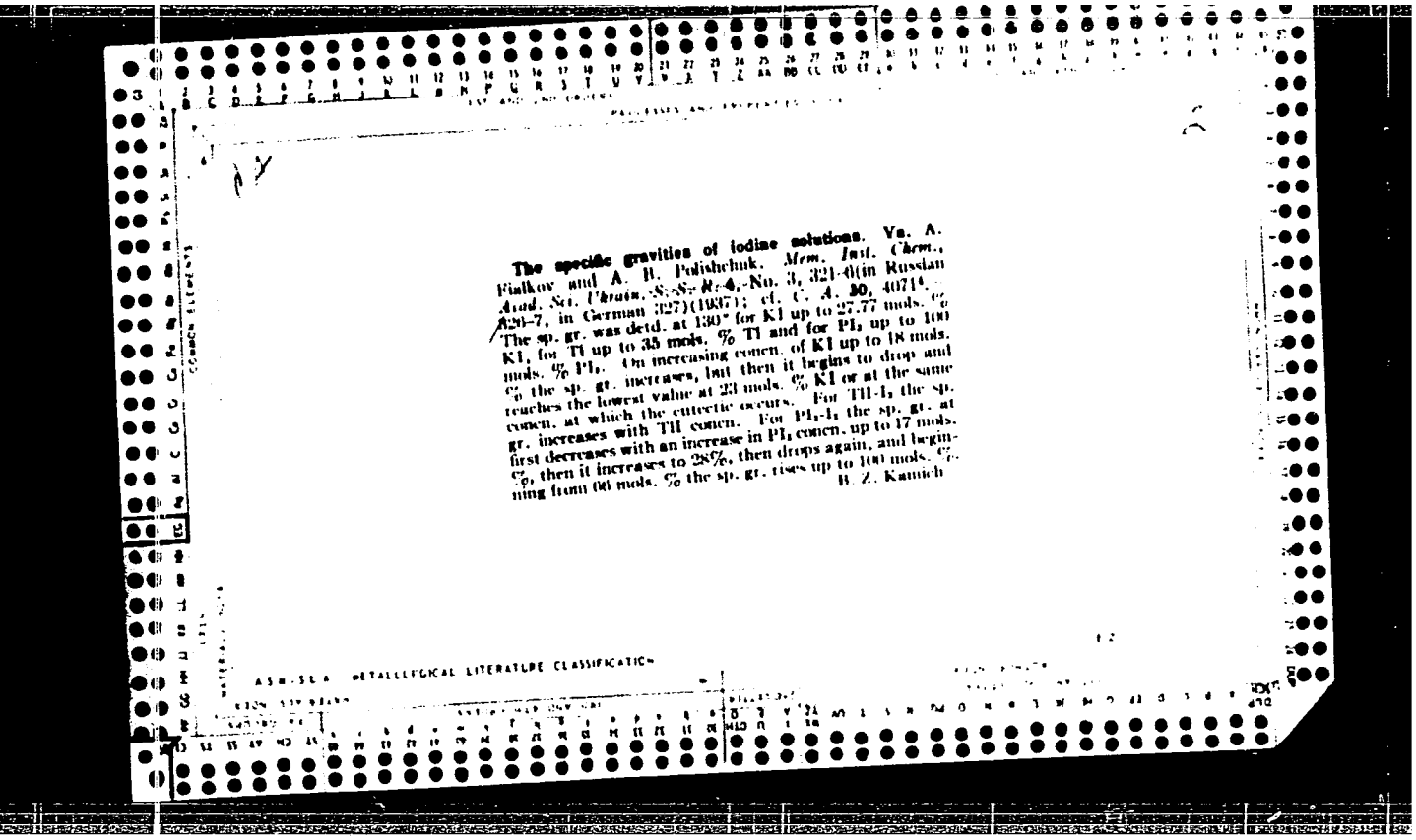


The specific gravities of iodine solutions. Va. A. Fialkov and A. B. Polishchuk. *Mem. Inst. Chem., Acad. Sci. Ukrain. S.S.R.* **4**, No. 3, 321-40 (in Russian 329–7, in German 327)(1937); cf. C. A. **30**, 4071⁴. The sp. gr. was detd. at 130° for KI up to 27.77 mols. % KI, for Tl up to 35 mols. % Tl and for PI_3 up to 100 mols. % PI_3. On increasing concn. of KI up to 18 mols. % the sp. gr. increases, but then it begins to drop and reaches the lowest value at 23 mols. % KI or at the same concn. at which the eutectic occurs. For TlI-I, the sp. gr. increases with TlI concn. For PI_3-I, the sp. gr. at first decreases with an increase in PI_3 concn. up to 17 mols. %, then it increases to 28%, then drops again, and beginning from 60 mols. % the sp. gr. rises up to 100 mols. %.

B. Z. Kamich

USSR/Mines and Mining Aug 1947
Mineral Industries

"Deep Slits for Cutting for Ores at the Works imeni Dzerzhinskiy," A. D. Polishchuk, I. P. Zabolotnyy, and V. M. Ryng, 7 pp

"Gornyy Zhurnal" No 8

Discusses new equipment for horizontal drilling of deep slits. Describes various types of deep slits cut at the workings imeni Dzerzhinskiy. Tables and diagrams.

17767

POLISHCHUK, A. D.

USSR/Mining Methods
Explosives

Feb 49

"The Development of Exploitation Systems Using Torpedo Holes for Ore Breaking in the Krivoy Rog Basin," G. M. Malakhov, A. D. Polishchuk, F. I. Volkov, 6 pp

"Gor Zhur" No 2

Deep torpedo holes for ore breaking may be used on ores with strength less than 8, where width of the vein is not less than 10 meters. The system is being used successfully in Krivoy Rog Basin.

PA 40/49T82

SHIL'MAN, A. N.; POLISHCHUK, A. D.

USSR (600)

Iron Mines and Mining

New system of caving in blocks. Gor. zhur. no. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, April 1952. UNCLASSIFIED.

POLISHCHUK, A.D.

POLISHCHUK, A.D.; SHOSTAK, A.G.

[Graduated caving at mines of the Krivoy Rog Iron Ore Basin] Etazhnoe samoobrushenie na rudnikakh Krivorozhskogo zhelezorudnogo basseina. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1953. 191 p. (MLRA 7:3)
(Mining engineering) (Ukraine--Iron mines and mining)

POLISHCHUK, A. D.

G. I. Malakhov, and A. D. Polishchuk, Peredovyye metody ochistnoy vyyemki v Krivbasse /Advanced Methods of Ore Extraction in the Krivbass/, Metallurgizdat, 7 s ezhs

The booklet describes experience of innovators of the Krivorozh iron ore field -- stakhanovite workers, engineers and technicians -- in the rationalization of existing systems, and development of new variants of the estraction systems, with the aim of increasing their efficiency, and describes advanced methods of conducting and improving mine production.

The booklet is entended for engineers and technicians of the mining industry.

SO: U-6472, 12 Nov 1954

POLISHCHUK, A. D.

A. D. Polishchuk, and A. G. Shostak, Sistema blokovogo obrucheniya na rudnikakh Krivbassa /The Block-Precipitation System in Mines of the Krivbass/, Metallurgiz at, 12 sheets.

The booklet describes the utilization of block-precipitation in the Krivoy Rog mines describes the results of scientific investigations in establishing the optimum parameters for the system, the order, the methods of undercutting blocks, and precipitation in mines.

The booklet is intended for engineers and technicians -- production workers, designers and for students of mining institutes and technical schools.

SO: U-6472, 12 Nov 19[illegible].

GULIY, V.M.; SHENDAROVICH, D.Kh., brigadir sharoshechnogo bureniya (Sokol'nyy rudnik); BEKETOV, P.Ye.; DZHEMARDZHIDZE, N.M.; MOCHALIN, M.P.; PRIGOZHIN, Ye.I., gornyy inzhener (Metallicheskiy rudnik); POLISHCHUK, A.D.

