ODERIY, S. N.

ODERIY, S. N.: "Clinical-roentgenological characteristics of metastasis into the chest in cases of cancer of the mammary gland, and its treatment." Central Sci Res Roentgenological and Radiological Inst, Min Health USSR. Leningrad, 1956. (Dissertation for the Degree of Candidate in Medical Science.)

Knizhnaya Letopis'
No 32, 1956. Moscow.

1. ODENTY, P.

2. USSR (600)

4. Dairying

7. Organization of milk procurement in excess of plan, Molochn. prom. 14 No. 4, 1953.

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

OTTO, Edward, prof. dr.; WOLSKA-BOCHENEK, Janina, prof. dr.; SADOWSKA, Danuta, doc. dr.; ODERFELD, Jan, prof. dr.; BORSUK, Karol, prof. dr.; RYTEL, Zdzislaw, prof. dr.; PIATKIEWICZ, Alesky, prof. dr.; LEITNER, Roman, prof. dr.; ZAKOWSKI, Wojciech, doc. dr.; BIENKOWSKA, dr.

Professor Witold Pogorzelski; obituaries. Matematyka Warszawa Pol no.2:113-136 '64

ODERFELD, Jan, prof. dr.

Trends of works in the theory of machine and mechanism design in Poland during 1961-1963. Przegl mech 22 no.24: 765-766 D'63.

1. Katedra Teorii Maszyn i Mechanizmow, Politechnika, Warszawa.

ODERFELD, Jan

Collecting of information as a basis for decisions. Praca zabesp spol 5 no.6:18-22 Je '63.

1. Instytut Matematyczny, Polska Akademia Nauk, Warszawa.

ODERFELD, Jan (Warszawa)

An algorythm for finding the instantaneous centers. Archiw bud masz 9 no.2:173-189 '62.

ODERFELD, Jan

Choosing a control chart of SQC. Pomiary 8 no.5:240-242 My '62.

1. Instytut Matematyczny, Polska Akademia Nauk, Warszawa.

ODERFELD, J.; PLESZCZYNSKA, E.

Some applications of partitions. Zastos mat 6 no.2:189-198 '62.

1. Instytut Matematyczny, Polska Akademia Nauk, Warszawa i Katedra Teorii Maszyn i Mechanizmow, Politechnika, Warszawa.

ODERFELD, Jan, prof.,dr. (Warszawa); Bogumil, T., mgr.,inz.; GOLINSKI, J., mgr.,inz.; MORECKI, A., doc.,dr.

Empirical determination of the kinetic coefficient of friction. Archiw bud masz 8 no.4:469-472 '61.

1. Zespol Katedry Teorii Maszyn i Mechanizmow Politechniki Warsawskiej

ODERFELD, Jan (Warszawa)

Affinity of empirical curves. Archiw bud masz 8 no.4:461-468 '61.

1. Czlonek rady redakcyjnej kwartalnika "Archiwum Budown Maszyn"

angle disk under (1). Subject of measurement is the friction coefficient between lintel and pegs. The author then demonstrates a mathematical calculation. The friction coefficient of non-lubricated steel against steel was measured on this stand. Care should be taken that the lintel is stiff, otherwise vibrations may occur which influence the results. There are 2 figures and 1 table.

ASSOCIATION: Katedra Theorii Mechanizmów i Maszyn Politechnika Warszawska (Department of Mechanism and Machine Theory, Warsaw Polytechnic).

SUBMITTED: June 1960.

P/032/61/000/
A076/A126

AUTHORS: Oderfeld Jan and Ozimowski, Włodzimierz, (Warsaw)

TITLE: On the experimental determination of the kinetic coefficient of friction

PERIODICAL: Archiwum Budowy Maszyn, v. 8, no. 1, 1961, 21 - 26

TEXT: The article proposes a very simple method of measuring the kinetic coefficient of friction at slow speeds and describes the stand serving that purpose It also suggests some modifications which increase the range of application of this method. The method and stand were elaborated in the Katedra Teorii Mechanizmów i Maszyn Politechnika Warszawska (Department of Mechanism and Machines Theory, Warsaw Polytechnic) in Warsaw. The stand shown in figure 1, consists of: - a support (8) to which a fixed disk (4) is attached in relation to an arm (5) and an angle disk (2), attached on a pin (10) which may rotate freely. Two pegs (6) are mounted on the arm (5). Between both pegs a lintel (7) is placed. The arm (5) is fixed in its lower position with the aid of a clamp (9), where the angle disk is fastened with another clamp (3). Before the experiment the arm with lintel must be placed horizontally and clamped. Further, clamp (3) must be released and zero is set on

1/3

ODERFELD, J.; PLESZCZYNSKA, E. (Warszawa)

A linear estimate of the mean deviation in normal population.
Zastos mat 6 no.1:111-117 '61.

1. Instytut Matematyczny Polskiej Akademii Nauk i Biuro Obliczen i Programow ZPDMM.

(Mathematical statistics)

ODERFELD, J. (Warszawa)

Surfaces of mean humidity. Zastos mat 4 no.4:341-349 '59. (EEAI 9:7)

1. Instytut Matematyczny Polskiej Akademii Nauk.
(Sampling (Statistics)) (Humidity)
(Packing for shipment)

ODERFELD, J.

Statistical investigation of correlated characteristics. p. 255.

ZASTOSOWANIA MATEMATYKI. (Polska Akademia Nauk. Instytut Matematyczny) Warsawa, Poland. Vol. 4, no. 3, 1959

Monthly list of East European Accessions (EEAI) LC, Vol. 9, no. 2, Feb.1960

Uncl.

ODERFELD, J.

TECHNOLOGY

Periodicals: NORMALIZACJA. Vol. 26, no. 2, Feb. 1958

ODERFELD, J. Five years of activities of the Standing Committee for the Study of Scientific Principles of Standardization. p. 72.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 2, February 1959, Unclass.

ODERFELD, J.

A certain application of the adjustment calculus to the kinematics of a mechanism. n. 176.

ZASTOSOWANIA MATEMATYKI. (Polska Akademia Nauk. Instytut Matematyczny) Warszawa, Poland. Vol. 4, no. 2, 1958.

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 1, Jan. 1960.

Uncl.

ODERFELD, Y., (Prof. Dr.)

Prof. Dr. Y. Oderfeld, "Interpolation Methods in Kinematic Analysis of Mechanisms."

paper presented at the 2nd All-Union Conf. on Fundamental Problems in the Theory of Mechines and Mechanisms, Moscow, USSR, 24-28 March 1966.

ODERFIELD, J.

The accuracy of a certain analytic method of determining the velocity and acceleration of a point. p.23

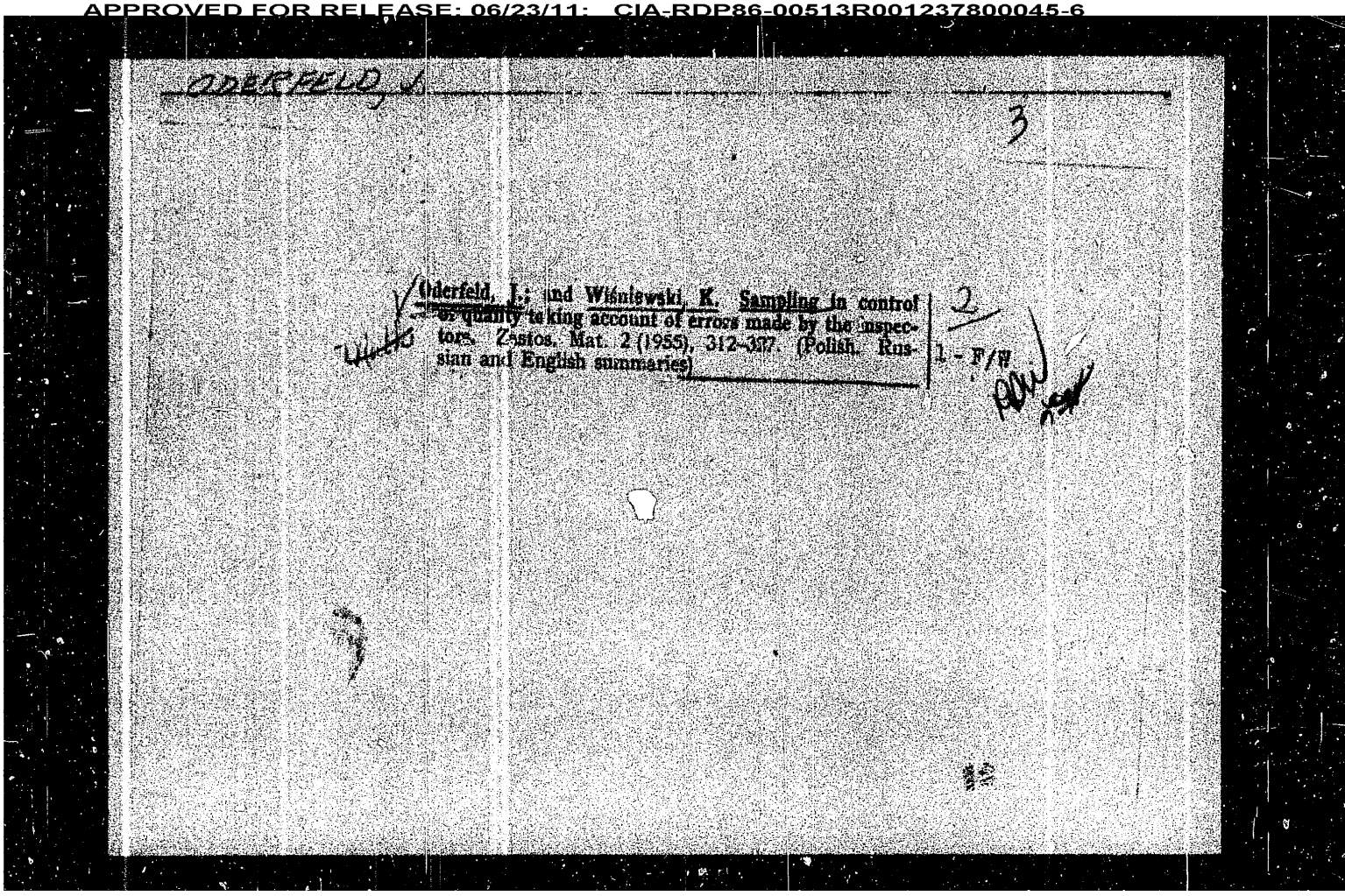
(ARCHIWUM BUDOWY MASZYN. Vol. 4, No. 1, 1957. Warszawa, Poland)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 10, October 1957. Uncl.

Oderfeld, J. **On the concentration of distribution.** Zastos. Mat. 3 (1957), 182–190. (Polish. Russian and English summaries)

Let $\phi$ be the probability density of a continuous one-dimensional random variable $X$ defined in an interval $S$. H. Steinhaus suggested the number $w(\phi)=[\int_S \phi^2(x)dx]^{\frac{1}{2}}$ as a measure of the concentration of $X$ about its modes and conjectured properties which the author proves in the following form: (A) If $\phi_1$ and $\phi_2$ are probability densities, $0\leq c\leq 1$ is a constant and $\phi=c\phi_1+(1-c)\phi_2$, then $w(\phi)\leq cw(\phi_1)+(1-c)w(\phi_2)$. Hence $w(\phi)\leq\max[w(\phi_1), w(\phi_2)]$. (B) If $v_i^2$ is the integral of $\phi^2$ over the $i$th of $N$ subintervals into which $S$ is partitioned, then $\sum_{i=1}^{N} v_i$ is maximal for $v_1=v_2=\cdots=v_N$. Statement (A) immediately follows from the inequality of Schwarz, statement (B) from the familiar differentiation criterion for extrema. A few examples of applications to practical situations requiring high concentration of $X$ are given and the connection between $w(\phi)$ and the standard deviation is discussed.

