bushings of AST-T plastic are discussed. The bearings operated in oil on a test bench with three working friction sections. The AST-T plastic contained fillers of S-1 colloidal graphite, barium sulfate, zinc oxide, and talc. For comparison, bushings of Br. OTsS 6-6-3 bronze were also studied. It was found that increasing the filler content above 5--10% caused practically no improvement in the antifriction properties of the bushings (see Fig. 1). The wear resistance and bearing capacity of the AST-T bearings applied to the GA-301 pump were tested. The resistance of AST-T was found to be 1.64 times greater than that of capron. After 1200 hrs of operation in oil, the bearing capacity of the AST-T bearings was no less than that of the capron and bronze ones.

Card 1/2

UDC: 621.822.5:678.5

ACC NR: AP7003845

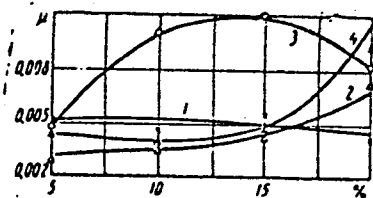


Fig. 1. Effect of filler in AST-T plastic on friction coefficient  $\mu$ :  
1 - talc; 2 - zinc oxide; 3 - graphite; 4 - barium sulfate

Orig. art. has: 5 graphs and 1 diagram.

SUB CODE: (3,11/ SUBM DATE: none/ ORIG REF: 004

Card 2/2

TVERDOKHLEBOV, V.I.; TRETENKO, M.Ye.

Measurement of the free electron temperature in a rarefied acetylene-air flame. Zhur. tekhn. fiz. 35 no.6:1044-1046 Je '65. (MIRA 18:7)

1. Dnepropetrovskiy gornyy institut imeni Artema.

TVERDOKHLEB, V.I.

Improving the quality of first-aid kits for collective farms.  
Apt. delo 3 no.4:43 JI-Ag '54. (MLRA 7:8)

(PHARMACY,

\*in Russia, in collective farms)

(RURAL CONDITIONS,

\*in Russia, pharmacies in collective farms)



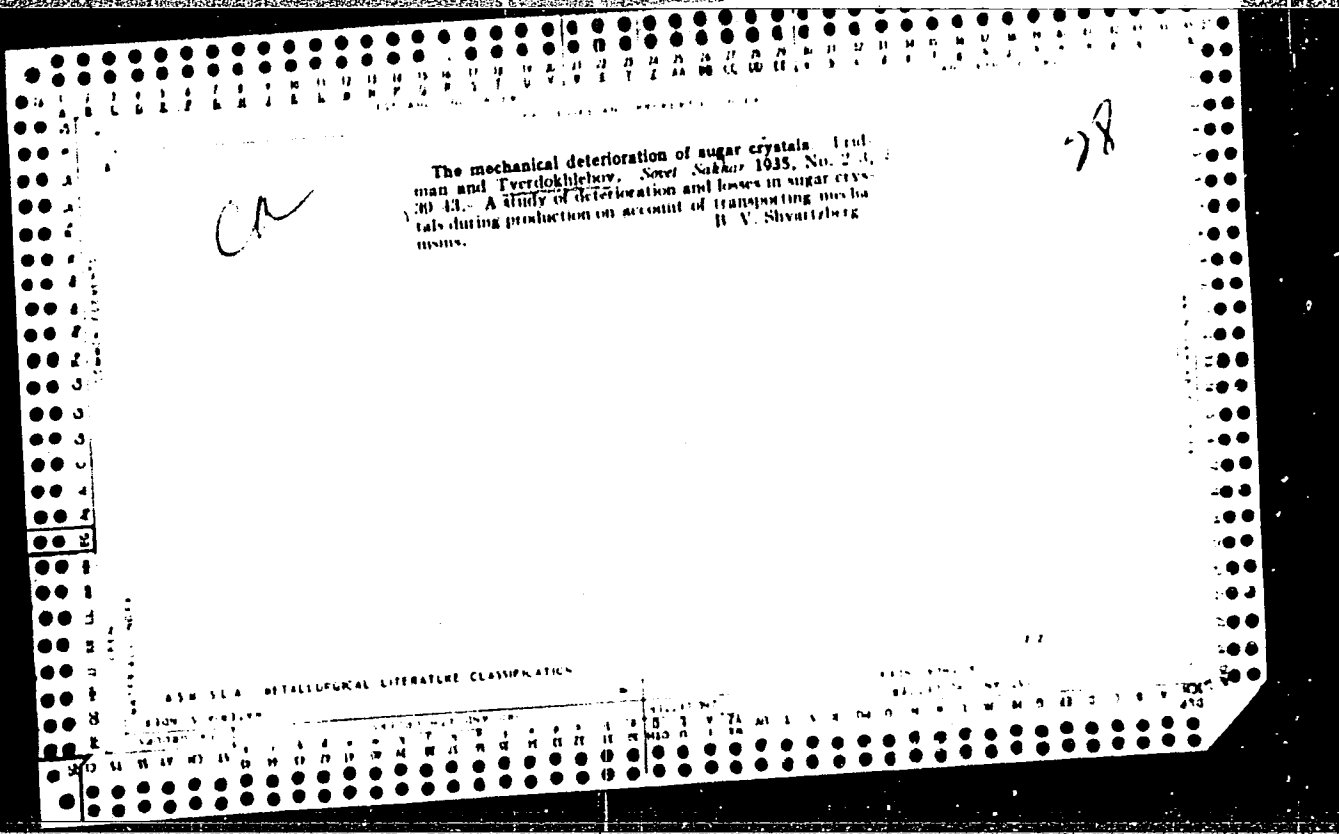
TVERDOKHLEB, V.I., provisor; LUKASH, L.P., provisor (Sumskaya oblast')

Considerations on education of pharmacists. Apt.delo 3 no.3:29-30  
My=Je '54. (MLRA 7:6)

1. Upravlyayushchiy aptekoy No.21 (for Tverdokhlebov)
2. Upravlyayushchaya aptekoy No.79 (for Lukash)  
(PHARMACY, education,  
\*Russia)

ANDREYEV, G.V.; TVERDOKHLEB, Ye.I.

Concerning I.U.M. Sheinmann, F.R. Apel'tsin, E.A. Nechaeva's book  
"Alkali intrusions, their distribution and mineralization  
connected with them." Izv. AN SSSR. Ser. geol. 29 no. 2:  
108-109 F '64. (MIRA 17:5)



TVERDOKHLEBOV, I. A., Cand Vet Sci -- (diss) "Effect of some factors on tuberculin reactions in tubercular cattle." Khar'kov, 1960. 16 pp; (Ministry of Agriculture USSR, Khar'kov Veterinary Inst); 160 copies; price not given; (KL, 52-60, 122)

"Tuberculine reactions during various stages of tuberculosis and their comparative value."

Veterinariya, Vol. 37, No. 2, 1960, p. 24

(TVERDOKHLEBOV, I. A.) - Veterinarnyy vrach.

TVERDOKHLEBOV, I.A., veterinarnyy vrach (Poltava)

Reaction to tuberculin in pregnant cows. Veterinariia 36 no.9:21-23  
S '59. (MIRA 12:12)

(Tuberculosis in animals)

TVERDOKHLEBOV, I. A., Vet.

Poltava Agricultural Inst.

"Turpentine-therapy in contagious catarrh of the top respiratory  
tracts of horses."