Speeches by participants in a conference. Gor.zhur. no.1:20-24 Ja '56. (MLRA 9:5)

1. Nachal'nik Proizvodstvenno-tekhnicheskogo otdela Dzhezkazganskogo rudoupravleniya (for Dzhemardzhidze); 2. Nauchnyy sotrudnik Instituta gornogo dela AN SSSR (for Mochalin); 3. Glavnyy inzhener Ukrglavrudy (for Polishchuk); 4. Glavnyy inzhener Bystrushinskogo rudnika (for Guliy); 5. Glavnyy inzhener Salairskogo rudnika (for Beketov).

(Mining engineering) (Mining machinery)

IOFIN, Stanislav Leonidovich; KULIKOV, Aleksandr Vasil'yevich; KULIKOV, Vladimir Vasil'yevich; POLISHCHUK, Afanasiy Dmitriyevich; PROKOP'YEV, Ye.P., professor, doktor tekhnicheskikh nauk, retsenzent; REVAZOV, A.A., gornyy inzhener, retsenzent; RYCHIK, F.F., kandidat tekhnicheskikh nauk, redaktor; PARTSEVSKIY, V.N., redaktor izdatel'stva; MIKHAYLOVA, V.V., tekhnicheskiy redaktor

[Forced roof caving] Prinuditel'noe etazhnoe obrushenie. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 34 p. (MLRA 10:7)
(Mining engineering)

KULIKOV, V.V., gornyy inzhener.;POLISHCHUK, A.D., gornyy inzhener.;BORISENKO, S.G., gornyy inzhener.;YARMENKO, S.G., gornyy inzhener.;SUPRUNENKO, L.V., gornyy inzhener.

"Mining systems for thick ore deposits" by V. R. Imenitov. Gor. zhur. no.2:76-78 F '57. (MLRA 10:4)
(Mining engineering)

KULIKOV, V.V., kand.tekhn.nauk; ZENDER, P.S.; POLISHCHUK, A.D., gornyy inzh.

Hoisting and conveyer belt ore haulage (from foreign journals). Gor.zhur. no.3:71-72 Mr '58. (MIRA 11:3)

1.Dnepropetrovskiy gornyy institut (for Zender). 2. Gosplan USSR (for Polishchuk).
(Mine haulage) (Conveying machinery)

BORISENKO, Sergey Grigor'yevich; KOPITSA, Fedor Andreyevich. Prinimali uchastiye: KULIKOV, V.V.; YAREMENKO, D.N., BUHIN, A.I., inzh., retsenzent; POLISHCHUK, A.D., kand.tekhn.nauk, retsenzent; YERMOLENKO, M.I., otv.red.; SIPYAGINA, Z.A., red.izd-va; SABITOV, A., tekhn.red.

[Chamber and pillar system of ore mining] Kamernaia sistema razrabotki v gornorudnoi promyshlennosti. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 399 p. (MIRA 13:5)
(Mining engineering)

POLISHCHUK, A.D., doktor sel'skokhozyaystvennykh nauk, prof.

Effect of various nutrients on speeding up the fruiting of apples on Doucin rootstock. Nauch. trudy UASHN 10:131-137 (MIRA 14:3)

(Apple)

POLISHCHUK,A.D., professor

Effect of manganese and boron on the growth of grape seedlings.
Vin.SSSR 15 no.3:35-36 '55. (MLRA 8:8)

1. Kiyevskiy sel'skokhozyaystvennyy institut.
(Grapes) (Plants, Effect of boron on) (Plants, Effect of manganese on)

POLISHCHUK, M. G.

USSR/Chemical Technology. Chemical Products and Their Application -- Fermentation industry, I-27

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 6470

Author: Chernyavskiy, A. I., Cherevko, N. G., Polishchuk, A. G.

Institution: L'vov Polytechnic Institute

Title: Steeping of Grain by Irrigation

Original Publication: Nauch. zap. L'vovsk. politekhn. in-ta, 1956, No 22, 135-139

Abstract: Laboratory investigations have shown that on steeping of grain by the irrigation method, with intervals of up to 2 hours, steeping of the grain and its sprouting are accelerated considerably in comparison with the generally utilized method of air-water steeping (4 hours under water and 2 hours without water), while retaining the same qualitative indices of the resulting malt. A project has been worked out of an industrial unit for continuous steeping of grain by the irrigation method, which consists of a washing apparatus (of the potato washing type) and a steeping chamber which comprises a vertical shaft

Card 1/2

USSR/Chemical Technology. Chemical Products and Their Application -- Fermentation industry, I-27

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 6470

Abstract: inside of which are set, in horizontal position, several rows of screens disposed in a roof-like manner, checkerboard fashion in the vertical direction. There is given a diagram of the unit as well as its principal dimensions and a description of its operation. It is assumed that the proposed unit will make it possible to reduce the duration of malt production, decrease expenditure of water for steeping, eliminate the need of compressed air and decrease the over-all dimensions of the steeping department building.

Card 2/2

POLISHCHUK, A.G.; SHARONOV, M.N.; SKLYAR, V.T.

Using bentonites from the Gorbki deposit for clarifying wines.
Bent. gliny Ukr. no.1:86-93 '55. (MIRA 12:12)

1.L'vovskiy politekhnicheskiy institut.
(Transcarpathia--Bentonite) (Liquids--Clarification)

POLISHCHUK, A.G.; OSHCHAPOVSKIY, V.V.

Determining the acidity of diluted molasses. Spirt.prom.22 no.1:18 '56. (MLRA 9:7)

1.L'vovskiy politekhnicheskiy institut.
(Molasses)

KOLENCHENKO, V.A.; POLISHCHUK, A.G.

Washing fusel oil. Spirt. prom. 24 no.3:34 '58. (MIRA 11:6)
(Fusel oil)

POLISHCHUK, A. G.

Utilizing the wash liquor in the production of molasses sirups. Izv.vys.ucheb.zav.; pishch.tekh. no.3:81-85 '59.
(MIRA 12:12)

1. L'vovskaya Vysshaya partiynaya shkola.
(Molasses)

POLISHCHUK, A.G.

Fermenting molasses with the addition of fusel liquor.
Izv.vys.ucheb.zav.; pishch.tekh. no.4:86-91 '59.
(MIRA 13:2)

1. L'vovskaya Vysshaya partiynaya shkola.
(Distillation) (Molasses)

POLISHCHUK, A.K., inzh.; GUREVICH, Yu.L., inzh.

Experience in manufacturing reinforced concrete components by production-line techniques. Bet. i zhel.-bet. no.8:314-317 Ag '57. (MIRA 10:10)