*H. M. Schaerf* (Madison, Wis.).



ODERFELD, J.

3

Oderfeld, J.; and Wiśniewski, K. Sampling in control of quality taking account of errors made by the inspectors. Zastos. Mat. 2 (1955), 312-327. (Polish, Russian and English summaries)

2

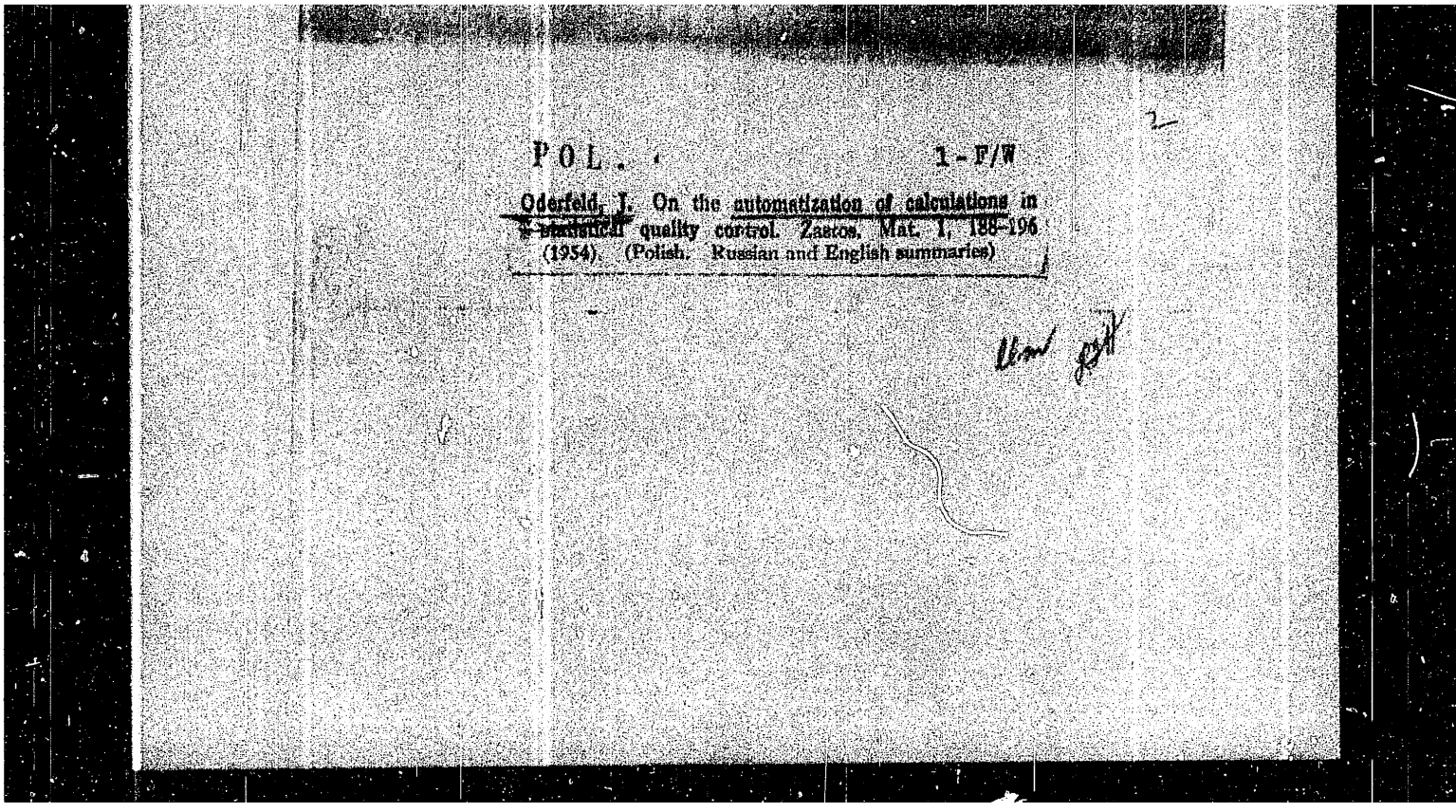
1 - F/H

Oderfeld, Jan POL. V

O Wielkości Kropelek w Rozpylonym Paliwie (On Droplet Distribution in Sprayed Fuel), Jan Oderfeld. *Arch. Budowy Maszyn* (Archives of Machine Building), 1961, pp. 363-369. In Polish, with summaries in English and French. A nomographic method based on the Rosin-Rammler function

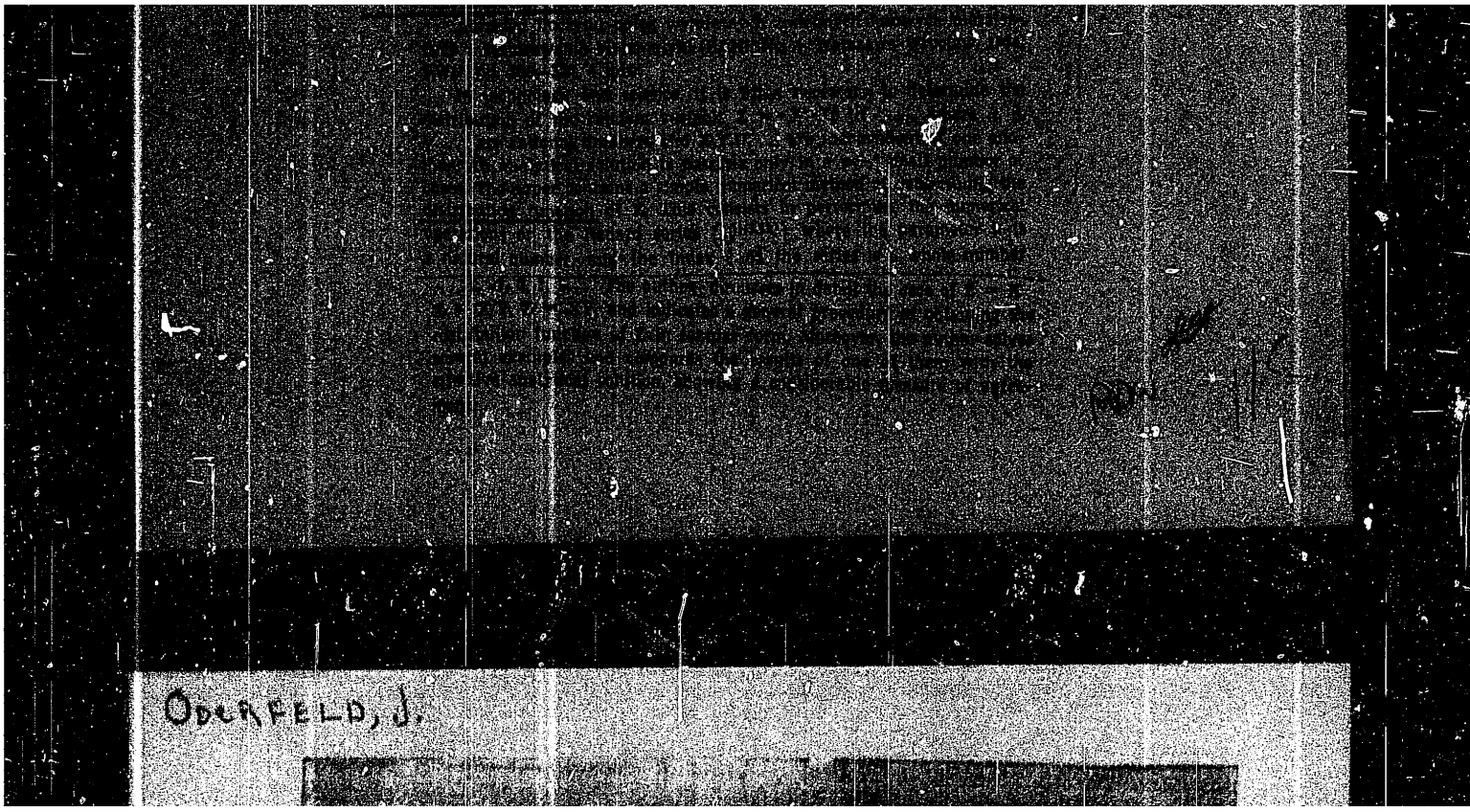
$$\psi(x) = 1 - e^{-(x/x_e)^n}$$

to determine the distribution of droplets mechanically sprayed into a gas turbine engine.



POL. 1-F/W

Oderfeld, J. On the automatization of calculations in ~~statistical~~ quality control. Zastos. Mat. 1, 188–196 (1954). (Polish. Russian and English summaries)