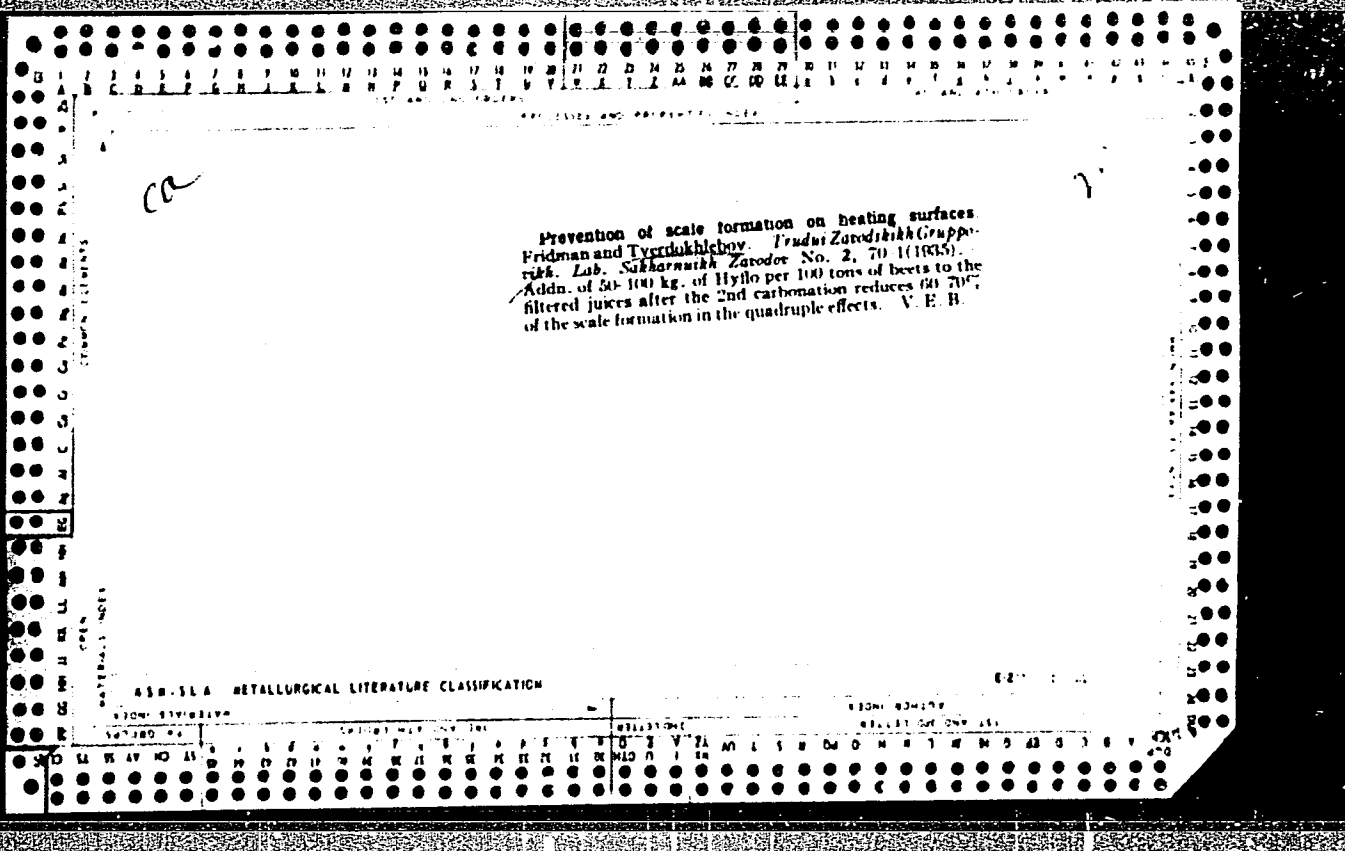
SO: Veterinariya 27(12), 1950, p. 20

RAFIKOV, S.R.; PAVLOVA, S.A.; TVERDOKHLEBOVA, I.I.

Effect of the structure of polymers. Part 2: Use of precision ebullioscopy in the determination of the molecular weight of polyaluminum organic siloxanes. Vysokom. soed. 1 no.3:400-403  
Mr '59. (MIRA 12:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.  
(Molecular weights) (Siloxanes)





SKIRGELLO, O.B., inzh.; TVERDOKHLEBOV, I.P., inzh.

Experiment in the lowering of a deep ground-water level.  
Shakht.stroi. 6 no.1:21-24 Ja '62. (MIRA 14:12)

1. TsNIgorosusheniye.  
(Mine drainage)

ZELINSKIY, Vyacheslav Mikhaylovich, kand. tekhn. nauk; SLOBODKIN, Dmitriy Savvich, kand. tekhn. nauk; TARAN, Arseniy Grigor'yevich, inzh.; TVERDOKHLEBOV, Ivan Panteleyevich, inzh.; ZHUK, Boris Vasil'yevich, inzh.; BEBENIN, M.Ye., inzh., retsenzent; CHUMACHENKO, T.I., red.izd-va; BEREZOVYY, V.N., tekhn. red.

[Control of mine waters] Bor'ba s shakhtnymi vodami. [By] V.M.Zelinskii i dr. Kiev, Gostekhzdat USSR, 1963. 360 p.  
(MIRA 17:3)

TVERDOKHLEBOV, I. T.

TVERDOKHLEBOV, I. T. - "Slovakia (Economic Geography Characteristics)."  
Sub 4 Apr 52, Inst of Geography, Acad Sci USSR. (Dissertation  
for the Degree of Candidate in Geological and Mineralogical Sciences).

SO: Vechernaya Moskva January-December 1952

TVERDOKHLEBOV, I.T.

Development and distribution of industry in the Crimea. Izv.  
Krym. otd. Geog. ob-va no.5:199-223 '58. (MIRA 14:9)  
(Crimea--Industries)

TVERDOKHLEBOV, I.T.

Solving the Czechoslovakian national problem in the Marxist-Leninist way and liquidating the economic lag of the Slovak people.  
Izv. Krym. otd. Geog. ob-va no.5:257-270 '58. (MIRA 14:9)  
(Czechoslovakia--Nationalities) (Slovakia--Economic conditions)

TVERDOKHLEBOV, I.T.

Geography of the Slovakian population. Izv.Krym.otd.Geog.ob-va  
no.4:85-98 '57. (MIRA 14:8)  
(Slovakia--Population)

LAPKO, Mikhail Vladimirovich; RUFIN, Valentin Andreyevich; TVERDOKHLEBOV,  
Ivan Trofimovich [Tverdokhliebov, I.T.]; KIR'YAKOV, IU.F., red.;  
LEBEDEV, I.P. [Lebediev, I.P.], red.kart; GORBUNOVA, N.M.  
[Horbunova, N.M.], tekhn. red.

[Crimean Province; geographical study] Kryms'ka oblast'; geo-  
grafichnyi narys. Kyiv, Derzh. uchbovo-pedagog. vyd-vo  
"Radiants'ka shkola," 1961. 138 p. (MIRA 15:4)  
(Crimea--Geography)



KHOMCHUK, G.A.; TVERDOKHLEBOV, I.S.

Sugar losses resulting from decomposition and caramelization during heating. Sakh. prom. 32 no.11:19-21 H '58. (MIRA 11:12)

1. Stalinskaya gruppevaya laboratoriya.  
(Sugar manufacture)

KAGANOV, I.N.; TVERDOKHLEBOV, I.S.

Value of the coefficient of saturation. Sakh.prom. 33 no.3:  
15-16 Mr '59. (MIRA 12:4)

1. Moskovskiy tekhnologicheskij institut pishchevoy promyshlen-  
nosti (for Kaganov). 2. Stalinskaya gruppovaya laboratoriya  
(for Tverdokhlebov).  
(Sugar manufacture)

TVERDOKHLEBOV, L.S.; KAGANOV, I.N.

Rate of exhaustion of concentrated feed molasses. Sakh. prom.  
32 no. 7:20-22 Jy '58. (MIRA 11:8)

1. Stalinskaya gruppovaya laboratoriya (for Tverdokhlebov).
2. Moskovskiy tekhnologicheskiy institut pishchevoy promyshlennosti (for Kaganov).

(Sugar manufacture)  
(Molasses)

TVERDOKHLEBOV, L.S.

KAGANOV, I.N.; TVERDOKHLEBOV, L.S.

Exhaustion of feed molasses with an increase in its concentration.  
Sakh. prom. 32 no.2:22-25 F '59. (MIRA 11:3)

1. Moskovskiy tekhnologicheskij institut pishchevoy promyshlennosti (for Kaganov).
2. Stalinskaya gruppovaya laboratoriya (for Tverdokhlebov).  
(Molasses) (Sugar manufacture)

TVERDOKHLEBOV, L.S.;CHIBISOVA, O.S.

Variations in quality of normal molasses during the production  
season. Sakh.prom. 32 no.9:4-9 S '58. (MIRA 11:11)

1. Stalinskaya gruppovaya laboratoriya.  
(Molasses)

TVERDOKHLEBOV, L.S.

Decomposition of sugar by microorganisms during diffusion. Sakh.  
prom. 30 no.10:19-22 0 '56. (MLRA 10:1)

1. Sakharnyy zavod imeni Stalina.  
(Micro-organisms) (Sugar)

KAGANOV, I.N.; TVERDOKHLEBOV, L.S.

Coefficient of saturation. Sakh.prom.30 no.3:53-54 Nr '56.  
(MLRA 9:7)

1.MTIPP (for Kaganov).2.Stalinskaya gruppevaya laboratoriya  
(for Tverdekhlebov).  
(Sugar--Analysis and testing)

TVERDOKHLEBOV, L.S.