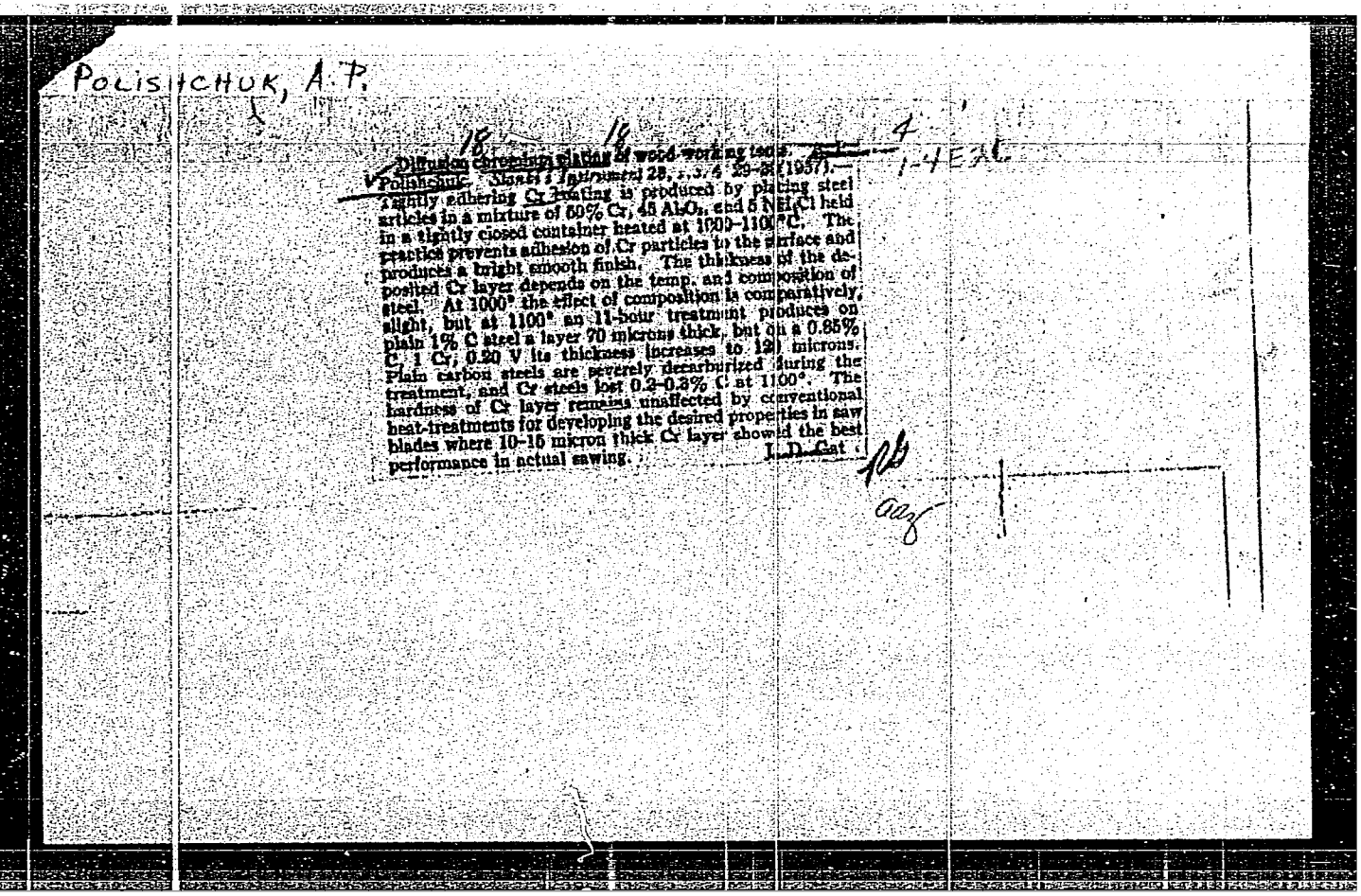
(Moscow--Concrete plants)

Polishchuk, A.P.

KUOSMAN, Vil'yam Vil'yamovich; POLISHCHUK, Anatoliy Pavlovich; GILEV, N.Kh., red.; PITERMAN, Ye.L., red. izd-va; SHITS, V.P., tekhn. red.

[Universal chain saws] Universal'nye pil'nye tsepi. Moskva, Goslesbumizdat, 1957. 42 p. (MIRA 11:7)

(Chain saws)



POLISHCHUK, A. P.

18 16 4

1-4 EAL

Diffusion chromium plating of wood-working tools. —
Polishchuk. Standartizatsiya 23, No. 3, 29-31 (1957).—
A tightly adhering Cr coating is produced by plating steel articles in a mixture of 60% Cr, 35 Al_2O_3, and 5 NH_4Cl held in a tightly closed container heated at 1000–1100° C. The process prevents adhesion of Cr particles to the surface and produces a bright, smooth finish. The thickness of the deposited Cr layer depends on the temp. and composition of steel. At 1000° the effect of composition is comparatively slight, but at 1100° an 11-hour treatment produces on plain 1% C steel a layer 70 microns thick, but on a 0.85% C, 1 Cr, 0.20 V its thickness increases to 120 microns. Plain carbon steels are severely decarburized during the treatment, and Cr steels lost 0.2–0.3% C at 1100°. The hardness of Cr layer remains unaffected by conventional heat-treatments for developing the desired properties in saw blades where 10–15 micron thick Cr layer showed the best performance in actual sawing. I. N. Gat

POLISHCHUK, A.P.

KUOSMAN, V.V.; POLISHCHUK, A.P.

TsNIIMR-K6 electric saw. Les.prom. 35 no.4:13-14 Ap '57.
(MLRA 10:5)

1. TSentral'nyy nauchno-issledovatel'skiy institut mekhanizatsii i energetiki.
(Saws)

POLISHCHUK, A. P.: Master Tech Sci (diss) -- "Investigation of the dulling of cutting parts of chain saws and methods of increasing their wear resistance". Moscow, 1958. 22 pp (Min Higher Educ USSR, Moscow Forestry Engineering Inst), 125 copies (KL, No 6, 1959, 135)

YELISEYEV, Anisim Vasil'yevich; POLISHCHUK, A.P., red.; SVETLAYEVA, A.S., red.izd-va; PROKOF'YEVA, L.N., tekhn.red.

[Sharpening saws at saw maintenance points; manual for working circles and groups] Zatochka lesorubochnogo instrumenta na pilopravnykh punktakh; posobie dlia leskhozov i lesnichestv. Moskva, Goslesbumizdat, 1958. 25 p. (MIRA 12:2)
(Saw filing)

KUOSMAN, Vil'yam Vil'yamovich, POLISHCHUK, Anatoliy Pavlovich, NADBAKH, M.P., red.; NIKOLAYEVA, I.I., red.; SHITS, V.P., tekhn.red.

[TsNIIMR-K6 electric chain saw] Elektromotonaia pila TsNIIMR-K6. Moskva, Goslesbumizdat, 1958. 53 p. (MIRA 11:8)
(Chain saws)

SOV/129-59-4-13/17

AUTHORS: Engineers Vasil'yev, M.M., and Polishchuk, A.P.

TITLE: Increasing the Hardness of Timber-Cutting Tools by High Frequency Hardening (Uprochneniye rezhushchego lesozagotovitel'nogo instrumenta zakalkoy T.V.Ch.)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov, 1959, Nr 4, pp 55-57 (USSR)

ABSTRACT: Saw chains are series manufactured in three variants depending on the applications. Production of wear resistant and strong saw chains was solved by TsNIIME by producing cutting bits of a high hardness of 60-62R_c; through-hardening with high frequency current was applied. In the case of the saw chain PTs-15M the cutting elements were subjected to hardening. The high frequency hardening of the cutting elements penetrated to depths up to 3 mm; the sketch (Fig 1) gives a full picture of the depths of the hardened and the transient (thermally affected) zones, both of which are located above the bending point of the cutting elements thus ensuring the necessary high strength in the dangerous cross section itself. The current is fed from a 72 kW, 130-200x10^3 kc/sec oscillator. The heating was effected by means of a loop inductor made of copper tubing and cooled internally with water. The heating

Card 1/3

Increasing the Hardness of Timber-Cutting Tools by High Frequency Hardening

temperature is monitored by means of a photo-electric pyrometer. Individual elements were heated singly for durations slightly over one second and, following that, they were dropped into an oil containing tank. After hardening the individual elements were tempered in an oil bath for 2 hours at 170°C. The high frequency heating was effected in accordance with two regimes with heating temperatures of 900 - 960°C and heating speeds of 130 - 150°C/sec. respectively. The temperature curve for heating according to the first-mentioned regime is graphed in Fig 2. On the basis of the obtained result it is concluded that high frequency hardening ensures in the given case a 2-3 fold increase in the wear resistance. For one of the types of saw chains discussed (PTs-15M) the author recommends high frequency hardening only for the cutting elements themselves, which should be carried out by means of specially built automatic hardening machines. The high frequency hardening increases the manufacturing cost of the product by 10 to 15% but this

Increasing the Hardness of Timber-Cutting Tools by High Frequency Hardening

is out-weighed by the fact that the life of the manufactured tools is doubled.