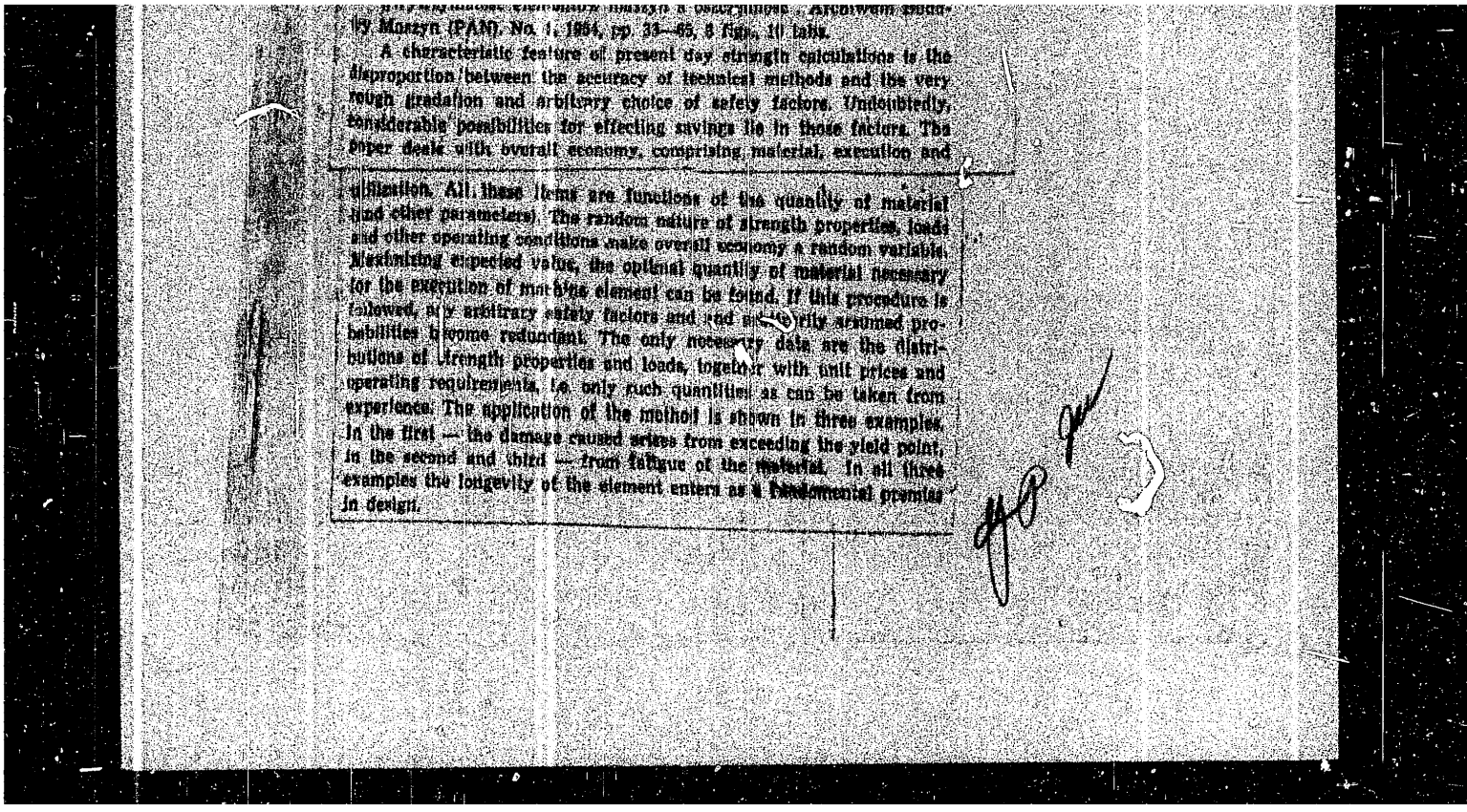



APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001237800045-6

ODERFELD, J.

Oderfeld J. Concerning a Certain Type of Valve Gear Cams. "O pewnym typie krzywek rozrządczych", Archiwum Budowy Maszyn (PAN), No. 1, 1954, pp. 111–118, 5 figs.

MN



by Mazsyn (PAM), No. 1, 1954, pp. 33--65, 8 figs., 10 tabs.

A characteristic feature of present day strength calculations is the disproportion between the accuracy of technical methods and the very rough gradation and arbitrary choice of safety factors. Undoubtedly, considerable possibilities for effecting savings lie in those factors. The paper deals with overall economy, comprising material, execution and utilization. All these items are functions of the quantity of material (and other parameters). The random nature of strength properties, loads and other operating conditions make overall economy a random variable. Maximizing expected value, the optimal quantity of material necessary for the execution of machine element can be found. If this procedure is followed, any arbitrary safety factors and not necessarily assumed probabilities become redundant. The only necessary data are the distributions of strength properties and loads, together with unit prices and operating requirements, i.e. only such quantities as can be taken from experience. The application of the method is shown in three examples. In the first — the damage caused arises from exceeding the yield point, in the second and third — from fatigue of the material. In all three examples the longevity of the element enters as a fundamental premise in design.

POL.

621-229.66 | 519.22

Oderfeld J. The Technique of Statistical Quality Control during Production Cycles.

„Technika statystycznej kontroli jakości w toku produkcji". Rzeczoznawstwo i Mechanizacja. No. 1, 1955, pp. 219–233, 2 figs., 3 tabs.

Review of practical problems occurring in conjunction with the organization and introduction of statistical control in mechanical production cycles, and affecting classification, qualification card and control cards. The author emphasizes the necessity of perfect technique in the adoption of control cards. Numerical examples are quoted to substantiate the contention that statistical control, correctly organized, is likely to curtail defects and keep them to a very low level.

ODERFELD J.

Oderfeld J. The Strength of Machine Elements and the Problem of Economy.

„Wytrzymałość elementów maszyn a oszczędności". Archiwum Budowy Maszyn (PAN). No. 1, 1954, pp. 33–65, 8 figs., 10 tabs.

MN

FIDELIS, E.; ODERFELD, J. (Warszawa)

Two-step control with consideration of the measurement errors.
Zastos mat 6 no.3:249-256 '62.

KRESHKOV, Anatoliy Pavlovich. Printsipy kachestvennogo analiza: YAROVENKO, A.N., dots.; KRESHKOVA, Ye.K., st. prepod.; VILENBORG, S.S., kand. khim. nauk, dots.; MIKHAYLENKO, Yu.Ye.; STUPNIKOVA, N.I., red.; ODERBERG, L.A., red.

[Principles of analytical chemistry; qualitative and quantitative analysis in two books] Osnovy analiticheskoi khimii; kachestvennyi i kolichestvennyi analiz [v dvukh knigakh]. Izd.2., perer. Moskva, Khimiia. 2 vol.
(MIRA 18:12)

KEL'MAN, Faina Matveevna; BRUTSKUS, Yelena Borisovna; OSHEROVICH, [illegible] Khaimovna; MIKHAL'CHUK, B.V., red.; ODERBERG, [illegible], red.

[Analysis methods in the production control of sulfuric acid and phosphorous fertilizers] Metody analiza pri kontrole proizvodstva sernoi kisloty i fosfornykh udobrenii. Moskva, Khimiia, 1965. 390 p. (MIRA 18:12)

LUR'YE, Yuliy Yul'yevich; AGASYAN, P.K., red.; GRINBERG, L.N., red.

[Handbook of analytical chemistry] Spravochnik po analiticheskoi khimii. Izd.2., perer. i dop. Moskva, Khimiia, 1965. 389 p. (MIRA 18:8)

KRESHKOV, Anatoliy Petrovich; YAROSLAVTSEV, Anatoliy Anatol'yevich; ODERBERG, I.N., red.

[Course in analytical chemistry] Kurs analiticheskoi khimii. Izd.2., perer. Moskva, Khimiia. Book 1. [Qualitative analysis] Kachestvennyi analiz. 1964. 429 p.
(MIRA 17:10)

KRESHKOV, Anatoliy Pavlovich; YAROSLAVTSEV, Anatoliy Anatol'yevich; ODERBERG, L.N., red.

[Course in analytical chemistry] Kurs analiticheskoi khimii. Izd.2., perer. Moskva, Khimiia. Book 2. 1964. 324 p. (MIRA 17:11)

ODENOV, Bogdan Stepanovich; LAPATKIN, N.A., red.; PARAKHINA, N.L., tekhn. red.

[Clinical basis for transperitoneal lithotomy] Klinicheskoe obosnovanie chrezbriushinnogo kamnesecheniia. 2. izd., dop. i perer. Moskva, Medgiz, 1963. 69 p. (MIRA 16:10)
(CALCULI, URINARY) (BLADDER—SURGERY)

ODENOV, B. S.

Clinical basis for transperetoneal resection in case of calculit Moskva, Izd-vo Akademii med. nauk SSSR, 1952. 38 p.

GRIGOV, B. E.

"Problem of Urino-Purulent Infection," Khirurgiya, No. 4, 1949. Honored Dr. Averbakh-Mikhan SSR. Cand. Med. Sci., Hospital Surgical Clin., Averbakh-Mikhan Med. Inst. Surgical Dept. Semakhinsk Hosp., -c1949-.

ODEL'SKIY, Ya. E.

Cand Tech Sci - (diss) "Study of several protective properties of ventilated combination roofing." Kaunas, 1961. 21 pp; (State Committee of Higher and Secondary Specialist Education of the Council of Ministers Lithuanian SSR, Kaunas Polytechnic Inst); 200 copies; price not given; (KL, 10-61 sup, 217)

ODEL'SKIY, Ya.E.

The effect of air permeation on the heat exchange and humidity processes in exterior walls. Sbor.nauch.trud.Bel.politekh.inst. no.89:59-72 '60. (MIRA 14:8)

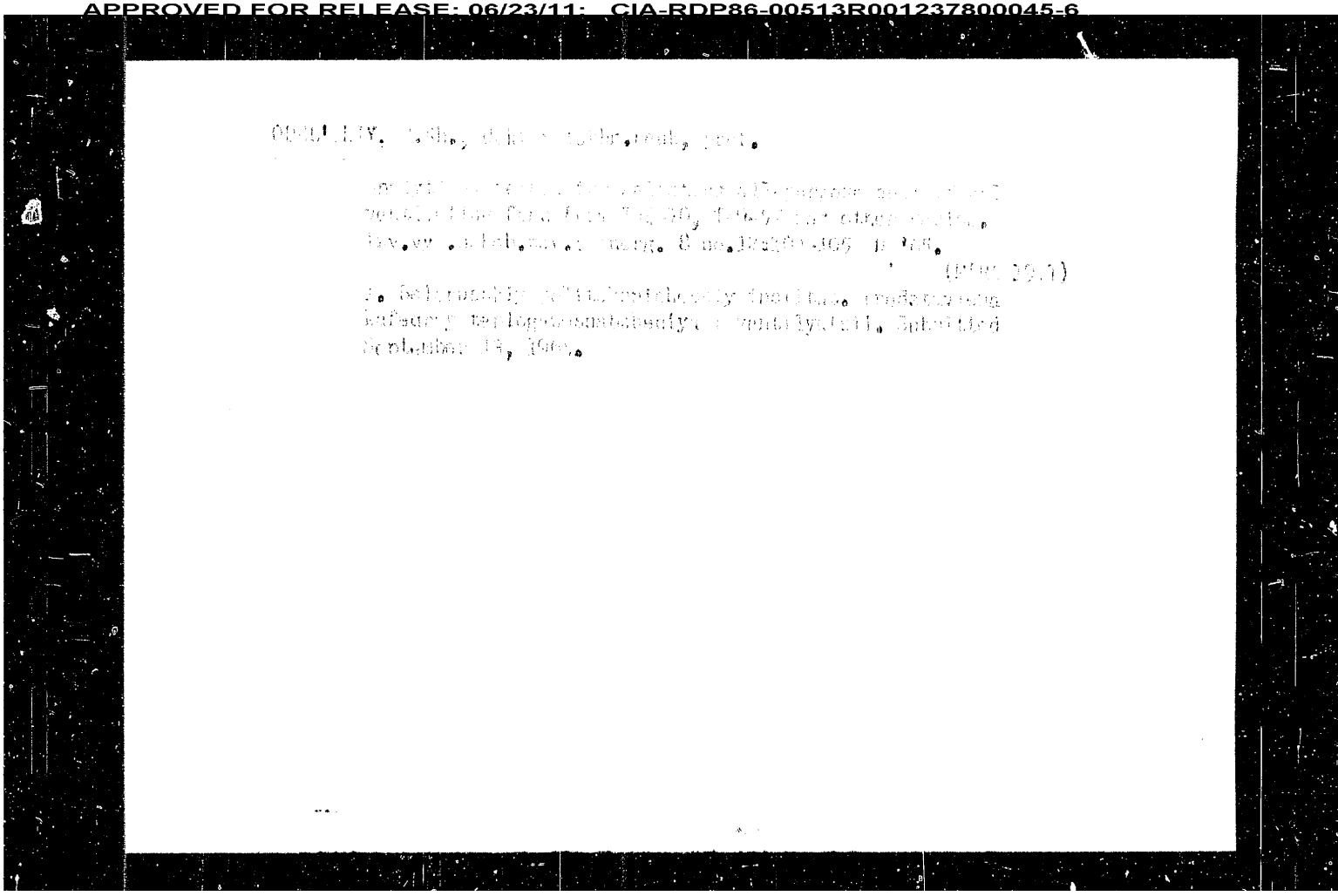
(Walls)

ODEL'SKIY, Yakov Emmanuilovich ; KAPRANOVA, N V., red.; KONCHITS, Ye.P., tekhn. red.