Improvement of accounting and control of production. Sakh.prom. 29  
no.1:26-28. '55. (MIRA 8:4)

1. Sakharnyy zavod im. Stalina.  
(Sugar industry)



TVERDOKHLEBOV, L. S.

*Q.A. V-48  
Jan 10, 1954  
Sugar, Starch  
and Gums*

The rate of mixing of low-grade massecuites in crystallizers. L. S. Tverdokhlebov. *Sakharnaya Prom.* 27, No. 2, 16-18(1953).—No. of r.p.m. in crystallizers can be decreased to 0.36 with other conditions the same. This will result in better exhaustion of the mother liquor. This will permit boiling of low-grade massecuites to a higher Brix.

V. E. Baikov

*Handwritten:* 1. 1. 1.

*Handwritten:* ✓

The coefficient of saturation. I. N. Kaganov and L. S. Verdakhlebov. *Sakharnaya Prom.* 30, No. 3, 53-4 (1968).  
A discussion in which it is shown that the coeff. of satu.  
is equal to one when the ratio of non-sugars to water equals  
1.32. *Handwritten:* 2

*Handwritten:* V. E. Baikov

TVERDOCHLEBOV, L. S.

British Abst.

B III

Aug. 1953

Sugar, Starch, and Gum Industries

①  
✓  
Rate of stirring massecuite in crystallisers. L. S. Tverdochlebov: (*Sakhar. Prom.*, 1953, No. 2, 16--18; *Sug. Ind. Abstr.*, 1953, 15, 75).--Factory results confirm the expectation that a reduction in the speed of rotation of the stirrers would improve the crystal yield, since more viscous solutions could be used with less damage to the crystals. At two factories a reduction of the rate from 0.75--1.0 to 0.36 r.p.m. gave improved yields without attendant disadvantages.  
P. S. ARUP.

TVERDOXHLEBOV, L. S.

USSR (600)

Sugar Machinery

Quality of apparatus from the Kiev factory of the Main Administration of Food Industry Machinery Production. Sakh prom. No. 7 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 195~~1~~<sub>2</sub>, Uncl.

TVERDOKHLEBOV, L.S.

Determination of the crystallization time of last carbonation  
massecuites. Sakh.prom. 35 no.4:31-32 Ap '61. (MIRA 14:3)

1. Krasnodarskiy tekhnologicheskii institut pishchevoy  
promyshlennosti.

(Sugar manufacture)

TVERDOKHLEBOV, L. S.

USSR (600)

Sugar Industry

Simplified formulae for calculating yield coefficient of white sugar and conditional feed molasses from production products. Sakh. prom. 26 no. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 195~~3~~, Uncl.

2

TVERDOKHLEBOV, L.S.

The rate of mixing of low-grade massecuites in crystallizers. Sakharnaya  
Prom. 27, No.2, 16-18 '53. (MLRA 6:2)  
(CA 48 no.1:393 '54)

TVERDOKHLEBOV, L.S.

Conversion of the actual sugar content of feed molasses  
into the sugar content of normal molasses. Sakh.prom.  
34 no.8:9-10 Ag '60. (MIRA 13:8)

1. Lokhvitskaya gruppovaya laboratoriya.  
(Sugar) (Molasses)



TVERDOKHLEBOV, L. S.

Sugar Industry

Rate of motion of fillmass in crystallizers, Sakh. prom. 27, No. 2, 1953.

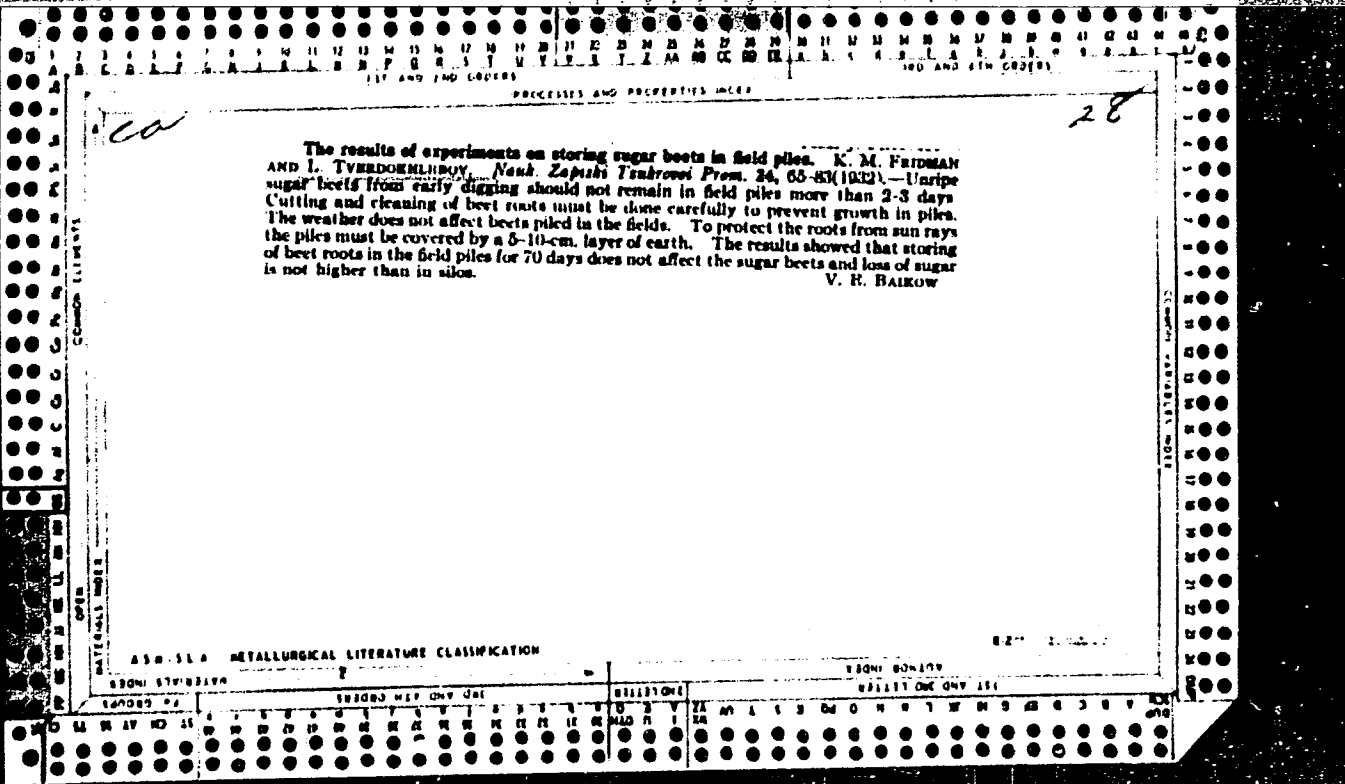
9. Monthly List of Russian Accessions, Library of Congress, May 1953, Uncl.

TVERDOKHLEBOV, P.N.

Raise the role of a foreman. Mashinostroitel' no.5:41 My '60.  
(MIRA 14:5)

1. Master avtoremontnogo tsekha Cherkesskogo zavoda kholodil'nogo  
oborudovaniya.

(Factory management)



TVERDOKHLEBOV, S.P., Gvardii podpolkovnik meditsinskoy sluzhby

Organization of preflight medical control of flying personnel.  
Voen.-med.zhur. no.4:72-73 Ap '60. (MIRA 14:1)  
(FLIGHT CREWS—DISEASES AND HYGIENE)

*Teoriya i Prilozheniya*  
GORBAN', D.V.; TVERDOKHIMSKAYA, M.M. et al.

Increasing the Yield of bleached sugar. Sakh.prom. 31 no.7:20-23  
Jl '57. (MLRA 10:8)

1. Sakharnyy zavod imeni Stalina.  
(Sugar industry)

PROCESSES AND PROPERTIES INDEX

BC

B-III-2

Steering sugar beets in field piles. K. M. FRIDMAN and L. TYNDORILEBOV (Nauk. Zapiski Truk. Prom., 1962, 24, 46-53).—Unless sugar beets from early digging should not remain in field piles for > 2-3 days; they should be covered with 5-10 cm. of earth. The loss of sugar in 70 days is → in silos. Ch. Ana.

ABB-31A METALLURGICAL LITERATURE CLASSIFICATION

FROM DIVISION	DATE	BY	REMARKS	DATE	BY	REMARKS

STANDARD NO.