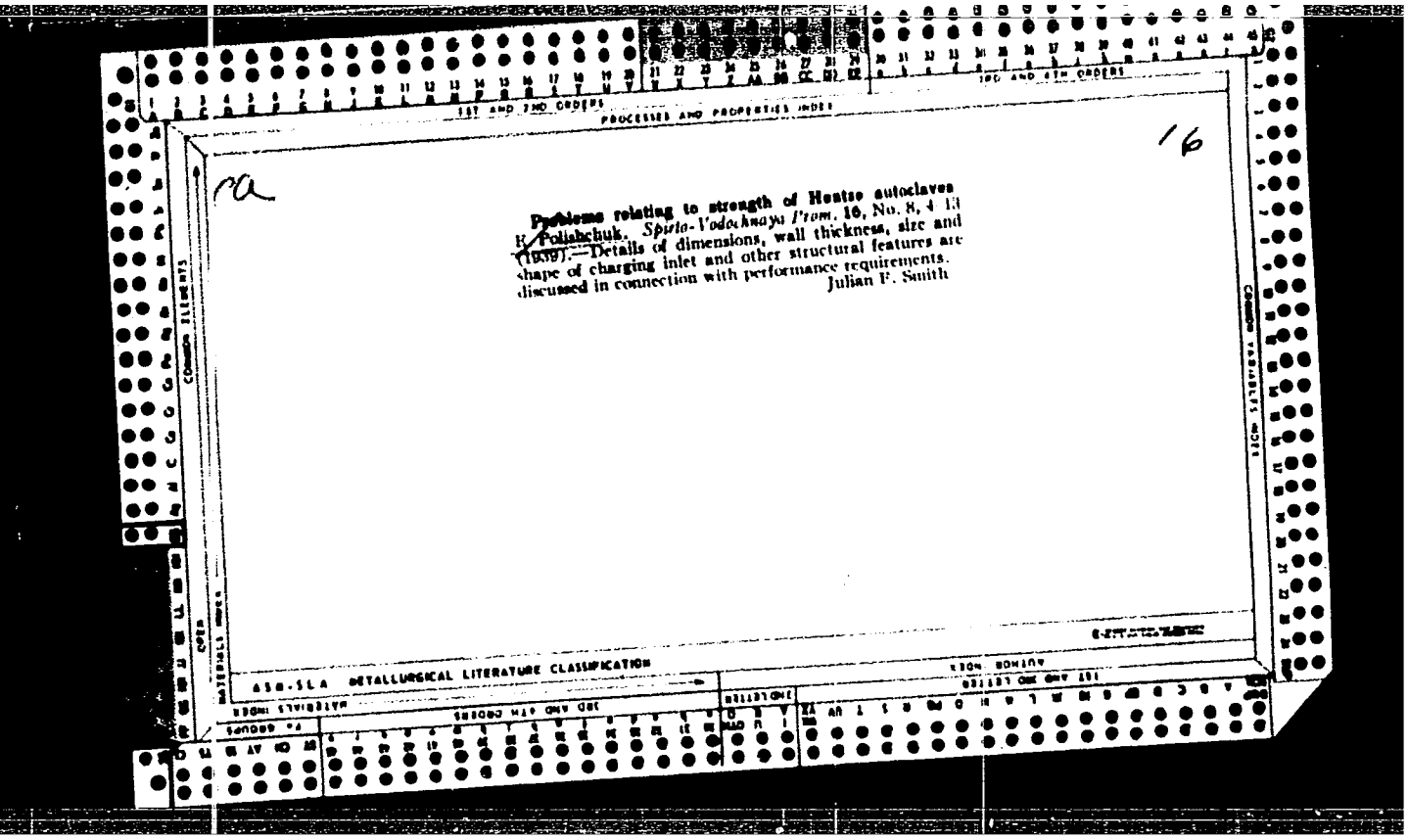
There are 2 figures and 1 table.

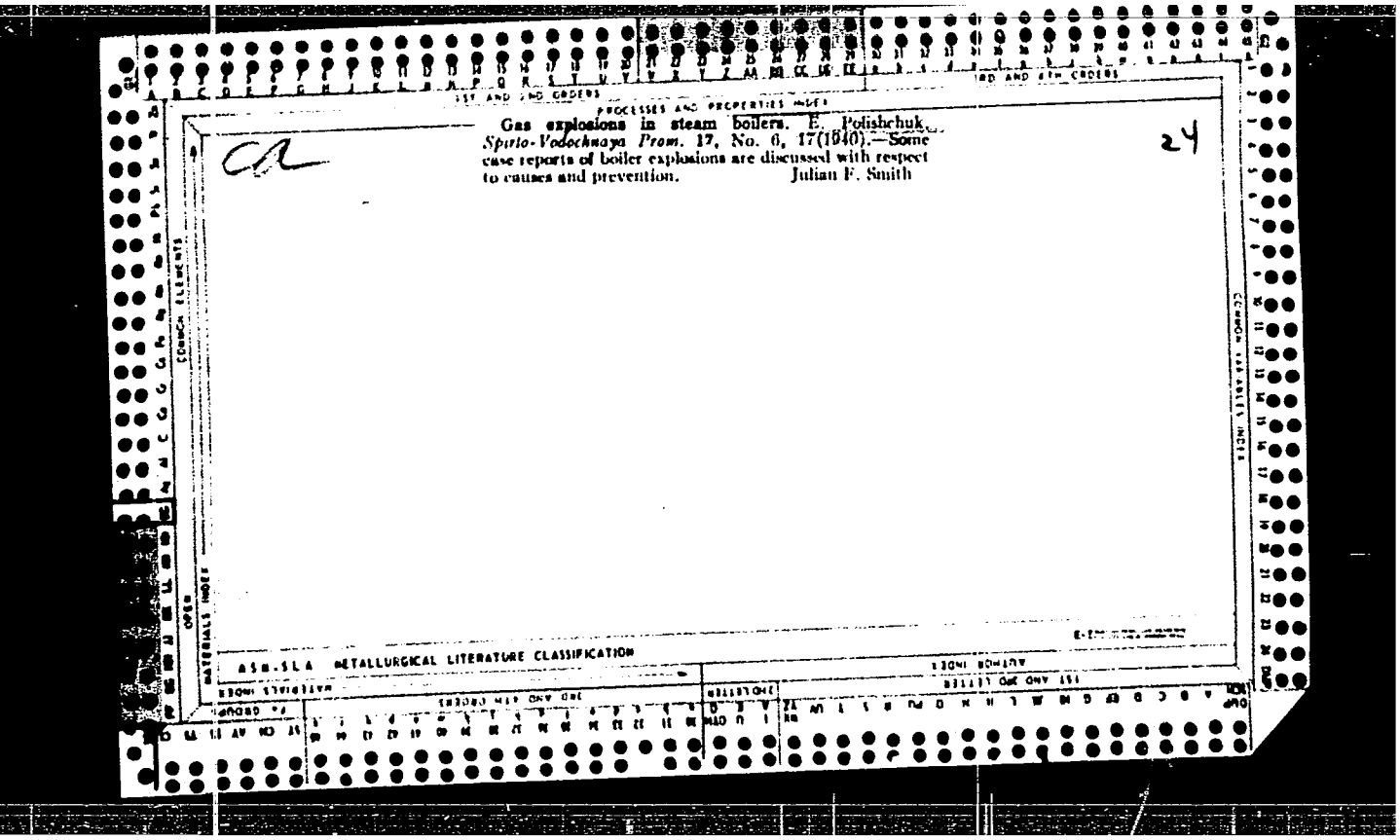
ASSOCIATIONS: VNII and TsNIIME

Card 3/3

POLISHCHUK, Anatoliy Pavlovich, kand. polit. nauk; SHCHEPOT'YEV, Oleg Aleksandrovich; GILEV, Nikolay Konstantinovich; DREKHSLER, M.M., red.; PROTANSKAYA, I.V., red. izd-va; PARAKHINA, N.L., tekhn. red.

[Saws and cutting tools in lumbering] Instrumental'no-pilopravnoe delo na lesorazrabotkakh. Moskva, Goslesbumizdat, 1961. 231 p. (MIRA 15:6)
(Lumbering—Equipment and supplies)





PROCESSES AND PROPERTIES INDEX

CA

24

Gas explosions in steam boilers. E. Polishchuk. *Spirto-Vodochnaya Prom.* 17, No. 6, 17(1940).—Some case reports of boiler explosions are discussed with respect to causes and prevention. Julian F. Smith

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MARKOV, B.F.; POLISHCHUK, A.F.

Conductance of salts in the region of crystal - melt phase transition. Halides of some bivalent metals. Ukr. khim. zhur. 31 no.10:1065-1071 '65. (MIRA 19:1)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.
Submitted February 22, 1965.