[Protective properties of ventilated built-up roofs] Zashchitnye svoistva ventiliruemykh sovmeshchennykh krush. Minsk, Redaktsionno-izd. otdel BPI im. I.V.Stalina, 1960. 64 p. (MIRA 14:10)
(Roofing, Concrete)

ODEL'SKIY, Ya.E., inzh.

Walls of large-element apartment houses. Sbor.nauch.trud.Bel. politekh.inst. no.81:80-81 '59. (MIRA 13:5)
(Apartment houses) (Walls)



ODEL'SKIY, E.Kh., zasl. deyatel' nauki i tekhniki, doktor tekhn. nauk, prof., red.; AKALOVICH, N.M., red.; LITVINSKAYA, T.S., red.; TETERINA, L.N., red.

[Problems of construction thermophysics; transactions of the Interuniversity Scientific Conference held jointly with workers from industry, research and design institutes and the Scientific Technological Society of the building industry of the U.S.S.R., February 1-4, 1964 in Minsk] Problemy stroitel'noi teplofiziki; trudy Mezhvuzovskoi nauchnoi konferentsii sovmestno s rabotnikami promyshlennosti, nauchno-issledovatel'skikh i proektnykh institutov i NTO stroiindustrii SSSR 1-4 fevralia 1964. g., g. Minsk. Minsk, Vysshaia shkola, 1965. 526 p. (MIRA 18:7)

1. Mezhvuzovskaya nauchnaya konferentsiya po problemam stroitel'noy teplofiziki, Minsk, 1964. 2. Belorusskiy politekhnicheskiy institut, Minsk (for Odel'skiy).

OBEL'SKIY, G.Kh.

Internal and external heat exchange in concrete heating panels. Izv. vys. ucheb. zav.; energ. 6 no.8:95-100 Ag '63. (MIRA 16:9)

1. Belorusskiy politekhnicheskiy institut. Predstavlena kafedroy teplogazosnabzheniya i ventilyatsii.
(Heat--Transmission)

ODEL'SKIY, E.Kh., doktro tekhn.nauk, prof.

Concerning the economic efficiency of long-distance gas transportation systems. Izv.vys.ucheb.zav.; energ. 5 no.11:108-112 N '62.
(MIRA 15:12)

1. Belorusskiy politekhnicheskiy institut. Predstavlena kafedroy teplogazosnabzheniya i ventilyatsii.
(Gas, Natural—Pipelines)

ODEL'SKIY, E.Kh., doktor tekhn.nauk, prof.

Internal and external heat transfer in concrete heating panels. Izv. vys. ucheb. zav.; energ. 4 no.1:65-72 Ja '61. (MIRA 14:2)

1. Belorusskiy politekhnicheskiy institut. Predstavlena kafedroy teplogazosnabzheniya i ventilyatsii.
(Heat--Transmission) (Concrete--Thermal properties)

DOYNIKOV, B.D., kand. tekhn. nauk, dots. Prinimali uchastiye: ODEL'SKIY, E.Kh., prof., zasl. deyatel' nauki i tekhniki BSSR, doktor tekhn. nauk; KUDRYASHOV, L.I., prof.; ERLIKMAN, A.M., dots., UVAROV, G.A., dots.; BLYUM, A.G., red.; KUZ'MENOK, P.T., tekhn. red.

[Studying the heat-exchange processes in the water systems of small capacity steam boilers] Issledovanie teploobmennykh protsessov vodnogo rezhima parovykh kotlov maloi moshchnosti. Minsk, Redaktsionno-izd. otdel BPI im. I.V.Stalina, 1961. 170 p. (MIRA 14:11)
(Boilers) (Heat—Transmission)

ODEL'SKIY, Emmanuil Khatskelevich, doktor tekhn. nauk, prof.; KONTSEVAYA, T.V., red.; PESINA, S.A., tekhn. red.

[Gas-supply system] Gazosnabzhenie. Minsk, Redaktsionno-izdatel'skii otdel BPI im. I.V.Stalina. Pt.3. 1961. 128 p. (MIRA 14:9)

(Gas)

ODEL'SKIY, Emmanuil Khatskelevich, doktor tekhn. nau, prof.; KONTSEVAYA, P.V., red.; KUZ'MENOK, P.T., tekhn. red.

[Hydraulic design of pipes for various purposes] Gidravlicheskii raschet truboprovodov raznogo naznacheniia. Minsk, Redaktsionno-izdatel'skii otdel BPI im. I.V.Stalina, 1961. 76 p.
(MIRA 14:5)

(Pipe--Hydrodynamics)

ODEL'SKIY, E.Kh., prof., doktor tekhn.nauk; KONTSEVAYA, T.V., red.;
IZAKOV, Sh.I., tekhred.

[Gas supply system] Gazosnabzhenie. Minsk, Redaktsionno-izdatel'skii otdel BPI im.I.V.Stalina. Pt.2. 1960. 176 p.
(MIRA 13:7)

(Gas distribution)

SOLDATKIN, M.T., kand. tekhn. nauk, dotsent; MUKHIN, O.A., assistent; ANDREYEVSKIY, A.K., dotsent; KURPAN, M.I., kand. tekhn. nauk, dotsent; ODEL'SKIY, E.Kh., doktor tekhn. nauk, prof.; ANDREYEVSKIY, A.K., kand. tekhn. nauk, dotsent, red.; KONTSEVAYA, T.V., red.; KUZ'MENOK, P.T. tekhn. red.

[Laboratory exercises in heating, ventilation, and gas supply] Laboratornyi praktikum po otopleniiu, ventiliatsii i gazosnabzheniiu. Pod obshchei red. E.Kh.Odel'skogo i A.K.Andreevskogo. Minsk, Redaktsionno-izdatel'skii otdel BPI, 1960. 143 p. (MIRA 14:7)

1. Minsk. Belorusskiy politekhnicheskiy institut. Kafedra "Teplogazosnabzheniye i ventilyatsiya."
(Ventilation). (Heating) (Gas--Heating and cooking)

LEVKOVICH, V.V.; ODEL'SKIY, E.Kh., prof., doktor tekhn.nauk, zasluzhennyy deyatel' nauki i tekhniki BSSR, retsenzent; BLYUM, A.G., red.; KOMCHITS, Ye.P., tekhn.red.

[Heat losses in water systems operating under varying conditions] Poteri tepla vodianymi setiami pri neustanovivshemsia rezhime. Minsk, Redaktsionno-izdatel'skii otdel BPI im. I.V.Stalina, 1960. 136 p. (MIRA 13:7)

(Heat engineering) (Heat--Transmission)

ODEL'SKIY, E.Kh., prof., doktor tekhn.nauk; KUDRYASHOV, L.I., prof. doktor tekhn.nauk

Hydrodynamic investigations of tubular cyclone combustion chambers. Sbor. nauch. trud. Bel. politekh. inst. no.74:100-114 '59. (MIRA 13:8)

(Furnaces) (Gas flow)

ODEL'SKIY, E.Kh., prof., doktor tekhn.nauk; DOYNIKOV, B.D., dotsent, kand.tekhn.nauk

Using horizontal collectors in the high-temperature zone of double sided heat-reflecting baffle plates of small boilers. Sbor. nauch. trud. Bel. politekh. inst. no.74:86-99 '59. (MIRA 13:8)
(Boilers)

ODEL'SKIY, E.Kh., prof., doktor tekhn.nauk

Remarks on using the air of upper atmospheric layers for ventilation purposes. Sbor. nauch. trud. Bel. politekh. inst. no.74:19-31 '59. (MIRA 13:8)
(Air--Pollution) (Ventilation)

ODEL'SKIY, E.Kh. (Minsk)

Research on the heating of residential and public buildings carried out in White Russia. Vod.i san.tekh. no.9:1-4 S '59. (MIRA 12:12)
(Hot-water heating)

ODEL'SKIY, E.Kh., doktor tekhn. nauk, prof.

Using main gas pipelines as gasholders. Izv. vys. ucheb. zav.; energ. 2 no.7:111-114 Jl '59. (MIRA 13:1)

1.Belorusskiy politekhnicheskiy institut.
(Gas, Natural--Pipelines)
(Gas, Natural--Storage)

ODEL'SKIY, E.Kh.; KAPRANOVA, N.V., red.; YARISH, Ye.I., tekhred.

[Gas manufacture] Gazosnabzhenie. Minsk, Red.-izd. otdel BPI im. I.V.Stalina, 1959. 111 p. (MIRA 12:10)
(Gas manufacture and works)

ODEL'SKIY, M.Kh., doktor tekhn. nauk, prof.

Wave resistance in gas pipelines. Izv. vys. ucheb. zav.; energ. no.4:81-83 Ap '58. (MIRA 11:6)

1. Belorusskiy politekhnicheskiy institut.
(Gases--Pipelines)

ODEL'SKIY, E.Kh., zasluzhennyy deyatel' nauki i tekhiki BSSR, prof., doktor tekhn.nauk

Research work and training of specialists at the Department of Heat Supply and Ventilation. Sbor.nauch.trud.Bel.politekh.inst. no.66: 158-166 '57.

Selection of an optimum gas-transportation system for remote distances. (184-197) (MIRA 16:9)

USSR /Chemical Technology. Chemical Products H-2
and Their Application
Processes and Apparatus for Chemical Technology

Abs Jour: Referat Zhur - Khimiya, No. 1, 1958, 1504

$\gamma$ = 1 kg/nm3. Local resistances are taken into account according to the method of equivalent length.

Card 3/3

USSR /Chemical Technology. Chemical Products and Their Application
Processes and Apparatus for Chemical Technology

H-2

Abs Jour: Referat Zhur - Khimiya, No. 1, 1958, 1504

ible medium of constant specific gravity $\gamma$. On this basis has been derived, by transformation of the Darcy-Weisbach equation and the flow continuity equation, a general equation of motion of any low-pressure gas in a rectilinear cylindrical pipe: $(P_1 - P_2) / l = 1.7 \cdot 10^5 V^{1.75} D^{-4.75} \cdot \gamma$ mm water column / running meter, wherein $P_1 - P_2$ is pressure drop in kg/cm$^2$ over a distance of 1 meters; V -- rate of flow of the gas in m$^3$/hour; D -- diameter of the pipe in mm; $\gamma$ -- specific gravity of the gas in kg/m$^3$. A table has been compiled for determining friction resistance per 1 running meter, in steel gas pipes and seamless pipes, in the case of a gas of

Card 2/3

ODEL'SKIY E. KH.

USSR /Chemical Technology. Chemical Products and Their Application
Processes and Apparatus for Chemical Technology

H-2

Abs Jour: Referat Zhur - Khimiya, No 1, 1958, 1504

Author : Odel'skiy E. Kh.