DATE

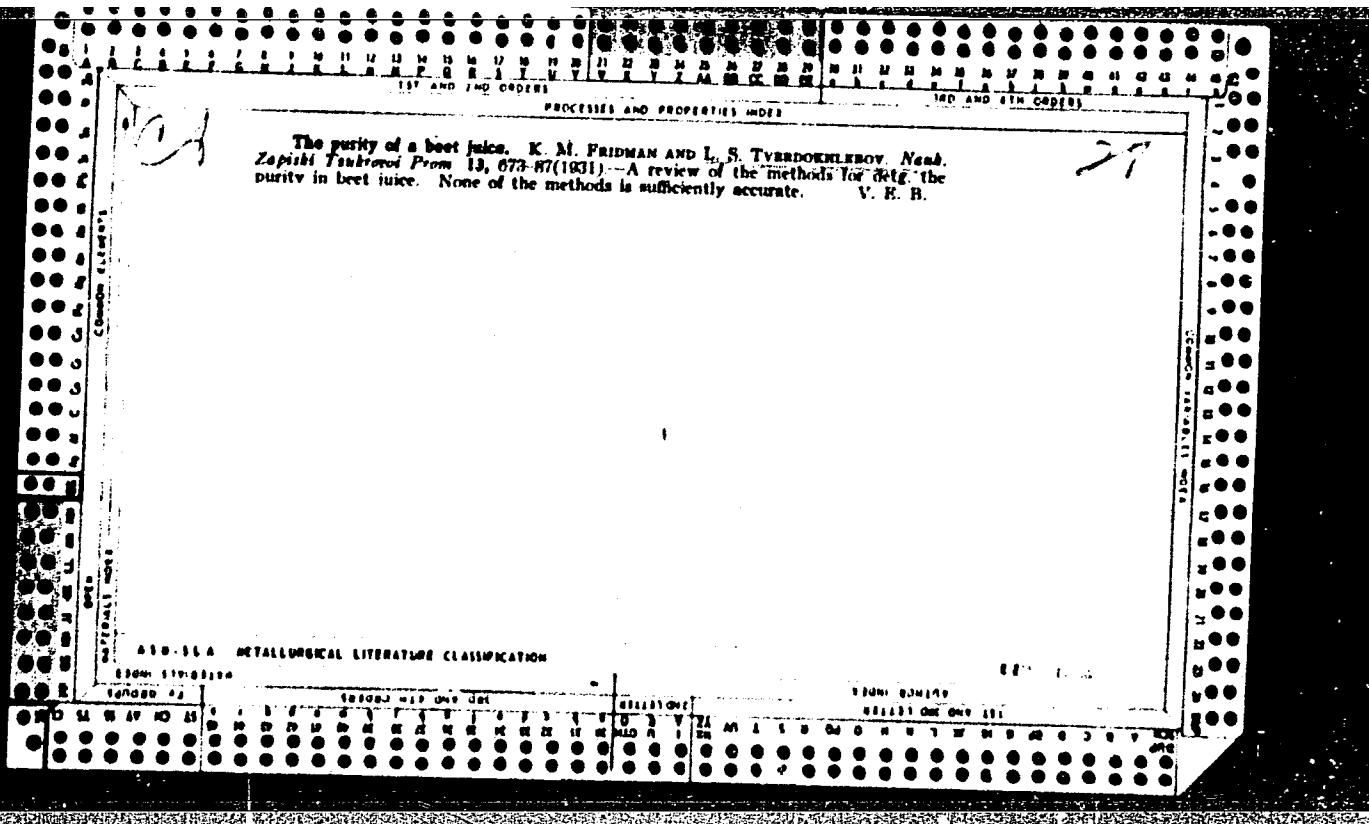
BY

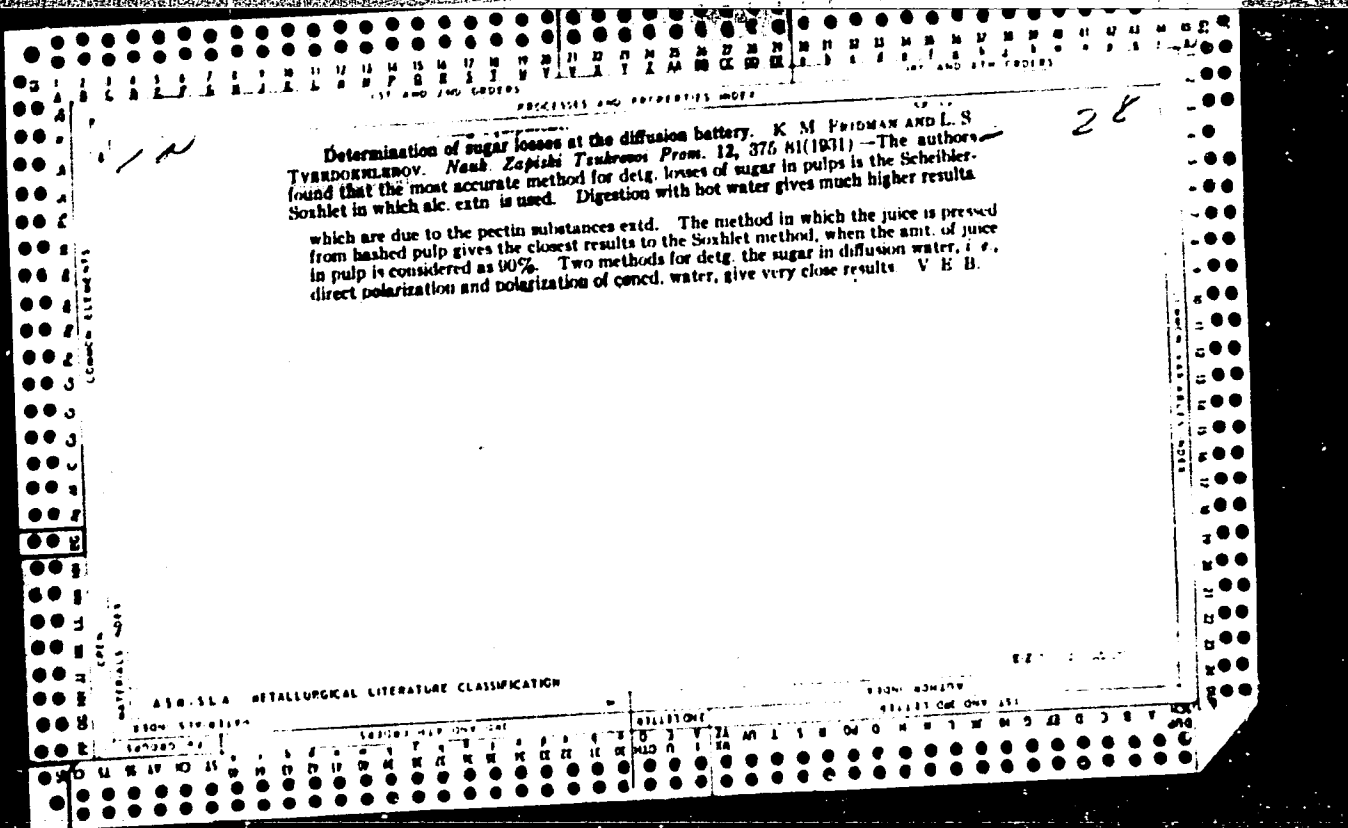
REMARKS

DATE

BY

REMARKS







TVERDOKHLEBOV, S.V., mayor meditsinskoy sluzhby.

Japanese drugs seized during the war. Farm.1 toks.10 no.2:59-61  
Mr-Ap '47. (MLRA 7:2)

1. Iz mediko-sanitarnogo otdela Tikhookeanskogo flota.  
(Japan--Drugs) (Drugs--Japan)

S/177/60/000/004/002/003  
B004/B064

AUTHOR: Tverdokhlebov, S. P., Lieutenant-colonel of the Guard,  
~~Surgeon~~

TITLE: Organization of Preflight Medical Checkup<sup>2</sup> of Airplane Crews

PERIODICAL: Voenno-meditsinskiy zhurnal, 1960, No. 4, pp. 72-73

TEXT: The author states that a number of pilots, when jointly questioned about their state of health, were reluctant to speak frankly. Therefore, checkup rooms were specially equipped for ambulatory examination in which each pilot is individually examined. The preflight checkup begins in the mess-room where the surgeon studies the appetite and behavior of the pilots. In the examination room, the emotional state of the pilot, his integument, and the visible mucosae are examined, the pulse is checked and the pilot subjected to an examination in the Romberg position. The results are entered in a so-called preflight log. After the flight, the pilot has to undergo an examination of the same kind. A comparison of the results obtained before and after the flight decides whether the pilot is admitted to the next flight. On the basis of the preflight

Card 1/2

Organization of Preflight Medical Checkup  
of Airplane Crews

S/177/60/000/004/002/003  
B004/B064

checkup, 0.8% of the pilots were found to be unfit. Fifty percent of these pilots suffered from diagnosed indispositions, one-third complained of their state of health spontaneously, the rest had simply disregarded preflight regulations. These control measures help the medical officer to prevent flight accidents.