MARKOV, B.F.; POLISHCHUK, A.F.

Conductance of salts in the region of crystal - melt phase transition. Effect of impurities. Ukr. khim. zhur. 31 no. 11: 1133-1136 '65 (MIRA 19:1)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

MARKOV, B.F.; PRISYAZHNYY, V.D.; POLISHCHUK, A.F.

Measurement of molar volume of salt in melting, a new variation of the pycnometric method. Ukr. khim. zhur. 31 no.4:418-420 '65. (MIRA 18:5)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

MARKOV, B.F.; POLISHCHUK, A.F.

Change of conductance during the phase transition in the system salt crystal - fused alkali metal nitrates and nitrites. Ukr. khim.zhur. 31 no.2:182-185 '65. (MIRA 18:4)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

POLISHCHUK, A.G. [Polishchuk, A.H.]

Use of fusel liquor from the oil washer for defoaming. Khar. prom. no.1:46-48 Ja-Mr '62. (MIRA 15:3)
(Distillation)

ACC NR: AP7011845

sintered in a hydrogen medium at 1280±10°C for three hours. After thermomagnetic treatment in a magnetic field of 250 ka/m intensity, the magnets were ready for use. The properties were equivalent to those of metalloceramic magnets made by ordinary methods. This process allows a considerable reduction in the cost of metalloceramic magnets. Orig. art. has: 2 figures and 3 tables.

[JPRS: 40,450]

Card 2/2

ARSENT'YEV, A.I., dokter tekhn.nauk; POLISHCHUK, A.K., kand.tekhn.nauk

Interaction between open and underground operations in the combined mining of deposits. Izv.vys.ucheb.zav.; gor.zhur. 8 no.11:36-46 '65. (MIRA 19:1)

1. Krivorozhskiy gornorudnyy institut. Rekomendovana kafedroy razrabotki mestorozhdeniya poleznykh iskopayemykh. Submitted July 21, 1964.

POLISHCHUK, A.K.

Methods of establishing parameters for strip mining operations.
Trudy Inst. gor. dela AN Kazakh.SSR 12:178-182 '63.
(MIRA 17:8)

BEZUKH, V.R., inzh.; POLISHCHUK, A.K., inzh.

Distribution of ore losses in stoped-out areas. Met. i gornorud. prom. no.5:46-48 S-O '63. (MIRA 16:11)

1. Krivorozhskiy gornorudnyy institut.

U

ALEKSEYEV, F.K.; ANDRIYUTS, G.L.; ARSENT'YEV, A.I.; ASTAF'YEV, Yu.P.; BEVZ, N.D.; BEREZOVSKIY, A.I.; GENERALOV, G.S.; DOROSHENKO, V.I.; YESHCHENKO, A.A.; ZAPARA, S.A.; KALINICHENKO, V.F.; KARNAUSHENKO, I.K.; KIKOVKA, Ye.I.; KOBOZEV, V.N.; KUPIN, V.Ye.; LOTOUS, V.K.; LYAKHOV, N.I.; MALYUTA, D.I.; METS, Yu.S.; OVODENKO, B.K.; OKSANICH, I.F.; PANOV, V.A.; POVZNER, Z.B.; PODORVANOV, A.Z.; POLISHCHUK, A.K.; POLYAKOV, V.G.; POTAPOV, A.I.; SAVITSKIY, I.I.; SERBIN, V.I.; SERGEYEV, N.N.; SOVETOV, G.A.; STATKEVICH, A.A.; TERESHCHENKO, A.A.; TITOV, D.S.; FEDIN, A.F.; KHOMYAKOV, N.P.; SHEYKO, V.G.; SHEKUN, O.G.; SESTAKOV, M.M.; SHTAN'KO, V.I.

Practice of construction and exploitation of open pits of Krivoy Rog Basin mining and ore dressing combines. Gor. zhur. no.6: 8-56 Je '63. (MIRA 16:7)

(Krivoy Rog Basin--Strip mining)

ARSENT'YEV, A.I., dotsent; POLISHCHUK, A.K., inzh.; ADIGAMOV, Ya.K., inzh.

Effect of indices of losses and depletion during development mining deposits at the end boundaries of a strip mine. Izv.vys. ucheb. zav.; gor. zhur. 7 no.3:9-14 '64 (MIRA 17:8)

1. Krivorozhskiy gornorudnyy institut (for Arsent'yev, Polishchuk). 2. Vsesoyuznyy nauchno-issledovatel'skiy gornometallurgicheskiy institut tsvetnykh metallov (for Adigamov). Rekomendovano kafedroy razrabotki mestorozhdeniy poleznykh iskopayemykh Krivorozhskogo gornorudnogo instituta.

ARSENT'YEV, A.I., dotsent; POLISHCHUK, A.K., inzh.

Determining the limits of a strip mine for the selective mining of several types of ore. Izv.vys.uchev.zav.;gor.zhur. 7 no. 4:38-42 '64. (MIRA 17:7)

1. Krivorozhskiy gornorudnyy institut. Rekomendovana kafedroy razrabotki mestorozhdeniy poleznykh iskopayemykh.

NIKONENKO, O.F., gornyy inzh.; ANDRIYUTS, O.L., gornyy inzh.;
POLISHCHUK, A.K., gornyy inzh.; VOLYNETS, M.A., gornyy inzh.

Operation of the SDG-1 bit-dressing machine. Sbor. nauch. trud. KGRI no.15:82-86 '63. (MIRA 17:8)

ADIGAMOV, Ya.M., gornyy inzh.; POLISHCHUK, [illegible], gornyy inzh.

Determining the overburden ratio limit and strip mine boundaries. Gor. zhur. no.8:17-22 Ag '64.

(MIRA 17:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsvetnoy metallurgii, Ust'-Kamenogorsk (for Adigamov). 2. Krivorozhskiy gornorudnyy institut (for Polishchuk).

POLISHCHUK, A.M.

Effect of natural pyrimidines on the growth of Ehrlich's tumor in mice and lymphosarcoma in rats. Vop. onk. 11 no.3: 59-61 '65. (MIRA 18:6)

1. Iz laboratorii eksperimental'noy onkologii (zav. - zasluzhennyy deyatel' nauki prof. N.V. Lazarev) Instituta onkologii AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof. A.I. Serebrov).

POLISHCHUK, Al'bert Mikhaylovich; KRYLOV, N.A., red.

[Using mechanical vibrations to improve the quality of building materials and products] Ispol'zovanie mekhanicheskikh kolebanii dlia povysheniia kachestva stroitel'nykh materialov i izdelii. Leningrad, 1964. 17 p. (MIRA 17:9)

POLESHCHUK, A.M., inzh.; SOLOGUB, D.M. [Solohub, D.M.]

Thinning machine for sugar beet fields. Mekh. sil'. hosp. 13 no.4:11-12 Ap '62. (MIRA 17:3)

MASLENNIKOV, B.A.; POLISHCHUK, A.N.

Hydrocyclone with an auxiliary magnetic field. Gor. zhur. no.3: 70 Mr '63. (MIRA 16:4)

POLISHCHUK, A.P., dotsent

Analysis of safety conditions in Krivoy Rog Basin mine stopes.
Sbor. nauch. trud. KGRI no.7:187-194 '59. (MIRA 16:9)
(Krivoy Rog Basin--Mine safety)

ALYAB'YEV, V.I., kand. tekhn. nauk; VINOGOROV, G.K., kand. tekhn. nauk; POLISHCHUK, A.P., kand. tekhn. nauk; Prinimal uchastiye KRAL'KIN, A.S., inzh.; DOLBILIN, I.P., inzh., retsenzent; YERMOLIN, I.P., inzh., otv. red.; KOZLOV, A.D., red.izd-va; GRECHISHCHEVA, V.G., tekhn. red.

[Lumbering camps; mechanization of logging operations. A handbook] Lesozagotovki; mekhanizatsiia lesosechnykh rabot. Spravochnik. Moskva, Goslesbumizdat, 1962. 450 p. (MIRA 16:6)

(Lumbering)

BIBIK, A.I.; GORELIK, V.I.; KOROKHOV, V.G.; POLISHCHUK, A.V.