Inst : Belorussian Polytechnic Institute

Title : Equation of Motion of a Low-Pressure Gas in Pipes

Orig Pub: Sb. nauchn. tr. Belorusak. politekhn. instituta, 1957, No. 56, 143-152

Abstract: It is shown that during its motion through pipes a low-pressure gas can be considered, with a sufficient degree of accuracy, as an incompress-

Card 1/3

ODEL'SKIY, E.Kh., doktor tekhn.nauk

Problems of combining municipal gas and heat producing systems.
Trudy Inst.energ.AN BSSR no.3:3-24 '57. (MIRA 12:1)
(Heat engineering) (Gas manufacture and works)

8(6) SOV/112-59-3-4542

Combining Municipal Heat Supply and Gas Supply

if a city heat supply can be made on the basis of a local low-grade fuel. A comparison of gas networks and heat networks on the basis of metal expenditure and capital investment shows that the gas network supplying all heat consumers is more economical than a combination of a water network for heating and a gas network for cooking. Gas supply to residential consumers requires one-third of the metal expenditure and one-fifth of the capital investment required by the heat-supply system. If gas is available, insignificant engineering-and-economic advantages of a residential heating-and-electricity power plant justify its construction only in case of heat supply to year-around industrial consumers and to municipal districts having a considerable heat-consumption density and situated near the power plant. Bibliography: 5 items.

Soviet abstractor's note: The conclusions of the above article ignore the fundamental advantage of central heat supply: fuel saving due to combined production of heat and electric energy at the heating-and-electricity stations.

M. L. Z.

Card 2/2

8(6) SOV/112-59-3-4542

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 3, p 37 (USSR)

AUTHOR: Odel'skiy, E. Kh.

TITLE: Combining Municipal Heat Supply and Gas Supply
(O sochetanii teplofikatsii i gazifikatsii gorodov)

PERIODICAL: V sb.: Kompleksnoye energosnabzheniye gorodov. Minsk, 1957, pp 48-59

ABSTRACT: In connection with adoption of municipal gas supply (in Russia), principles for combining heat supply and gas supply are formulated. The following data are given for a city of about 100,000 inhabitants in the BelSSR: fuel consumption, efficiency of major fuel-consuming devices, overexpenditure of heating-station fuel as compared with probable gas consumption. Formulae are presented for determining fuel savings with the heating-and-electricity plants as compared with boiler plants. It is noted that the ultimate heating-cost savings for residential consumers supplied by central-heating plants is about 3%. In the author's opinion, residential central heating is advantageous

Card 1/2

ODEL'SKIY, E. KH

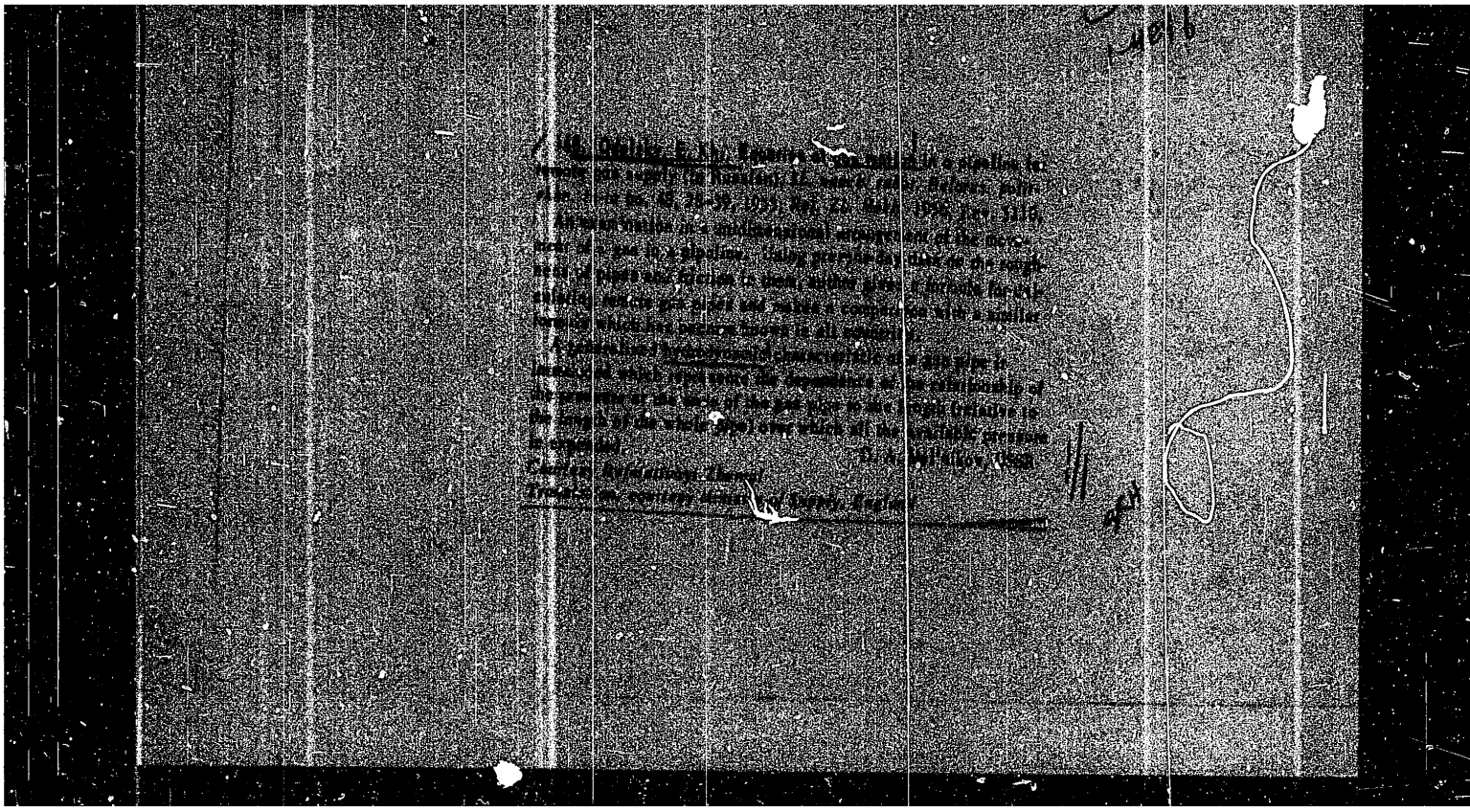
VARANKIN, Yu.V., kand.tekhn.nauk, glavnyy red.; LEONKOV, A.M., kand.tekhn. nauk; ODEL'SKIY, E.Kh., prof., dokto[illegible] nauk; REPRINTSEVA, S.M., inzhener; BARTMAN, B.I., tekhn.red.

[General power supply for cities; papers given at an engineering conference] Kompleksnoe energosnabzhenie gorodov; materialy k nauchno-tekhnicheskomu soveshchaniiu. Minsk, 1957. 213 p. (MIRA 10:12)

1. Nauchno-tekhnicheskoye obshchestvo energeticheskoy promyshlennosti. Belorusskoye respublikanskoye otdeleniye.
(Electric power distribution)

OIEL'SKIY, [illegible]., dekter tekhnicheskikh nauk.

Steam boiler over the firebox of drying apparatus. Strei.mat.izdel.i konstr. 2 no.3:26-27 Mr '56. (MLRA 9:7)
(Drying apparatus)



ODEL'SKIY, E.Kh.

75. Thermal processes during the accelerated firing of building bricks.—E. Kh. Odel'skii. (*Glass & Ceramics*, Moscow, 12, No. 6, 23, 1955). In Russian. A brief theoretical analysis of the Duvanov method. Several formulae relating to the firing processes are given and it is concluded that there are theoretical foundations for this "progressive" method. (4 figs., 1 table.) HT

ODEL'SKIY, E.Kh.

Combustion of fuel pressed into green bricks. Trudy Inst.energ. AN BSSR no.2:108-113 '55. (MLRA 9:8)
(Brickmaking)

ODNL'SKIY, E. Kh.

Investigation of the process of dehydrating natural gas utilizing natural cooling in gas lines. Trudy Inst.energ.AN BSSR no.2: 96-107 '55. (MLRA 9:8)

(Gas, Natural)

GIEL'SKIY, E. Kh.

USSR/ Miscellaneous - Ceramics production

Card 1/1 ; Pub. 104 - 9/12

Authors ; Giel'skiy, E. Kh., Prof. Dr. of Techn. Sciences

Title ; Thermal processes in the kilning zone of annular and tunnel type furnaces

Periodical ; Stek. i ker. 9, 27 - 30, September 1954

Abstract ; Technological data on the thermal processes taking place in the kilning zone of ceramic furnaces during the formation of tiles and ceramic products. Problems regarding rational kilning of structural tile and brick are discussed. Tables; drawings; graphs.

Institution : ....

Submitted : ....

ODEL'SKIY, E. Kh.

B. T. R.
Vol. 3 No. 4
Apr. 1954
Fuels and Combustion

(1) Fuel

5006* Combustion of Solid Fuel Introduced Directly in the Brick Clay During Molding. (Russian.) E. Kh. Odel'skii. *Steklo i Keramika*, v. 10 no. 12, Dec. 1953, p. 18-20.
Discusses characteristics and behavior of various fuels which can be included in the clay. Table, graphs. 3 ref.

6-4-54
8916

ODEL'SKIY, E. KH., Prof

PA 10/49T62

USSR/Engineering May 48
Furnaces
Testing and Standardization

"Results of Heating and Engineering Tests on New Cyclone Type Furnaces," E. Kh. Odel'skiy, Prof, 1½ pp

"Za Ekonomiyu Topliva" No 5

Furnace was described in "Za Ekonomiyu Topliva" No 11, 1947. Discusses performance data given.

10/49T62

G. I. Skanavi

S/105/60/000/04/023/024
B007/B008

Corresponding Member of the AS USSR, and later independently as Director of the Laboratory of the Physics of Dielectrics. From 1950 to 1958 he wrote the book "Fizika dielektrikov" ("Physics of Dielectrics"). He organized the Second All-Union Conference on the Physics of Dielectrics in November 1959. During the last years of his life he was teaching physics at Moskovskiy universitet (Moscow University). He was Secretary of the FIAN Party Organization. There is 1 figure.

Card 2/2

AUTHORS: Ponomarenko, F. T., Gaylish, Ye. A., Martyushov, K. I., Odelevskiy, V. I., Verbitskaya, T. N., Fridberg, I. D., Manoylov, V. Ye., Verebeychik, N. M., Zhukovskiy, V. I., Lisker, K. Ye., Mikhaylov, M. M., Knyazev, T. S., et al.