SUBMITTED: November 1959



Card 2/2

TVERDOKHLEBOV, V.A.

On the large banklike upheaval in the eastern part of the Irkutsk amphitheater. Dokl. AN SSSR 136 no. 3:693-695 Ja '61. (MIRA 14:2)

1. Vostochno-Sibirskiy geologicheskiy institut Sibirskogo otdeleniya Akademii nauk SSSR. Predstavleno akademikom N.M. Strakhovym.  
(Baikal Lake region—Geology, Structural)

ODINTSOV, M.M.; TVERDOKHLEBOV, V.A.; VLADIMIROV, B.M.; IL'YUKHINA, A.V.;  
KOLESNIKOVA, T.P.; KONEV, A.A.; GALUSHKO, Ya.A., red.izd-va;  
RYLINA, Yu.V., tekhn.red.

[Structure, volcanism, and diamond potential of the Irkutsk  
amphitheater] Struktura, vulkanizm i almazonosnost' Irkutskogo  
amfiteatra. Moskva, Izd-vo Akad.nauk SSSR, 1962. 176 p.  
(Akademiia nauk SSSR. Sibirskoe otdelenie. Vostochno-Sibirskii  
geologicheskii institut. Trudy, no.4). (MIRA 16:2)  
(Irkutsk Province—Geology, Structural)  
(Irkutsk Province—Diamonds)

TVERDOKHLEBOV, V.A.

Preglacial direction of the discharge of the Indigirka River.  
Izv. AN SSSR. Ser. geog. no.5:119-126 S-0 '62. (MIRA 15:10)

1. Vostochno-Sibirskiy geologicheskii institut Sibirskogo  
otdeleniya AN SSSR.  
(Indigirka River--Hydrology)

TVERDOKHLEBOV, V. I.

7 The growth of carbon dendrites in flames. I. S. Zaitseva and V. I. Tverdokhlebov. *Zhurn. tekh. fiz.* 25 (1955) 1319-1355. An arc was struck between a cathode and anode of  $C_{10}H_8$  and a  $C_{10}H_8$  atmosphere of the same composition. The growth of carbon dendrites in the arc at different angles of the cathode was studied. The growth of the dendrites in the arc depends upon the temperature of the cooled area where the C particles are formed, and the number of areas close to the anode where the dendrites are formed. The concentration of positive and negative ions, respectively. The presence of traces of alkali salts in the arc prevents the formation of dendrites.

Werner Jacobson

*Photo of V.I.*

Ionization in hydrocarbon flames. V. I. Tverdokhlebny.  
(Mining Inst. Dnepropetrovsk). Dokl. Akad. Nauk  
S.S.S.R. 103, 1049-51 (1966).—The argument between a  
thermal and a chem. ionization in hydrocarbon flames is  
discussed and the reasons given for preferring the thermal  
ionization. The C particles in the flames are composed of  
minute graphite crystals for which a metallic behavior is  
claimed. The analytical treatment of the problem is based  
on a diffusional elimination of the emitted electrons, and a  
formula is derived permitting the computation of the electron  
concn. in the flame, which agrees with the experimentally  
determ. concn. W. M. Sternberg

+

*Small post*



TVERDOKHLEBOV, V.I.

112-2-2643 D

Translation from: Referativnyy Zhurnal, Elektrotehnika, 1957, Nr 2,  
p. 5 (USSR)

AUTHOR: Tverdokhlebov, V.I.

TITLE: Some [Results of] Theoretical Research on the Electrical  
Properties of a Flame (Nekotoryye teoreticheskiye  
issledovaniya elektricheskikh svoystv plameni).

ABSTRACT: Bibliographic entry on the author's dissertation for the  
degree of Candidate in Physics and Mathematics, presented  
to the University of Dnepropetrovsk, (Dnepropetrovsk un-t)  
Dnepropetrovsk, 1956.

ASSOCIATION: The University of Dnepropetrovsk (Dnepropetrovsk un-t)

Card 1/1

**"APPROVED FOR RELEASE: 04/03/2001**

**CIA-RDP86-00513R001757620020-1**

**APPROVED FOR RELEASE: 04/03/2001**

**CIA-RDP86-00513R001757620020-1"**

Tverdokh Lebov, V.I.

✓ Probe investigation of a rarefied flame. V. I. Tverdokh-  
 lebov (Mining Inst. Dnepropetrovsk). *Zh. fiz. khim.* 30, 252-6 (1956).  
 Fig. 30, 252-6 (1956).—The elec. properties of an  
 C<sub>2</sub>H<sub>2</sub> (7% air flame at 30-50 mm. pressure were investi-  
 gated by a probe method. The results are interpreted  
 by the following mechanism: In the bright green "reaction"  
 zone pos. and neg. ions are formed by the reaction  $M + OH^{\bullet} \rightarrow M^{\bullet} + OH^{-}$  (M = hydrocarbon mol. or a radical)  
 $OH^{-}$  reacts according to  $M_1 + OH^{-} \rightarrow M_1OH^{-} \rightarrow M_1OH + e$ , forming a free electron; the pos. ions polymerize, forming  
 particles 100-500 Å. large. S. Pakawar

L

RM  
EM

1956

AUTHOR:  
TITLE:

TVERDOKHLEBOV, V.I.

PA - 2803

Connection between Electronic Temperature Determination by Means of the LANGMUIR Method of Probe Characteristic and the Method of Two Probes. (Svyas' v opredelenii elektronnoy temperatury mezhdou metodom zondovykh kharakteristik Lengmyura i metodom dvukh zondov, Russian)

PERIODICAL:

Zhurnal Tekhn.Fiz. 1957, Vol 27, Nr 4, pp 753-755 (U.S.S.R.)

Received: 5 / 1957

Reviewed: 7 / 1957

ABSTRACT:

The electron temperature may be computed by the method of LANGMUIR and MOTT-SMITH as well as by the method of Two Probes. For both cases a common formula is derived. A formula is found for the determination of the electron temperature from which results the formula found by LANGMUIR and MOTT-SMITH for the determination of the electron temperature and the formula for the determination of the electron temperature for the case of the Two Probes method. Two further formulae were derived, viz. for the determination of electron temperature for the case of unsymmetric branches of the probe characteristics in the Two-Probe method. (3 Citations from Slav Publications).

Dnepropetrovsk Mining Institute Artem, Dnepropetrovsk

ASSOCIATION:  
PRESENTED BY:  
SUBMITTED:

AVAILABLE:

Library of Congress

Card 1/1

21029

S/058/61/000/005/041/050  
A001/A101

26.2531

AUTHOR:

Tverdokhlebov, V.I.

TITLE:

Distribution of electrical field between plane-parallel plates placed in an ionized gas

PERIODICAL:

Referativnyy zhurnal, Fizika, no 5, 1961, 331, abstract 5Zh81 ("Nauchn. zap. Dnepropetr. un-t", 1957, v 72, 37 - 40)

TEXT:

The author presents the solution of J. Tompson's problem on ionized gas between electrodes. Not only positive and negative ions are taken into account but also electrons. If the current is far from being saturated, the space between the electrodes can be divided into the following regions: anode, central and cathode region. The integration of Poisson equations and balance of charged particles shows that field intensity and potential at the cathode are always higher than at the anode. Electron losses due to formation of negative ions may lead to a considerable change of the field.

S. Shushurin

[Abstracter's note: Complete translation.]