Efficient procedure for manufacturing rolls of reduction rolling mills. Met. i gornorud. prom. no.3:67 My-Je '64. (MIRA 17:10)

Polishchuk, D.I.

D-3

USSR/Statistical Physics - Thermodynamics

Abs Jour : Referat Zhur - Fizika No 5, 1957, 11415

Author : Fedoseyev, V.A., Polishchuk, D.I.

Inst :

Title : Evaporation of Drops of Combustible Liquids.

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 7, 1509-1518

Abstract : An investigation was made of the evaporation of drops of benzol, toluol, ethyl alcohol, and xylol (the dimensions ranged from 1.52 to 0.81 mm), with changing temperature, speed of air flow, and concentration of vapors of the corresponding liquid in the air. The investigation has shown that from the qualitative point of view the evaporation of drops of these liquids does not differ from the evaporation of drops of water. The kinetic law ds/dt=const holds under all the investigated evaporation conditions. The temperature of the drop increases somewhat as the evaporation proceeds and as the vapor content of a given liquid

Card 1/2

Polishchuk D.I.

KIRILOV, Ye.A. [Kyrylov, IE.A.]; POLISHCHUK, D.I.; S'ORA, T.Ya. [S'ora, T.IA.]

Physics at Odessa University. Ukr.fiz.zhur. 3 no.1:3-9 Ja-F '58. (MIRA 11:4)

1.Odes'kiy derzhavniy universitet.
(Physics)

SOV/81-60-1-470

Translation from: Referativnyy zhurnal. Khimiya, 1960, Nr 1, p 63 (USSR)

AUTHORS: Fedoseyev, V.O., Polishchuk, D.I., Selivanov, Ye.D.

TITLE: The Evaporation of a Liquid Drop During Its Burning"

PERIODICAL: Tr. Odessk. un-ta. Ser. fiz. n., 1958, Vol 148, Nr 6, pp 43 - 48 (Ukrainian)

ABSTRACT: It has been established by the method of motion picture photography that during burning of drops of individual organic fuel substances, as well as during burning of drops of mixed (multi-component) fuel substances, the surface of the drops decreases linearly with time. In the case of blowing air around a drop of burning multi-component liquid and artificial removal of the flame from its surface it was possible to obtain deviations from the linear dependence, under these conditions a gradual lowering of the rate of the drop surface decrease was observed. The phenomenon described is explained by the fractional evaporation of the components of the fuel mixture.

Card 1/1

B. Kaplan

31299
S/124/61/000/010/034/056
D251/D301

11.735

AUTHOR: Polishchuk, D.I.

TITLE: Evaporation and combustion of drops of certain organic liquids

PERIODICAL: Referativnyy zhurnal. Mekhanika, no. 10, 1961, 85, abstract 10 B607 (Pratsi Odes'k. un-tu, Ser. fiz. n., Tr. Odessk. un-ta, Ser. fiz. n., 1960, 150, no. 7, 33-37)

TEXT: The evaporation or combustion of drops of various fluids suspended on a thermocouple is investigated under a microscope with the aid of cine- or photo-apparatus. In the evaporation of individual readily volatile liquids, the temperature of the drops is slightly increased (by 2-3°) beyond the calculation of the supply of heat by the suspension. The dependence of the square of the diameter on time remains linear as in the case of water. The dependence of the speed of evaporation on the concentration of the vapor

Card 1/2

31299
S/124/61/000/010/034/056
D251/D301

Evaporation and combustion...

of the liquid in the air is also close to linear. For slow evaporation of a multifractional liquid (benzene etc) the temperature of the drop increases with the passage of time, to beyond the calculation of the distillation of light fractions. For high speeds of evaporation (high air temperature) the liquid does not have time to become perturbed in the volume of the drop, it burns "by layers" without fractional distillation and as a result, the temperature remains constant and the dependence of the square of the diameter on the temperature remains constant. A similar dependence relationship is obtained for the evaporation of a drop of burning fuel if the flame encompasses the entire drop. If the flame is blown away from the drop, then the linearity between the square of the diameter and the time breaks down. [Abstracter's note: Complete translation]

Card 2/2

31298
S/124/61/000/010/033/056
D251/D301

11,7350

AUTHORS: Latonina, L.P., Fedoseyev, V.A. and Polishchuk, D.I.

TITLE: Experimental investigation of the combustion of drops of certain fuels in a current of hot air

PERIODICAL: Referativnyy zhurnal. Mekhanika, no. 10, 1961, 85, abstract 10 B606 (Pratsi Odes'k un-tu, Ser. fiz. n., Tr. Odessk. un-ta, Ser. fiz. n., 1960, 150, no. 7, 85-96)

TEXT: The combustion of drops of benzene, kerosene, liquid T-P (T-R) and iso-octane of dimensions 1 - 2.5 mm is investigated by two methods: The kino-surveying of an enlarged drop, burning on a thin platinum support, and by creating "stationary drops". For the latter, a small porous ceramic sphere is used, onto which the necessary amount of fuel is continuously applied by means of a syringe. In both cases particular attention is paid to the instant when the flame separates from the frontal point of the drop. The

Card 1/2

Experimental investigation...

results obtained by both methods coincide. At a definite velocity of the air, the flame separates from the drop. For a further increase in velocity it moves away still further becoming smaller all the time, although without vanishing completely. The velocity at which the flame separates from the drop increases with the increase in diameter of the drop and temperature, and depends on the type of fuel. [Abstracter's note: Complete translation]

X

Card 2/2

S/124/62/000/005/026/048
D251/D308

AUTHORS: Fedoseyev, V.A., Polishchuk, D.I., and Latonina, L.P.

TITLE: The effect of the ignition conditions on the kinetic combustion of a drop of fuel

PERIODICAL: Referativnyy zhurnal. Mekhanika, no. 5, 1962, 101, abstract 5B653 (Nauchn. Yezhegodnik, Odessk. un-t, Fiz. matem. fak. i. N. -i. in-t Fiz. no. 2, Odessa, 1961, 191 - 195)

TEXT: It was shown experimentally that the velocity of combustion of a drop with a current of air blowing round it depends on the means of ignition and the position of the flame front with respect to the drop. The ignition was studied with the aid of a burner and of an electric spark both with the drop completely enveloped by the flame and with it half-enveloped. In both cases the velocity of combustion was greater with ignition from the burner. 4 references. [Abstractor's note: Complete translation].

Card 1/1

S/185/61/006/002/020/020
D210/D304

AUTHOR: Polishchuk, D.I.

TITLE: Second conference of higher educational institutions on problems of gas dynamics, evaporation and combustion of dispersive systems

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 2, 1961, 285 - 287

TEXT: The conference was held at Mechnikov state university of Odessa from 3 to 7 October (1960). 130 delegates from 45 scientific institutions were present. There were 29 lectures on phenomena in combustion chambers and 16 on aerosols. G.A. Varshavskyy and L.H. Pishchans'ka: "Investigation of the kinetics of combustion of drops of some fuels". G.A. Varshavskyy: "The solution of equations of mass and heat exchange, taking into account the dependence of the coefficient of heat conductivity on the composition of the fuel". It was shown that the velocity of evaporation depends chief-

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Second conference of higher ...

also on the dimensions of the drops). B.S. Brounshteyn and O.M. Todes: "The turbulent flows around solid spherical particles up to Re = 10^5" (equations for pulsation velocities of particles and flow for heat and mass exchange). B.V. Deryagin, S.P. Bakanov, and Yu.S. Kurgin: "The results of investigations of the kinetics of evaporation of liquid drops covered by non-soluble films of extraneous substance". Formulae were obtained for the velocity of quasi-stationary evaporation of such drops, for non-stationary evaporation, for evaporation from a flat surface covered by a layer of a different substance. M.V. Byukov: "Two lectures on the theory of isothermal distillation in a mixture of polydispersive aerosols." A.A. Shcherbakov: "The investigation of evaporation of drops moving under conditions of variable vapor concentration in the surrounding medium, and variable temperature". H.A. Martynov, and S.P. Bakanov: "The coagulation of aerosols" (an equation describing the variation of total number of particles). V.O. Fedoseyev: "Basic results of the investigation of coagulation growth of drops solutions of hygroscopic substances in a flow of aerosol" (carried out together

Card 3/4

with other members of staff of the laboratory of aero-dispersive system of Odessa University). B.V.Deryagin, P.S. Prokhorov, L.F. Leonov and M.V. Velychko, developed a new method for investigating condensing processes in a diffusion chamber, consisting of making use of periodical changes of heat regime of the moistened walls of the chamber containing the gas-vapor mixture. L.V. Radushkevich and V.A. Kolganov: "Properties of aerosols formed at high temperatures from metallic tungsten in gases". Ye.I. Siryy: "The application of radioactive radiations for monodispersation of condensational aerosols". H.M. Martynkevych: "The problem of determining evaporation heat of diatomic and more complex structures". N.Ya. Vlasenko: "The further improvement of the counter of aerosol particles and the use of the method of flow ultramicroscopy for investigating aerosols with liquid dispersive phase". V.O. Fedoseyev told of results of investigations on the use of aerosols against agricultural pests and for the protection of plants against frost.