S/105/60/000/04/023/024
B007/B008

TITLE: G. I. Skanavi

PERIODICAL: Elektrichestvo, 1960, Nr 4, p 94 (USSR)

TEXT: This is an obituary for Professor Georgiy Ivanovich Skanavi, scientist in the field of physics of dielectrics, who died on November 11, 1959. He graduated from the fiziko-mekhanicheskiy fakul'tet Leningradskogo politekhnicheskogo instituta (Department of Physics and Mechanics of the Leningrad Polytechnic Institute), and then worked at the "Elektrosila" Works in Leningrad. From 1935 to 1938 he worked at the Nauchno-issledovatel'skiy institut (Scientific Research Institute) as a team leader, and later as director of a scientific department. The mass production of ceramic radiotechnical capacitors was started in one of the works on his initiative and with his direct cooperation. He took his doctor's degree in 1946, and then became a professor. From 1940 until his death, he worked at the Fizicheskiy Institut Akademii nauk SSSR (Physics Institute of the AS USSR), first under the direction of B. M. Vul,

Card 1/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001237800045-6

AUTHOR: Syritskaya, L. N. S/072/60/000/03/021/023
B003/B006

TITLE: 3rd All-Union Conference on the Vitreous State

PERIODICAL: Steklo i keramika, 1960, Nr 3, pp 45-46 (USSR)

ABSTRACT: The 3rd All-Union Conference on the Vitreous State was held in Leningrad at the end of 1959. It was organized by the Institut khimii silikatov AN SSSR (Institute of the Chemistry of Silicates AS USSR), Vsesoyuznoye khimicheskoye obshchestvo imeni D. I. Mendeleyeva (All-Union Chemical Society imeni D. I. Mendeleyev) and Gosudarstvennyy opticheskiy institut imeni S. I. Vavilova (State Optical Institute imeni S. I. Vavilov). More than 100 reports on the structure of glass, investigation methods of the vitreous state, the mechanism of vitrification and physicochemical and technical properties of glasses were delivered. The Conference was opened by Academician A. A. Lebedev. [illegible]. At the 5th meeting, 9 reports dealt with the investigation results of sodium-boron-silicate glasses. A. A. Appen and Gan' Fu-Si, "Boron and Alumoboron Anomaly of the Properties of Silicate Glasses"; Ye. I. Galant, "On the Coordination Numbers of Aluminum and Boron in Some Glasses"; S. P. Khdanov reported on structural changes in boron-silicate glasses; Ye. A. Porai-Koshits and S. P. Khdanov reported on some controversial problems concerning the structure of boron-silicate glasses and their porous products; Ye. A. Porai-Koshits and N. S. Andreyev, "Submicroscopic Inhomogeneities in the Structure of Complex Glasses". The 15 reports at

Card 3/8

the 6th meeting dealt with the electric properties of glasses. L. M. Belyayevskaya reported on the structure determination of glass with the aid of an inhomogeneous electric field; B. M. Vorob'yev and V. I. Odelevskiy, "Structure and Properties of Some Oxide Glasses in the Light of the Polymer-theory of the Vitreous State"; E. L. Mueller reported on the agility and the degree of dissociation as functions of the ionic and atomar composition of the glass; V. I. Odelevskiy reported on the nature of dielectric losses in glasslike and crystalline aluminosilicates; V. P. Petrovskiy, "Investigation of the Dielectric Polarization and the Losses in Phosphate Glasses"; V. A. Fresnov, V. I. Chuan and L. M. Kreslinskiy reported on investigations of the conductivity of glasses in electric high-tension fields. K. K. Yevstropyev on the diffusion of $Na^{22}$ and $K^{42}$ in some silicate glasses, V. A. Ioffe, I. S. Yaumbayeva and G. I. Khrustenko on electric properties of crystalline and glasslike aluminosilicates. O. V. Mazurin spoke on his studies which were carried out under the supervision of Professor K. S. Yevstropyev at the Kafedra stekla LTI imeni Lensoveta (Chair for Glass of the Leningrad Technological Institute imeni Lensovet) in the report: "The Dependence of the Electroconductivity of Glasses on the Chemical Composition". V. A. Kharitonov, O. V. Mazurin and N. N. Sakhova gave investigation results on the specific electroconductivity of glasses of the system $SiO_2 - B_2O_3 - BaO$ in the temperature range of from 400-1300° and on the influence of additions of aluminum- and zinc oxide on the electric conductivity of these glasses. At the 7th meeting, 6 reports dealt with glasses as semiconductors, 9 with the coloring of glasses and the influence of radiation and 4 reports with technical properties of glasses. V. A. Ioffe and G. I. Khrustenko, "Electric Properties of Some Semiconductor Glasses". B. T. Kolomiyets, N. A. Goryunova and V. P. Shilo reported on methods for the production of chalcogenide glasses, on some of their general properties and on the limits of the vitreous state in the systems $Tl_2Se - As_2Se_3$, $Tl_2Se - Sb_2Se_3$, $Sb_2Se_3 - As_2Se_3$, Tl - As - Se. B. T. Kolomiyets and E. V. Pavlov reported on the optical absorption in a number of binary chalcogenide systems. B. T. Kolomiyets, T. N. Mamontova and G. P. Kazarova reported on the electron conductivity of chalcogenide glasses. Ar. A. Vaypolin, Ye. A. Porai-Koshits, "Radiographic Investigation of the Structure of Vitreous Arsenic Chalcogenides". V. V. Tarasov and V. A. Rozhnovskiy reported on the chain structure of the vitreous arsenious sulphide determined by them with calorimetric measurements. K. P. Asarov reported on structure and properties of ferrous boron glasses and (32)

Card 5/8

29756
S/194/61/000/006/031/077
D201/D302

A new alkali-free hard structure...

The combination consisted of compounds having small and large ions - modificators. The method facilitates obtaining glass with a lower re-crystallizing property, good electric properties at high temperature and a low boiling point. [Abstracter's note: Complete translation]

Card 2/2

29756
S/194/61/000/006/031/077
D201/D302

15.2120

AUTHORS: Verebeychik, N.M. and Odelevskiy, V.I.

TITLE: A new alkali-free hard structure silicate glass containing zirconium

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 6, 1961, 8, abstract 6 G69 (V sb. Stekloobrazn. sostoyaniye, M. - L., AN SSSR, 1960, 282-286, Discus, 303-304)

TEXT: The method of batches of saturated silicates has been used in manufacturing alkali-free hard structure silicate glass. Determination of the glass composition was performed starting with mineral components using the known diagrams of balance of double and triple systems. The free silicil acid from the mineral batch was excluded and saturated silicates were used (zirconium-boron and aluminum silicates). Mineral components (not less than four) having similar melting points and nearly identical values were used.

Card 1/2

PHASE I BOOK EXPLOITATION SOV/4379

Vsesoyuznaya konferentsiya po fizike dielektrikov. 2d, 1958

Fizika dielektrikov; trudy vtoroy vsesoyuznoy konferentsii (Physics of Dielectrics; Transactions of the 2d All-Union Conference on the Physics of Dielectrics) Moscow, Izd-vo AN SSSR, 1960. 532 p. Errata slip inserted. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Fizicheskiy institut imeni P.N. Lebedeva.

Ed. of Publishing House: Ye.L. Starokadomskaya; Tech. Ed.: I.N. Gorokhova; Editorial Board: (Resp. Ed.) G.I. Skanavi, Doctor of Physics and Mathematics (Deceased), and K.V. Filippova, Candidate of Physics and Mathematics.

PURPOSE: This collection of reports is intended for scientists investigating the physics of dielectrics.

COVERAGE: The Second All-Union Conference on the Physics of Dielectrics held in Moscow at the Fizicheskiy institut imeni P.N. Lebedeva (Physics Institute imeni P.N. Lebedev) in November 1958 was attended by representatives of the principal scientific centers of the USSR and of several other countries. This collection contains most of the reports presented at the conference and summaries of the discussions which followed. The reports in this collection deal with dielectric properties, losses, and polarization, and with specific inductive capacitance of various crystals, chemical compounds, and ceramics. Photoelectrets, ferroelectric crystals, and various radiation and irradiation effects on dielectrics are investigated. The volume contains a list of other papers presented at the conference dealing with polarization, losses, and breakdowns of dielectrics, which were published in the journal Izvestiya AN SSSR, seriya fizicheskaya, No. 2, 1960. No personalities are mentioned. References accompany each report.



ODELEVSKIY, V.I.

5(2) SOV/78-4-3-8/34

AUTHORS: Verebeychik, N. M., Gindin, Ye. I., Odelevskiy, V. I., Prokhvatilov, V. G.

TITLE: New Modification of the Crystalline Magnesium Metasilicate (Novaya modifikatsiya kristallicheskogo metasilikata magniya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 3, pp 535-542 (USSR)

ABSTRACT: The existence of the δ-modification of magnesium metasilicate has been discovered by the thermal decomposition of talc. Investigations of the X-ray structure have shown that the δ-phase distinguishes distinctly from protoenstatite. The existence of δ-$MgSiO_3$ has been confirmed by comparative investigations of the refraction indices, the density and the mechanical stability of the various modifications. The thermodynamical stability of the δ-phase was investigated at 900°. In the absence of mineralizers the δ-phase is stable up to 1400°C. The δ-modification of $MgSiO_3$ can be used for the production of non-aging steatite. There are 3 figures, 3 tables, and 16 references, 7 of which are Soviet.

Card 1/2

Discussions on the Report Submitted by A. A. Borgardt 48-22-3-11/30

Ansel'm (Ref 2) that the new theory developed by Debye is completely wrong, does not correspond with facts. When carefully reading the work by Ansel'm it may be realized that he has not criticized the conception of theinner field in itself but only the assumption of its isotropy. Other works (Ref 4 to 6) are just based on the variant of the theory developed by Debye, improved by Ansel'm. The model referred to by Odelevskiy, has, according to the author's opinion, no immediate relation with the discussed problem. He says that the effect of the inner field on the polarization of a dipole-matter is the consequence of a " stochastic" model and of elementary electro-dynamical conceptions. As to the theory developed by Kirkvud, theinner field really is lacking. An effective dipole-moment, which deals with the same conceptions from another standpoint, exists however. The advantage of our theory, the lecturer says, consists in the lack of random parameters which are found in the theory developed by Kirkvud. There are 1 figure, and 7 references, 6 of which are Soviet.

AVAILABLE: Library of Congress

Card 3/3 1. Gases--Polarization 2. Liquids--Polarization

ed by Debye and his successors. The complication and "perfection" of the calculation-apparatus of the theory dealt with does not alter the fact in the works by Borgardt and Finkel'shteyn that the physical conceptions on which the theory is based are wrong and that the theory itself is consequently wrong, too. M. P. Tonkonogov says that a difference should be made between the raising of the problem by Borgardt which is absolutely correct, and the solution which represents an extremely rough approximation. Borgardt solves the problem of the calculation of the molecular field more logically and rigorosly than Ansel'm. There is no reason, therefore, to reproach the author for any incorrectness in raising the problem. The solution of the problem is, however, very poor. Yet it is valuable that the calculation of the dielectric constant contains no undetermined parameters.- E. M. Fradkina says that she raises no objection against the theory developed by Borgardt. Concerning the criticism by Odelevskiy, she is of the opinion that the latter believes that the theory developed by Kirkvud is the only correct one. G. I. Skanavi says: The criticism by Odelevskiy is based on the firm conviction that th interaction of molecules cannot change their polarizability. This does not seem to be fully substantiated. A. A. Borgardt: The assertion based on the work by

AUTHORS: Odelevskiy, V. I., Tonkonogov, M. P., 48-22-3-11/30
Fradkina, Z. M., Skanavi, G. I., Borgardt, A. A.