Card 1/1

24(6)  
AUTHOR: Tverdokhlebov, V. I. SOV/57-58-12-15/15  
TITLE: Answer to S. D. Vagner's Letter (Otvét S. D. Vagneru)  
PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1958, Nr 12, pp 2740-2741 (USSR)  
ABSTRACT: This is a reply to the letter by S. D. Vagner. The first objection is correct, the second one is based on an error and considering Vagner's objection formula (7) is re-written as (10)(viz. concerning the derivation of formula (7) from formula (6)). There is 1 reference.  
ASSOCIATION: Dnepropetrovskiy gornyy institut (Dnepropetrovsk Mining Institute)  
SUBMITTED: October 23, 1957

Card 1/1

USCOMM-DC-60905

L 18334-63

BDS, EWT(1)/ES ( ) 2 AFFTC/ASD . 00- 13703704 020 019

ESD-3/IJP/C, ESD Pat 4

AUTHOR: Nesterko, N. A., Rossikhin, V. S., Tverdokalebov, I. 68TITLE: Investigation of flame ionization by the electrode methodPERIODICAL: Zhurnal fizicheskoy khimii, V. 37, No. 4, 1963, 940-942

TEXT: The Thompson electrode method can give much useful data when investigating the ionization of flames; however, any interpretation of experimental data should be made with great caution because of the complexity of the processes which occur in the flame and especially near electrodes. Particular criticism is directed at A. A. Arshinov and I. M. Vostrikov for shortcomings in their work on the electrode method. The most important English-language references read as follows: P. E. Boucher, Phys. Rev., 31, 833, 1928, H. E. Banta, Phys. Rev., 33, 211, 1929, H. E. Wilson, Rev. Mod. Phys., 3, 156, 1931.

ASSOCIATION: Gosudarstvennyy Dnepropetrovskiy universitet imeni 300-letiya vostoynedineniya Ukrainy s Rossiyey i Dnepropetrovskiy Gornyy institut imeni Artema (State Dnepropetrovsk University imeni the 300th Anniversary of the Reunion of the Ukraine with Russia and the Dnepropetrovsk Mining Institute imeni Artem)

SUBMITTED: December 22, 1961

Card 1/1

NESTERKO, N.A.; ROSSIKHIN, V.S.; TVERDOKHLEBOV, V.I.

Study of flame ionization by the electrode method. Zhur. fiz.  
khim. 37 no.4:940-942 Ap '63. (MIRA 17:7)

1. Gosudarstvennyy Dnepropetrovskiy universitet imeni 300-letiya  
vossoyedineniya Ukrainy s Rossiyey i Dnepropetrovskiy gornyy  
institut im. Artema.



KIRILLOV, V.A.; TVERDOKHLEBOV, V.I.; KHOMENKO, V.I.

Demonstration experiment using a zone plate. *Usp. fiz. nauk*  
82 no.1:166-167 Ja'64. (MIRA 17:2)

MAKSIMENKO, A.P.; TVERDOKHLEBOV, V.I.

Work function of electrons from the surface of small-size particles.  
Izv. vys. ucheb. zav.; fiz. no.1:84-87 '64. (MIRA 17:3)

1. Dnepropetrovskiy gosudarstvennyy universitet i Dnepropetrovskiy  
gornyy institut imeni Artema.

**"APPROVED FOR RELEASE: 04/03/2001**

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**APPROVED FOR RELEASE: 04/03/2001**

**CIA-RDP86-00513R001757620020-1"**

L 00645-67 EWI(1)/EWI(2)/IWE(1)/ETI IJE(1) AT/WW/DE/W/JG

ACC NR: AP6014060

SOURCE CODE: UR/0294/66/004/002/0160/0165

AUTHOR: Taran, E. N.; Tverdokhlebov, V. I.ORG: Dnepropetrovsk Mining Institute im. Artem (Dnepropetrovskiy gornyy institut) 18 BTITLE: Some electrical characteristics of rarefied acetylene-air flame with an admixture of alkali metals 11

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 2, 1966, 160-165

TOPIC TAGS: magnetohydrodynamics, free electron, flame temperature, flame, acetylene, electron temperature, flame structure, recombination coefficient

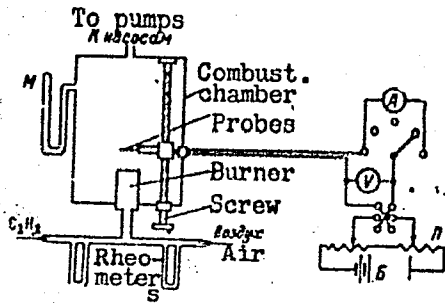
ABSTRACT: Information on the temperature of free electrons in hydrocarbon flames has been contradictory (cf. H. F. Calcote, 9th Internat. Symp. Combustion, Acad. Press, 622, 1963; B. E. L. Travers et al., Nature, 200, 351, 1963). Very little information has been available on free-electron temperatures in salt-containing flames. Hence, the authors have investigated the free-electron temperatures in rarefied acetylene-air flames to which  $\text{CsCl}$ ,  $\text{Cs}_2\text{CO}_3$ ,  $\text{K}_2\text{CO}_3$ ,  $\text{Na}_2\text{CO}_3$  salts have been added; also, the positive ion concentration and the recombination coefficient have been determined. The flame electrical

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UDC: 536.46.536.566.537.568

L 00645-67

ACC NR: AP6014060



Flame-test outfit

parameters were measured (see figure) by a method of two probes (stainless steel, 0.4-mm diameter, 33-mm long). The free-electron temperature was determined by the F. O. Johnson et al. logarithmic method (Phys. Rev., v. 80, 58, 1950). In the luminous zone of the pure flame, the free-electron temperature was found to be slightly higher than the flame temperature. Introduction of the above salts appreciably reduced both temperatures and increased the concentration of positive ions.

The recombination coefficient for the pure flame was estimated to be  $\alpha = 0.5 \times 10^{-7} \text{ cm}^3/\text{sec}$ ; measured by the saturation-current method, it was  $\alpha = 2 \times 10^{-7} \text{ cm}^3/\text{sec}$ . The recombination coefficient appreciably decreased when the above salts were introduced into the flame. Orig. art. has: 3 figures, 8 formulas, and 4 tables.

SUB CODE: 20 / SUBM DATE: 01Mar65 / ORIG REF: 004 / OTH REF: 005

Card 2/2 hs

GOLOVNYA, V.A.; MOLODKIN, A.K.; TVERDOKHLEBOV, V.N.

Synthesis of thorium tri and "tetra" sulfites. Zhur. neorg. khim.  
10 no.9:2196-2198 8 '65. (MIRA 18:10)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova AN  
SSSR.

AUTHORS: Rode, Ye. Ya., Tverdokhlebov, V. N. SOV/78-3-10-19/35  
 TITLE: Thermal Dissociation of Ammonium Molybdates (Termicheskaya  
 dissotsiatsiya molibdatov ammoniya)  
 PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 10, pp 2343-2346  
 (USSR)

ABSTRACT: The process of the thermal dissociation of several ammonium  
 molybdates was investigated. The initial preparations were pro-  
 duced according to the traditional methods. The ammonium molyb-  
 dates produced have the following composition:

Nr	1	2
Salt	Normal Molybdate	Paramolybdate
Composition %		
(NH <sub>4</sub> ) <sub>2</sub> O	27,1	11,85
MoO <sub>3</sub>	72,8	78,5
H <sub>2</sub> O	-	9,6
Empirical Formula	(NH <sub>4</sub> ) <sub>2</sub> O.MoO <sub>3</sub>	(NH <sub>4</sub> ) <sub>2</sub> O.2,35 MoO <sub>3</sub> .2,35 H <sub>2</sub> O
Gross Formula	(NH <sub>4</sub> ) <sub>2</sub> MoO <sub>4</sub>	5 (NH <sub>4</sub> ) <sub>2</sub> O.12 MoO <sub>3</sub> .12 H <sub>2</sub> O