L 32035-65 EPA/EWT(m)/EPA(s)-2/EPF(c)/T/EWP(j)/EPA(w)-2/EPR Pc-4/Pab-10/Pr-4/
ACCESSION NR: AT5006323 Ps-4/Pt-10 RWH/ S/3142/62/152/008/0018/0024
WW/JW/RM

AUTHOR: Fedoseyev, V. A.; Polishchuk, D. I. 6/B+1 17

TITLE: Some special features of the combustion of liquid-fuel droplets

SOURCE: Odessa. Universitet. Trudy, v. 152. Seriya fizicheskikh nauk, no. 8, 1962. Voprosy gazovoy dinamiki, isparenlya i goreniya v dispersnom vide (Problems of gas dynamics, evaporation, and combustion in the dispersed state), 18-24

TOPIC TAGS: combustion, experimental combustion, droplet combustion, suspension combustion, liquid fuel, trace method, liquid fuel combustion

ABSTRACT: The combustion of single particles and aerosols was investigated with powdered plexiglass, celluloid and paraffin wax particles, which are more easily studied than liquid fuels. Traces of burning or evaporating particles were photographed. The dependence of particle lifetime on mass was determined. The particle distribution curve showed a sharply defined maximum. The mean size was 7 microns, and only 8% of the particles were half this size. Comparison of the

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L 32035-65

ACCESSION NR: AT5006323

results shows that the effects of temperature on the evaporation rate of small and large particles are quantitatively similar. The increase of the number of particles per unit volume increases the number of traces up to a limit beyond which the flame becomes continuous. This is accompanied by an abrupt temperature and radiation increase, which reaches a maximum and then declines. On the basis of the flame length of a certain particle size fraction, data on the variation of particle sizes during the combustion were derived. A strong deviation from linearity in the continuous flame conditions is explained by a strong absorption of radiating heat by the burning particle. It has been demonstrated previously that this phenomenon is connected with the deviation from linearity of the surface variation as a function of time. Orig. art. has: 10 figures. [AC]

ASSOCIATION: Odesskiy gosuniversitet (Odessa State University)

SUBMITTED: 00 ENCL: 00 SUB CODE: FP

NO REF SOV: 002 OTHER: 000 ATD PRESS: 3200

Card 2/2

L 25042-65 EPA/EWP(e)/EPA(s)-2/EWT(m)/EPF(c)/EWA(d)/EPR/EPA(w)-2/EWP(j)/T/EWP(t)/EWP(k)/EWP(b) Pc-4/Pf-4/Pr-4/Ps-4/Pt-10/Paa-4/Pab-10 IJP(c)/RPL RWH/JD/WW/JW/WB/JWD/MLK/RM

ACCESSION NR: AT5004219 S/0000/64/000/000/0154/0159

AUTHOR: Polishchuk, D. I.; Latonina, L. P.; Velikanova-Yankevich, V. L.

TITLE: General relationships for the combustion of suspension droplets

SOURCE: AN UkrSSR. Institut tekhnicheskoy teplofiziki. Teplofizika i teplotekhnika (Thermophysics and heat engineering). Kiev, Naukova dumka, 1964, 154-159

TOPIC TAGS: combustion, metallized fuel, metal combustion, slurry fuel, fuel suspension

ABSTRACT: Suspensions of metal powders in liquid fuels were prepared by addition of 2—3% rubber or polyisobutylene, and the combustion characteristics were studied by the suspended-droplet method. Droplets 0.5—4.5 mm in diameter were suspended on a clay sphere in an airstream having a velocity up to 15 m/sec and a temperature up to 950C. The full combustion time was measured as a function of droplet diameter, and the combustion constant dS/dt (S, surface; t, time)

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L 25042-65

ACCESSION NR: AT5004219

4

was calculated. The relationships of S vs t were linear in some cases, dS/dt was determined for Al^{27}, B^{27}, and Mg^{27} suspensions in kerosine, gasoline, isooctane, methanol, and ethanol as a function of air temperature. A graph of dS/dt vs T is given for suspensions of 25% B-75% kerosine and 40% Al-60% kerosine. Suspensions in petroleum products burned in several stages: first combustion of the liquid fuel, then combustion of the metal particles, and finally completion of combustion and cooling of the residue. The flow velocity had a considerable effect on the burning velocity at temperatures below 750C. At higher temperatures the effect was negligible. Suspensions in isooctane burned slowest, and suspensions in alcohols, fastest. The latter case is explained by the fast combustion of the alcohol and by ejection of metal particles from the suspension. The temperatures reached in the individual stages of combustion were measured. A suspension of boron in petroleum products and in alcohol gave temperatures of 2300 and 2900C, a suspension of aluminum, 2900 and 3000C. When high temperatures are required, aluminum suspension is therefore preferable. Orig. art. has: 4 figures. [PV]

ASSOCIATION: Odesskiy gosudarstvennyy universitet im. I. I. Mechnikova (Odessa State University)

Card 2/ 3

L 25044-65 EPA/EPA(s)-2/EWT(m)/EPF(c)/EPR/EPA(w)-2/T Pab-10/Pr-4/Ps-4/Pt-10
RPL RWH/WW/JW/MLK
ACCESSION NR: AT5004221 S/0000/64/000/000/0163/0166

AUTHOR: Litonina, L. P.; Fedoseyev, V. A. (Doctor of physicomathematical sciences); Polishchuk, D. I.

58
B+1

TITLE: Combustion of droplets in an airstream

SOURCE: AN UkrSSR. Institut tekhnicheskoy teplofiziki. Teplofizika i teplotekhnika (Thermophysics and heat engineering). Kiev, Naukova dumka, 1964, 163-166

TOPIC TAGS: combustion, liquid fuel, droplet, air breathing propulsion

ABSTRACT: The blow-off velocities of B-70 gasoline, T-1 kerosine, and isooctane droplets have been studied at the Combustion Laboratory of the Odessa State University by recording the temperature of the droplet, the air velocity, and the droplet diameter at blow-off. This is the latest in a series begun in 1953 which includes studies of the kinetics of droplet combustion, the effect of the air velocity on combustion, and the relationships between the blow-off velocity and the droplet diameter at 25—1000C. It was found that the blow-

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L 25044-65

ACCESSION NR: AT5004221 O

off velocity is a function of the air temperature, the droplet diameter, and specific properties of the fuel. The ratio of blow-off velocity to droplet diameter suggested by Spalding as a blow-off criterion has been evaluated for the fuels studied. The change of the droplet surface area of B-70 gasoline was determined as a function of time at 300 and 500C. Flame blow-off was indicated by a break in the curve of droplet surface vs time. Orig. art. has: 2 figures. [PV]

ASSOCIATION: Odesskiy gosudarstvennyy universitet im. I. I. Mechnikova (Odessa State University)

SUBMITTED: 10Aug64 ENCL: 00 SUB CODE: FP

NO REF SOV: 007 OTHER: 000 ATD PRESS: 3180

Card 2/2

L 45672-66 EWT(l)/EWP(m)/EWT(m)/T DS/WW/JW/JWD/RO
ACC NR: AP6021222 (N) SOURCE CODE: UR/0294/66/004/003/0466/0468

AUTHOR: Polishchuk, D. I.