TITLE: Discussions on the Report Submitted by A. A. Borgardt
(Preniya po dokladu A. A. Borgardt)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1958
Vol. 22, Nr 3, pp. 273-275 (USSR)

ABSTRACT: V. I. Odelevskiy is of the opinion that the theory developed by Debye, which was introduced in 1935, was contested by Ansel'm already at that time. Since then the attempt has repeatedly been made to improve this insufficient theory. The lecture delivered by Borgardt was also devoted to this subject. The fundamental error of this theory with all its modifications (Ref 1,4 to 6) consists in the wrong idea formed of the influence of the so-called "molecular field" on dipole-polarization. The "inner field" and the energy U influence polarization: The higher U is, the lower is the corresponding polarization. However, the polarization of the elastic rotation of the dipoles in comparison with normal thermal orientational polarization is extremely low and forms only a fraction of a per cent of the latter. The confusion of these two kinds of polarization caused the errors committ-

Card 1/3

ODELEVSKIY, V.I.

Odelevskiy, V.I. [Leningrad, Nauchno-issledovatel'skiy institut radio-detaley (Scientific Research Institute for Radio Components, Leningrad)] Physicochemical Principles of Processing Steatite by Fusion With Calcium

(The Physics of Dielectrics; Transactions of the All-Union Conference on the Physics of Dielectrics) Moscow, Izd-vo AN SSSR, 1958. 245 p. 3,000 copies printed.

This volume publishes reports presented at the All-Union Conference on the Physics of Dielectrics, held in Dnepropetrovsk in August 1956, sponsored by the "Physics of Dielectrics" Laboratory of the Fizicheskiy institut imeni Lebedeva AN SSSR (Physics Institute imeni Lebedev of the AS USSR), and the Electrophysics Department of the Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk State University).

Synthesis of Silicoberyllates of Alkaline Metals and Barium Alumosilicate and . . . .

800 C, silicoberyllates have 1/100 the electric conductivity and 1/10 the dielectric loss of fused quartz. Conditions were discovered for obtaining a monoclinic modification of barium alumosilicate. At about 1,400° C, the monoclinic celsian has a thermodynamic equilibrium. Dielectric losses of barium alumosilicate prepared from commercial oxides are 0.03-0.04 at 1 mc and 800° C, and are 0.0005-0.001 at 500° C; its resistivity is $10^8$ ohm·cm at 800° C. Barium alumosilicate has much higher dielectric properties at high temperatures than fused quartz. With their good electric properties, silicoberyllates have certain disadvantages compared to barium alumosilicate: a higher temperature expansion factor, and expensive beryllium oxide in their composition. The author suggests that barium alumosilicate be used for internal electron-tube insulators. Bibliography: 11 items.

M.D.M.

SOV/112-58-2-1869

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1958, Nr 2, pp 11-12 (USSR)

AUTHOR: Odelevskiy, V. I., and Strel'tsyna, R. N.

TITLE: Synthesis of Silicoberyllates of Alkaline Metals and Barium Alumosilicate and Investigation of Their Electric Properties at High Temperatures (Sintez silikoberillatov shchelochnykh metallov i alyumosilikata bariya i issledovaniye ikh elektricheskikh svoyatv pri vysokikh temperaturakh)

PERIODICAL: Izv. Tomskogo politekhn. in-ta, 1956, Vol 91, pp 323-334

ABSTRACT: The aim of the investigations was to develop dielectrics capable of withstanding DC voltage as well as H-F field at temperatures of 500° to 1,000°C. New compounds were created: silicoberyllates of calcium, strontium, and barium, corresponding to an equimolecular composition of $RO \cdot BeO \cdot SiO_2$. Interplanar spacings and corresponding intensities of x-ray reflections were determined for the above new compositions. Also reported are refraction indices, densities, and temperature expansion factors of the new compositions. At

Card 1/2

Relaxation Dielectric Losses in Some Silicate Glasses

for conductance losses). A number of recipes for nonalkaline, nonboron glasses from readily available raw materials and with high electric properties have been developed on the basis of heterogeneous equilibrium diagrams. Effects of hardening and annealing on electrical properties of nonalkaline glasses have been studied. Existence of relaxation dielectric losses in some nonalkaline glasses has been proved. A change in properties of glass with time at room temperature has been discovered. Bibliography: 12 items. Also see Referativnyy Zhurnal, Elektrotekhnika, 1957, 31333.

M.D.M.

SOV/112-58-2-1862

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1958, Nr 2, p 10 (USSR)

AUTHOR: Odelevskiy, V. I., and Verebeychik, N. M.

TITLE: Relaxation Dielectric Losses in Some Silicate Glasses (Relaksatsionnyye dielektricheskiye poteri v nekotorykh silikatnykh steklakh)

PERIODICAL: Izv. Tomskogo politekhn. in-ta, 1956, Vol 91, pp 247-267

ABSTRACT: Inadequacy of the existent theories of "high-temperature" dielectric losses in alkali glasses is pointed out. A structural model is suggested of high-silica alkaline alumosilicate glass with a moving dipole formed from four energy-equivalent states of the alkaline ion. To verify the theory of constant moving dipoles, dielectric losses in glass in the range of high tg$\delta$ were investigated. Existence of sharp relaxation temperature maxima of tg$\delta$ and high values of permittivity at temperatures about 100°-150°C in sodium high-silica alumosilicate glasses is shown, which agree with the theory. Dielectric losses depending on temperature were investigated for windowpane glass at various frequencies; existence of tg$\delta$ relaxation maxima is demonstrated (with allowance

Card 1/2

exist in these glasses at temperatures of from 1PP to 150° C. Also the dependence of the tg δ of basic window glass at various frequencies on temperature, and the occurrence of relaxation maxima of tg δ in them were examined.

INSTITUTION:

ODELEVSKIY, V.I.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1269
AUTHOR WEREBEJČIK, N.M., ODELEWSKIJ, W.I.
TITLE Dielectric Losses in Glasses. III. Relaxation "High Temperature" - Dielectric Losses in Basic Glasses.
PERIODICAL Žurn. techn. fis, 26, fasc. 8, 1704-1713 (1956)
Publ. 8 / 1956 reviewed 9 / 1956

The present work has set itself the task of creating a model and the corresponding theory on a relaxation polarization by means of which it would be possible to explain the special part played by aluminium atoms in basic silicate glasses. Part II of the work provided additional material for the checking of the theory. At present the already known theories developed by SKANAWI, WEYL, GEVERS and STEVELS are being examined and their faults shown up. SKANAWI is criticized for having without reason forbidden an ion motion on the circumference and along the small tendons. According to Weyl, on the other hand, dielectric losses become considerable only within a domain of high conductivity. Therefore the activity of the relaxation of pseudodipoles can be of no practical value, and the occurrence of considerable dielectric losses within the domain of low conductivity losses cannot be explained by them. The authors examined the structural model of a basic alumosilcate glass with constant movable dipoles. They examined the dependence of dielectric losses in sodium-alumosilcate glasses within the range of high tg δ values. It was shown that, in accordance with the theory, marked temperature maxima of tg δ and high values of the dielectric constant

OBRAZTSOV, V. I. and VERKHOVSKIY, V. V.

"Relaxation Dielectric Losses in Certain Silicate Glasses," pp 127-266, Ill, 4 Ref

Abst: Although it is hard to develop a theory for high-temperature relaxation dielectric losses in silicate glasses. A number of glass compounds having high dielectric constants are brought to the attention of industrial technologists.

SOURCE: Izvestiya Tomskogo Politekhn. In-ta im. S. M. Kirova (News of the Tomsk Polytechnic Institute imeni S. M. Kirov), Volume 91, Works of the Conference on Solid Dielectrics, Tomsk, September 1955, Tomsk, Publishing House of the Polytechnical Institute, 1956

Sum 1854

ODELEVSKIY, V. I.

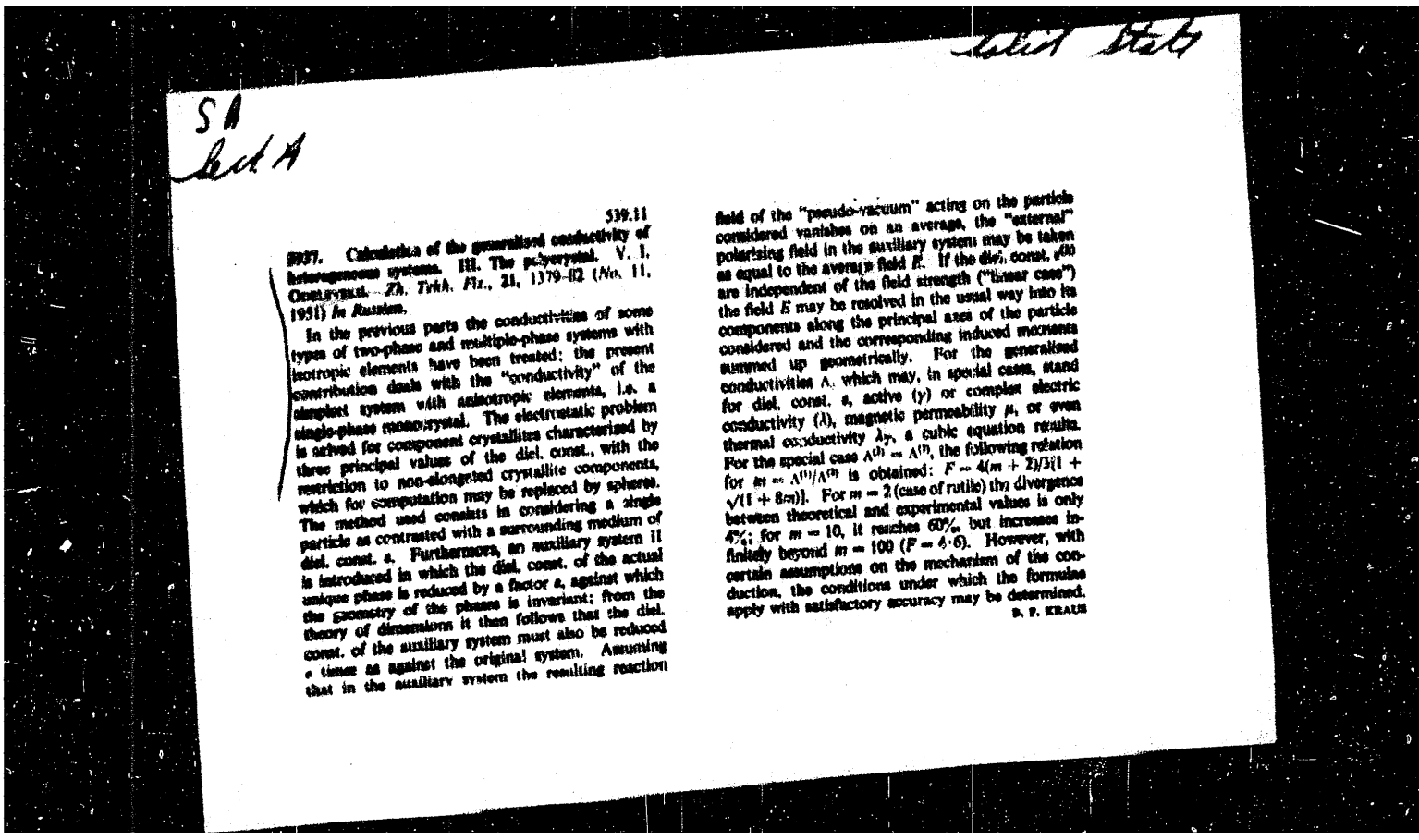
USSR/Physics - Dielectric Loss

Jan 52

"Dielectric Losses in Alkaline Alumosilicate Glasses," N. M. Verebeychik, A. E. Kamenchik, V. I. Odelevskiy. "Zhur Tekh Fiz" Vol XXII, No 1, pp 12-15

Investigates the dielec losses in high-silicic potassium-alumosilicate glasses corresponding to the general mol formula $K_2O \cdot xAl_2O_3 \cdot (17-2x)SiO_2$. Shows that the dielec losses are complex function of compn which passes through a min when the ratio of atoms of concns of oxygen and small cations, b = (O/Si + Al), equalls 2; it passes through a max when b = 2 + 0.012. Submitted 28 Mar 51.