Card 1/4



SOV/78-3-10-19/35

Thermal Dissociation of Ammonium Molybdates

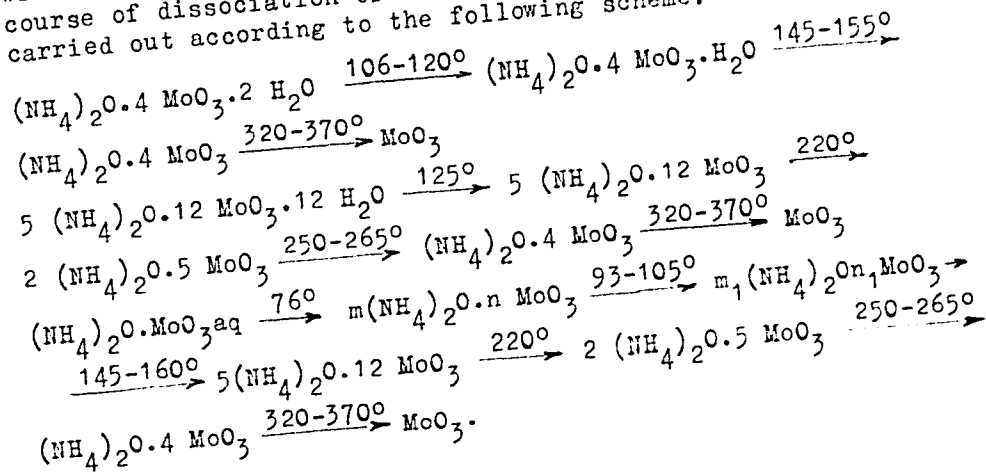
Nr	3	4
Salt	Paramolybdate	2,5-Molybdate
Composition%	(anhydrous)	
$(\text{NH}_4)_2\text{O}$	12,97	12,69
$\text{MoO}_3$	86,9	87,2
$\text{H}_2\text{O}$	-	-
Empirical Formula	$(\text{NH}_4)_2\text{O} \cdot 0.2,39 \text{ MoO}_3$	$(\text{NH}_4)_2\text{O} \cdot 0.2,48 \text{ MoO}_3$
Gross Formula	5 $(\text{NH}_4)_2\text{O} \cdot 0.12 \text{ MoO}_3$	2 $(\text{NH}_4)_2\text{O} \cdot 0.5 \text{ MoO}_3$
Nr	5	6
Salt	Metamolybdate	Metamolybdate
Composition%	(hydrous)	(anhydrous)
$(\text{NH}_4)_2\text{O}$	7,90	8,71
$\text{MoO}_3$	86,65	91,4
$\text{H}_2\text{O}$	5,40	-
Empirical Formula	$(\text{NH}_4)_2\text{O} \cdot 0.4\text{MoO}_3 \cdot 2\text{H}_2\text{O}$	$(\text{NH}_4)_2\text{O} \cdot 0.4 \text{ MoO}_3$
Gross Formula	$(\text{NH}_4)_2\text{O} \cdot 0.4\text{MoO}_3 \cdot 2\text{H}_2\text{O}$	$(\text{NH}_4)_2\text{O} \cdot 0.4 \text{ MoO}_3$

Card 2/4

SOV/78-3-10-19/35

Thermal Dissociation of Ammonium Molybdates

The thermal dissociation of ammonium molybdates was carried out by the thermographic and thermogravimetric method, together with the chemical analysis of the intermediate products. The course of dissociation of various ammonium molybdates can be carried out according to the following scheme:



Card 3/4

SOV/78-3-10-19/35

Thermal Dissociation of Ammonium Molybdates

The thermograms of various ammonium molybdates are presented in the figures (1) and (2). Thus it is demonstrated that normal molybdates, as well as paramolybdates, lose ammonia or water at above 150°C when they are thermally treated. Above this temperature all dissociation products have the same composition. The final product of dissociated ammonium molybdates is amorphous  $\text{MoO}_3$  that is formed at 350°C and assumes crystalline form at 400-420°C. The results obtained are different from those mentioned in references. There are 2 figures, 1 table, and 4 references, 0 of which is Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni N. S. Kurnakov of the Academy of Sciences, USSR)

SUBMITTED: May 19, 1958

Card 4/4

GOLOVNYA, V.A.; MOLODEIN, A.K.; TEMENIHEBOV, V.M.

Thorium disulfide. Izv. nauch. Yuzn. 9 no.6:2031-2031 1g 101.  
(NTPA 1:11)

OCHEV, V.G.; SHISHKIN, M.A.; GARYAINOV, V.A.; TVERDOKHLEBOV, V.P.

New data on the stratigraphic division of the Triassic according to  
vertebrates in the Ural Mountain portion of Orenburg Province. Dokl.  
AN SSSR 158 no.2:363-365 S '64. (MIRA 17:10)

1. Nauchno-issledovatel'skiy institut geologii pri Saratovskom gosudar-  
stvennom universitete im. N.G.Chernyshevskogo i Paleontologicheskiy insti-  
tut AN SSSR. Predstavleno akademikom Yu.A.Orlovym.

FINTIKTIKOVA, R.P.; KHARMATS, R.Z.; TVERDOKHLEBOVA, A.F.

Study of the various causes of the body is reaction to a whooping  
cough-diphtheria vaccine in experiment. Zhur. mikrobiol. epid.  
i immun. 31 no. 10:24-28 0 '60. (MIRA 13:12)

1. Iz Khar'kovskogo instituta vaktsin i syvorptok imeni Mechnikova.  
(WHOOPIING COUGH) (DIPHThERIA)

AUTHOR: Tverdokhlebova, I. I. (Moscow) SOV/74-27-8-5/7

TITLE: The Isopiestic Method for the Determination of the Molecular Weight of Polymers (Izopiyesticheskiy metod opredeleniya molekulyarnykh vesov polimerov)

PERIODICAL: Uspekhi khimii, 1958, Vol. 27, Nr 8, pp. 990-995 (USSR)

ABSTRACT: At present only a few theoretically and practically founded absolute methods for the determination of the molecular weights of polymers are known, none of them, however, may be called universal. The determination of the molecular weights within the interval from 1000 to 50 000 represents the difficult range of determination. In view of the great possibilities of the employment of the isopiestic method the present article gives an investigation of various varieties of this method as well as the most important experimental data. The author deals with the idea of the isopiestic method based on the investigations made by Errer. The author discusses in detail the investigations carried out by Berger as well as the method he employed. Then he discusses the publications of a number of authors (Refs 5 - 12) on the

Card 1/3

SOV/74-27-8-5/7

The Isopiestic Method for the Determination of the Molecular Weight of Polymers

varieties of the capillary filling. He makes a special reference of those by Niederl and Levy (Niederl and Levi) (Ref 7). The papers written by Niederl and Kasanof (Kazanov, Refs 8, 12), Pavlova and Tverdokhlebova (Ref 9), R. Wright and Nieuwenburg (Nivenberg, Refs 13, 14) are also mentioned and discussed. Those papers deal with an ingenious modification of the Berger method (important increase of the rate of vapor diffusion) by which a reduction of the time required for the determination of the molecular weight of the polymer is achieved. The author discusses the Wright apparatus, the microisopiestic method according to Karl Schwarz (Shvarts, Ref 15). The Schwarz method requires the determination of the equilibrium concentrations in two solutions in the vapor phase and at constant temperature. The macro method employed by other authors is discussed in short (Refs 16, 17). Finally the author mentions the method suggested by Singer (Zinger, Ref 18) and the apparatus constructed by the latter is dealt with in detail. There are 6 figures, 3 tables, and 28 references, 1 of which is Soviet.

Card 2/3



SOV/74-27-8-5/7

The Isopiestic Method for the Determination of the Molecular Weight of Polymers

1. Polymers--Molecular weight
2. Molecular weight--Determination

Card 3/3

AUTHORS: Pavlova, S. A., Tverdokhlebova, I. I. SOV/76-32-6-19/46

TITLE: The Isopiestic Method of Determining Mean Molecular Weights  
(Ob izopiyeisticheskoy metode opredeleniya srednechislennogo molekulyarnogo vesa)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 6,  
pp. 1313 - 1318 (USSR)

ABSTRACT: At present micro- and macro-methods exist in this technique, the principle of which was for the first time proposed by Berger (Ref 1). The method by Signer (Ref 6) must be mentioned in particular. In the present study n-dibromobenzene, azobenzene and 1,20-eicosandiol benzoate are used as standards. Some modifications of the methods applied hitherto for the purpose of precisising the measuring technique were performed. Containers, a figure of which is given, and the weighing method according to MacBen were employed. The somewhat modified micro-method of determination according to Barger-Rast (Refs 2,5) was found to be the most accurate and most convenient one. The experimental technique employed is described. It appears that a mixing of the two solutions is almost impossible, thus an increase in the

Card 1/3

The Isopiestic Method of Determining Mean Molecular Weights

SOV/76-32-6-19/46

accuracy of determination being achieved. The temperature of the thermostat must not exceed the boiling temperature of the solvent employed. The size of the drops is measured on a VSA-2 comparator with an accuracy of  $1\mu$ . Experiments were conducted to establish the degree of accuracy of the method. The results are given in a table. From it satisfactory results for substances with a molecular weight of up to 17000 may be seen. The method is applicable to molecular weights of up to 50000. Finally thanks are expressed to G.L.Slonimskiy. There are 6 figures, 6 tables, and 18 references, 0 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut elementoorganicheskikh sovedineniy, Moskva (Moscow, Institute of Elemental-organic Compounds, AS USSR)

SUBMITTED: February 8, 1957

Card 2/3

The Isopiestic Method of Determining Mean Molecular  
Weights

SOV/76-32-6-19/46

1. Molecular weight--Determination
2. Bromobenzenes--Temperature factors
3. Benzenes--Temperature factors

Card 3/3

PAVLOVA, S.A.; TVERDOKHLEBOVA; I.I.