PA 206T98



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9937. **Calculation of the generalised conductivity of heterogeneous systems. III. The polycrystal. V. I. Onsager.** — *Zh. Tekh. Fiz.*, 21, 1379–82 (*No.* 11, 1951) *In Russian.*

In the previous parts the conductivities of some types of two-phase and multiple-phase systems with isotropic elements have been treated; the present contribution deals with the "conductivity" of the simplest system with anisotropic elements, i.e. a single-phase monocrystal. The electrostatic problem is solved for component crystallites characterised by three principal values of the diel. const., with the restriction to non-elongated crystallite components, which for computation may be replaced by spheres. The method used consists in considering a single particle as contrasted with a surrounding medium of diel. const. $\epsilon$. Furthermore, an auxiliary system II is introduced in which the diel. const. of the actual unique phase is reduced by a factor $\epsilon$, against which the geometry of the phases is invariant; from the theory of dimensions it then follows that the diel. const. of the auxiliary system must also be reduced $\epsilon$ times as against the original system. Assuming that in the auxiliary system the resulting reaction field of the "pseudo-vacuum" acting on the particle considered vanishes on an average, the "external" polarising field in the auxiliary system may be taken as equal to the average field $E$. If the diel. const. $\epsilon_{00}$ are independent of the field strength ("linear case") the field $E$ may be resolved in the usual way into its components along the principal axes of the particle considered and the corresponding induced moments summed up geometrically. For the generalised conductivities $\Lambda_\gamma$ which may, in special cases, stand for diel. const. $\epsilon$, active ($\gamma$) or complex electric conductivity ($\lambda$), magnetic permeability $\mu$, or even thermal conductivity $\lambda_T$, a cubic equation results. For the special case $\Lambda^{(1)} = \Lambda^{(2)}$, the following relation for $m = \Lambda^{(1)}/\Lambda^{(2)}$ is obtained: $F = 4(m + 2)/3(1 + \sqrt{(1 + 8m)})$. For $m = 2$ (case of rutile) the divergence between theoretical and experimental values is only 4%; for $m = 10$, it reaches 60‰ but increases infinitely beyond $m = 100$ ($F = 6{\cdot}6$). However, with certain assumptions on the mechanism of the conduction, the conditions under which the formulae apply with satisfactory accuracy may be determined.

B. P. KRAUS

Theory of Solid State

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9936. Calculation of the generalized conductivity of heterogeneous systems. II. Statistical mixtures of non-elongated particles. V. I. Chechurkin. *Zh. Tekh. Fiz.*, 21, 678–85 (No. 6, 1951) *In Russian.*

Various specific properties of heterogeneous systems are related to the geometrical structure of the system in different ways; e.g. density and specific volume have to do only with densities (specific vol.) and concentrations of the phases, but such properties as dielectric constant, electric and thermal conductivities and magnetic "permeability (which may collectively be described as "generalized conductivity") also depend on phase geometry. This relation becomes more marked with increasing differences in the phase "conductivities." There are basically two different kinds of heterogeneous systems: the first, known as "matrix" type, is characterized by the fact that one of the phases forms the matrix in which disconnected particles of the others are buried, the character of the configuration remaining the same until the concentration of the matrix phase becomes zero. In such systems the phases are not equivalent geometrically and therefore a permutation of the phase indices in the analytical expression of the generalized conductivity leads to a basic variation of the theoretical value of the generalized conductivity. In the second type, the statistical mixture, the phases are geometrically equivalent, and therefore a commutation of the phase indices does not alter the character of the function representing the generalized conductivity. The investigation considers the symmetrical formulae of Mosotti–Lorentz and Lichtenecker from this point of view and then discusses and demonstrates the correct way of calculating the dielectric constant of a $n$-phase statistical mixture with non-elongated isotropic phase elements. It is done in a way similar to that discussed in the first part of the paper, viz. by introducing an auxiliary system II of the same overall phase configuration, but of a dielectric constant reduced by a factor $s$. The results are compared with experimental results obtained on pressed specimens of technical titanium dioxide and of barium titanate and show a nearly ideal agreement, whereas the curves calculated on the Lorentz and Lichtenecker formulae simply cannot be regarded as representing anything similar to the actual conditions.

B. F. KRAUS

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Theory of Solid State

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9938. **Calculation of the generalized conductivity of heterogeneous systems. I. Two-phase matrix systems with non-elongated inclusions.** V. I. ODELEVSKII. *ZA. Tekh. Fiz.*, 21, 667–77 (*No. 6*, 1951) *In Russian.*

This is essentially a methodological investigation aiming at the clarification of the character of specific problems associated with heterogeneous substances, and dealing with the selection of the appropriate mathematical methods for solving apparently similar, but actually fundamentally different problems. The programme of the investigation is as follows: definition of the metric function of a heterogeneous system; investigation of a system with orientated cubic inclusions placed at the nodes of a simple cubic lattice (low and high concentrations treated separately); matrix structure with approximately equidistant inclusions; comparison with experimental results; 2-dimensional problem. B. P. KRAUS

USSR/Physics - Polarization of Dielectrics — May 51

"Discussion of the Works of S. K. Kulkarni Jatkar and His Co-workers in the Field of the Theory of the Polarization of Dielectrics," V. I. Odelevskiy

"Zhur Eksper i Teoret Fiz" Vol XXI, No 5, pp 652-655

During 1944 - 1950 Jatkar ("Nature" 153, 222, 1944, etc.) published works devoted to the problem of polarization of liquids, normal ionic crystals, and piezoelecs. These works did not contain any new exptl data; their aim was to construct new universal theory of polarization of dielecs.

LC — 183T104

USSR/Physics - Polarization of Dielectrics (Contd) — May 51

Regrettable to say, Jatkar's works are based on incorrect phys representations and must be termed erroneous. Submitted 23 Jan 51.

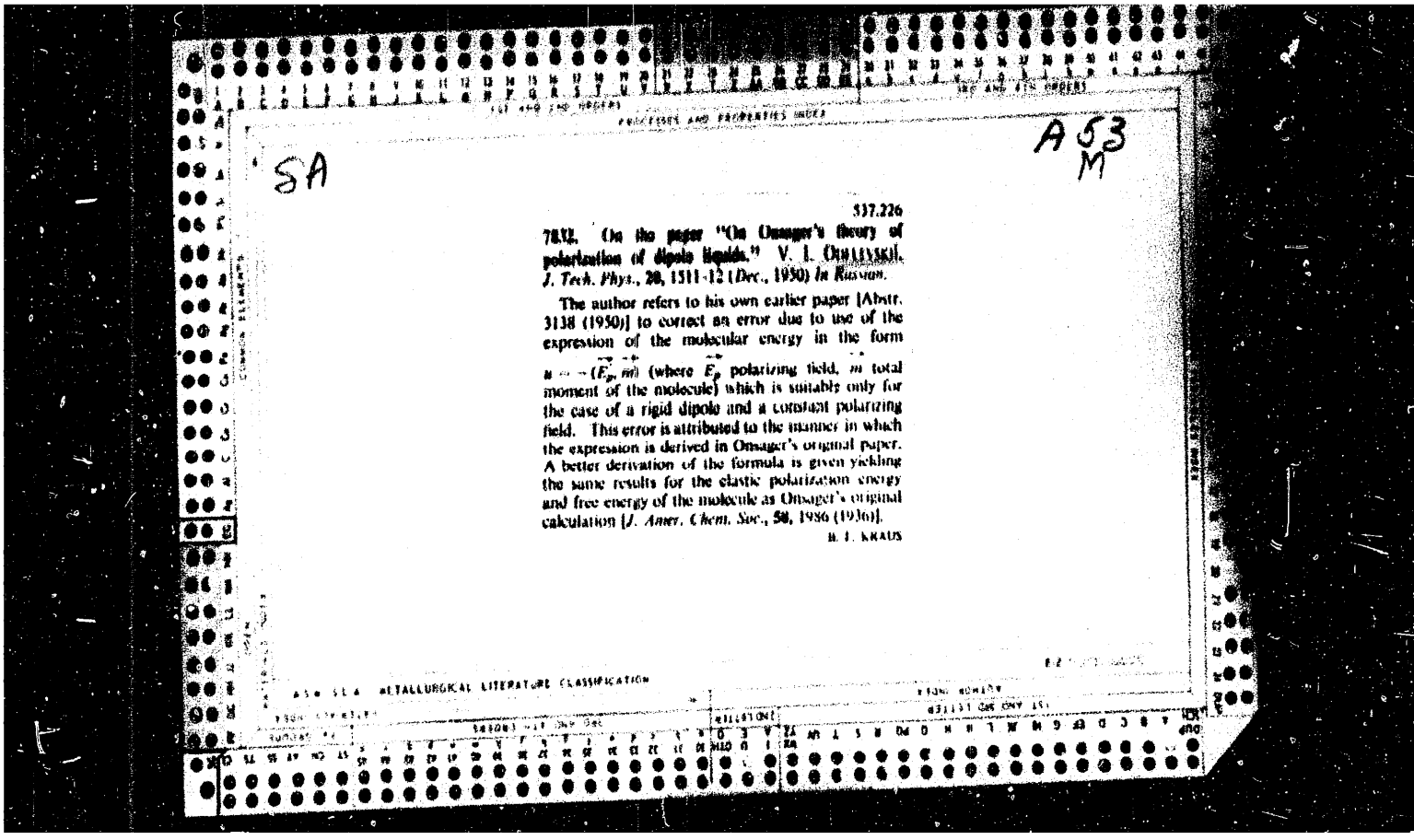
LC — 183T104

ODELEVSKIY, V. I.

ODELEVSKII, V. I.

V. I. Odelevskii. Calculation of generalized conductivity of heterogeneous systems. I. Two phase die systems with unextended inclusions. P. 667.
April 18, 1950

SO: Journal of Technical Physics, Vol. XXI, No. 6, June 1951



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78.12. On the paper "On Onsager's theory of polarization of dipole liquids." V. I. [illegible], *J. Tech. Phys.*, **20**, 1511-12 (Dec., 1950) *In Russian.*

The author refers to his own earlier paper [Abstr. 3138 (1950)] to correct an error due to use of the expression of the molecular energy in the form $u = -(\vec{E}_p \cdot \vec{m})$ (where $E_p$ polarizing field, $m$ total moment of the molecule) which is suitable only for the case of a rigid dipole and a constant polarizing field. This error is attributed to the manner in which the expression is derived in Onsager's original paper. A better derivation of the formula is given yielding the same results for the elastic polarization energy and free energy of the molecule as Onsager's original calculation [*J. Amer. Chem. Soc.*, **58**, 1486 (1936)].

R. J. KRAUS

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