Selection of a membrane for the osmotic determination of the  
molecular weight of low molecular weight polyamides. Vysokom.  
soed. 1 no.3:438-442 Mr '59. (MIRA 12:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.  
(Molecular weights) (Amides)

06321

53100

2209.1228. 1241

S/190/60/002/012/005/019  
B017/B055

AUTHORS: Rafikov, S. R., Pavlova, S. A., Tverdokhlebova, I. I.

TITLE: Dependence of Solution Properties on Polymer Structure.  
III. Investigation of Solutions of Polydimethyl Siloxanes

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2. No. 12,  
pp. 1786-1793

TEXT: The authors studied the solutions of polydimethyl siloxane in chloro benzene and benzene at 20, 30, and 40°C, and in isooctane at 20 and 30°C applying the method of viscous flow, light scattering, sedimentation by ultracentrifugation, and diffusion. Fractional precipitation of polydimethyl siloxane with methanol from its 3% solution in benzene at 20°C yielded six fractions, the molecular weight of which was determined by light scattering. The results are given in Table 1. The viscosity of the polydimethyl siloxane solutions in chloro benzene at 20, 30, and 40°C is represented graphically in Fig. 1. The molecular weight of polydimethyl siloxane was calculated from the relation

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86321

Dependence of Solution Properties on Polymer Structure. III. Investigation of Solutions of Polydimethyl Siloxanes

S/190/60/002/012/005/019  
B017/B055

$$M = \frac{S \cdot R \cdot T}{D (1 - v_2 \rho)}$$

where S = sedimentation constant, D = diffusion coefficient, R = gas constant, T = temperature in °K, v = specific partial volume of the polydimethyl siloxane and ρ = its density. The viscosity of polydimethyl siloxane solutions in chloro benzene, benzene and isooctane at 20, 30, and 40°C are shown graphically in Figs. 2 and 3. The viscosity of polydimethyl siloxane solutions in chloro benzene at 20 and 40°C and benzene at 20°C is a linear function of the concentration. By determining the viscosity and molecular weight, the authors obtained the constants K and a of the equation  $[\eta] = KM^a$ , which gives the relation between the intrinsic viscosity and the molecular weight. In Fig. 4,  $\log[\eta]$  is plotted against  $\log M$  for polydimethyl siloxane in chloro benzene and benzene. The dependence of  $\log K$  on a, as calculated from the general formula

$$K = \frac{21}{m_0} \left( \frac{1}{2500m_0} \right)^a \quad (\text{Ref. 7})$$

is illustrated in Fig. 5.  $m_0$  is the mean molecular weight of the polymer. The values of K and a for solutions of polydimethyl siloxane in chloro benzene and benzene at 20 - 40°C are

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86321

Dependence of Solution Properties on Polymer Structure. III. Investigation of Solutions of Polydimethyl Siloxanes

S/190/60/002/012/005/019  
B017/B055

listed in Table 3. The mean distance between the chain ends is described by the relation  $(\bar{h}^2)^{1/2} = \alpha(\bar{h}_0^2)^{1/2}$ . Fig. 6 represents the function  $(\bar{h}^2)^{1/2} = f(M)^{1/2}$  for chloro benzene solutions of polydimethyl siloxane at 20, 30, and 40°C. From this it follows that the root mean square distances between the chain ends of polydimethyl siloxane in chloro benzene and benzene increase with an increase in temperature. The constant A, which designates the ratio of the hydrodynamic diffusion and viscosity radii of macromolecules, was calculated from the relation  $A = \eta_0 T^{-1} D(M[\eta])^{1/3}$ , where  $\eta_0$  is the viscosity of the solvent in poise, T the temperature in °K, D the diffusion coefficient, M the molecular weight of the polymer and  $[\eta]$  the intrinsic viscosity. In the case of the chloro benzene solutions of polydimethyl siloxane, A changes little with temperature variation, i.e. by  $2.27 \cdot 10^{-10}$  to  $2.8 \cdot 10^{-10}$  erg/degree. The relation between the diffusion coefficient, D, and the molecular weight of the polymer, M, was calculated and expressed as  $D = 1.05 \cdot 10^{-4} M^{-0.547}$ .

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Dependence of Solution Properties on Polymer  
Structure.. III.. Investigation of Solutions of  
Polydimethyl Siloxanes

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There are 6 figures, 4 tables, and 12 references: 4 Soviet. X

ASSOCIATION: Institut elementoorganicheskikh sovedineniy AN SSSR  
(Institute of Elemental Organic Compounds of the Academy of  
Sciences USSR)

SUBMITTED: May 12, 1960

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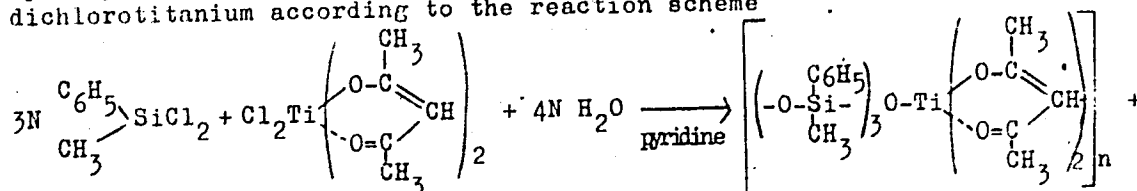
S/062/62/000/009/005/009  
B119/B186

AUTHORS: Rafikov, S. R., Andrianov, K. A., Pavlova, S. A.,  
Tverdokhlebova, I. I., and Pichkhadze, Sh. V.

TITLE: Study of polyorganotitanosiloxanes in solutions

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh  
nauk, no. 9, 1962, 1581 - 1584.

TEXT: Poly-bis-(acetyl acetate)titanophenyl methyl siloxane was produced  
by cohydrolyzing methyl phenyl dichlorosilane with bis-(acetyl acetate)  
dichlorotitanium according to the reaction scheme



8N HCl. The reaction product was obtained by fractional precipitation  
from a 20 % solution in benzene n-heptane (1:1). The individual fractions

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Study of polyorganotitanosiloxanes in ...

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were analysed into their elements; their molecular weight and viscosity were determined (solvent: dimethyl formamide, benzene, chlorobenzene, methyl ethyl ketone). Results: With minimum deviations, all the fractions show a relative homogeneity, and differ only in molecular weight. Maximum molecular weight found: 11,200; degree of polymerization  $n$  of this fraction = 17; characteristic viscosity (depending on the solvent used and the rate of flow through the capillary tube of the viscosimeter): 0.01 - 0.04. There are 6 figures and 1 table.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR)

SUBMITTED: February 17, 1962

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ACCESSION NR: AP4042189

S/0190/64/006/007/1275/1280

AUTHOR: Pavlova, S. A., Pakhomov, V. I., Tverdokhlebova, I. I.

TITLE: Cyclolinear polyphenylsiloxanes

SOURCE: Vy\*sokomolekulyarny\*ye soyedineniya, v. 6, no. 7, 1964, 1275-1280

TOPIC TAGS: siloxane, polyphenylsiloxane, benzene, toluene, xylene, dinil, cyclolinear polymer, phenyltrichlorosilane, infrared spectrum, polymer structure

ABSTRACT: Polyphenylsiloxanes obtained by condensation of the hydrolysis products of phenyltrichlorosilane in four solvents (benzene, toluene, xylene and dinil) were investigated by infra-red spectroscopy. All four polyphenylsiloxanes were found to have the same cyclolinear structure predicted by Brown, et al. (J. Amer. Chem. Soc., 82, 6194, 1960). The molecular weight of the polymer was  $4.1 \times 10^6$ . The effect of the reaction medium on the mechanical properties, the degree of polymolecularity and the structural homogeneity of polyphenylsiloxanes was studied in detail. The four test samples were fractionated from 0.5% benzene solution with methanol at 20C. Infrared spectra were then taken for all four polymers, their thermal properties were studied and the molecular weight was determined by light diffusion. The molecular weight distribution curves are plotted. The polymers were found to be rather stable during fractionation. The infrared spectra show that the

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