ORG: none

TITLE: Fifth scientific conference on problems of vaporization, combustion and gas dynamics of dispersion systems

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 3, 1966, 466-468

TOPIC TAGS: physics conference, aerosol, gas dynamics

ABSTRACT: A resume of the Fifth All-Union Inter-University Conference on the vaporization, combustion and gas dynamics of dispersion systems is given. The Conference was held at Odessa University, with an attendance of 216 delegates. 51 papers on the theory of and experience with aerosol formation, aerosol stability and heat exchange and gas dynamics of two-phase streams were read. Another 58 papers dealt with theoretical and experimental investigation of combustion and vaporization processes of aerosol materials at high temperatures. The most important papers presented at each of two sections (phase transition section and gasdynamics section) as well as those given in plenary sessions are briefly described. The more interesting approaches and solutions are briefly mentioned without going into the significance of the experimental results. At the conference, the study of smokes, fogs and clouds was also discussed. In addition, there was some discussion of solid fuels and metal powder combustion.

SUB CODE: 20/ SUBM DATE: none

Card 1/1

ACC NR: AT7000292 SOURCE CODE: UR/3142/60/150/007/0033/0037

AUTHOR: Polishchuk, D. I.

ORG: None

TITLE: Vaporization and combustion of drops of some organic liquids

SOURCE: Odessa. Universitet. Trudy, v. 150. Seriya fizicheskikh nauk, no. 7, 1960. Voprosy ispareniya i goreniya v dispersnom vide (Problems of evaporation and combustion in the dispersed state), 33-37

TOPIC TAGS: vaporization, combustion kinetics, liquid fuel

ABSTRACT: Data are given from experimental research conducted at the Laboratory of Combustion Physics, Odessa State University on the process of combustion and vaporization of drops of liquid fuel. Comparatively large (up to 2 mm) drops were suspended from a special device consisting of a glass sphere on a thin nichrome filament. The vaporizing or burning drops were photographed through a microscope using a motion picture or still camera specially modified for photographing rapid processes. The experimental setup provided for vaporization of drops in a stream of air at a given temperature (from room temperatures to 100°C) and velocity (from 0 to 6 mm/sec). Provision was also made for maintaining a given vapor concentration (from 0 to saturation). Changes in the dimensions of vaporizing drops of a number of organic liquids

Card 1/2

ACC NR: AT7000297 SOURCE CODE: UR/3142/60/150/007/0085/0096

AUTHOR: Latonina, L. P.; Fedoseyev, V. A.; Polishchuk, D. I.

ORG: None

TITLE: Experimental research on combustion of drops of various fuels in a hot air stream

SOURCE: Odessa. Universitet. Trudy, v. 150. Seriya fizicheskikh nauk, no. 7, 1960. Voprosy ispareniya i goreniya v dispersnom vide (Problems of evaporation and combustion in the dispersed state), 85-96

TOPIC TAGS: combustion kinetics, liquid fuel, fuel ignition, vaporization, air flow

ABSTRACT: The authors study "separation" of the flame from a drop of burning fuel in a moving air stream. Motion picture photography was used for studying the flame separation phenomenon in the case of a drop with continuously decreasing diameter. The flow conditions (Reynolds number) change with a reduction in the size of the burning drop when the velocity of the air stream remains constant, and the distance between flame and drop increases with combustion. The "stationary drop unit" shown in the figure was used for measuring the velocities at which fading of the flame was observed on the frontal surface of the drop by vaporization from a sphere 2 of calcined clay fastened to the tip of a hypodermic syringe. The piston 4 of the syringe is con-

Card 1/2

L 42056-66 EWT(1)/EWP(m)/EWT(m)/T IJP(c) DS/AM/JH/JWD/WE/GW

ACC NR: AP6016055 SOURCE CODE: UR/0185/66/011/005/0575/0578

137
73
B

AUTHOR: Polishchuk, D. I.

ORG: none

TITLE: Fifth Scientific Conference on the Problems of Evaporation, Combustion, and Gas Dynamics of Dispersed Systems

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 11, no. 5, 1966, 575-578

TOPIC TAGS: physics conference, gas dynamics, combustion, phase transition, aerosol, metal combustion, oscillatory combustion

ABSTRACT: The Fifth Scientific Conference on Evaporation, Combustion, and Gas Dynamics of Dispersed Systems was held at Odessa State University from 27 September through 2 October 1965. The conference was convened by the University; the Council for High-Temperature Thermodynamics and Thermal Physics of the Ukrainian Academy of Sciences also participated. Some 216 scientists representing various institutes and more than 100 scientists and students of Odessa State University took part in the work of the conference.

The conference was divided into two sections: one on phase transitions in aerodispersed systems and the other on combustion and gas dynamics. /

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At the plenary session of both sections, 51 papers dealing with the theory and practice of the formation and stability of aerosols, heat exchange, and gas dynamics of two-phase flows and 58 papers on theoretical and experimental studies of combustion and evaporation of dispersed materials at high temperatures were presented.

In the section on dispersed systems, B. V. Deryagin, Corresponding Member of the Academy of Sciences USSR, reported on new progress in the study of course-dispersed aerosols, and professor M. S. Shishkin reported on the conditions of the growth of snow, sleet, and hail particles in supercooled clouds. Deryagin's paper and Yu. A. Yalamova's paper on the theory of diffusiophoresis and thermophoresis of large aerosol particles were discussed in great detail.

I. M. Yur'yev, V. M. Volushchuk, and E. M. Ovchinnikova presented papers on the calculation of the coefficients of capture of aerosol particles, and I. I. Paleyev, F. O. Agafonova, and M. Ye. Lavrent'yev reported on results of experimental studies of the flow of aerodispersed systems. Results of experimental studies were also presented on the motion of dispersed materials in vertical closed tubes by S. M. Reprintseva and M. V. Fedorovich.

A. D. Malkina, and his colleagues disclosed the results of using organic compounds for crystallization of water in clouds, and a series of papers on the evaporation of a drop of solution were read. The behavior of a drop of solution on a hot surface in an acoustic field was discussed by I. I. Paleyev and his colleagues.

In the section of the conference dealing with combustion and gas dynamics, Ya. B. Zel'dovich, A. G. Istratov, and V. B. Librovich discussed the present state of the theory of combustion instability.

The instability criterion of a normal flame was reviewed by K. I. Shchelkin and S. K. Aslanov, and L. A. Klyachko reported on the ignition and combustion of metal particles. A. G. Istratov and V. B. Librovich presented a paper on spherical flame stability and diffusion effects on the stability of a laminar flame front.

G. A. Varshevskiy and D. V. Fedoseyev presented a paper on the ignition of a single drop of liquid fuel, while L. A. Klyachko gave a detailed analysis of the ignition of a cluster of drops.

Card 4/5

combustion of hydrocarbons in a fluidized

[...] v. 2, no. 8]
SUB CODE: 20, 21 / SUBM DATE: none

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POLISHCHUK, D.I.

Fourth Scientific Conference on the Evaporation, Combustion, and Gas Dynamics of Disperse Systems. Ukr. fiz. zhur. 10 no.5:574-576 My '65. (MIRA 18:5)

L 62902-65 EPA/EWT(1)/EWP(m)/EPA(s)-2/EWT(m)/EPF(c)/EWP(f)/EPA(w)-2/EWP(j)/T/FCS(k)/EWA(c)/ETC(m)/EWA(1) RPL DS/WW/JW/JWD/WE/RM

ACCESSION NR: AP5016706 UR/0294/65/003/003/0493/0498

AUTHOR: Polishchuk, D. I. 44,55

TITLE: Fourth Scientific Conference on Evaporation, Combustion, and Gas Dynamics of Disperse Systems

SOURCE: Teplofizika vysokikh temperatur, v. 3, no. 3, 1965, 493-498

TOPIC TAGS: thermodynamics, combustion, thermodynamics conference, evaporation, gas dynamics, ignition, combustion chamber, flame, aerosol

ABSTRACT: The Fourth Scientific Conference on Evaporation, Combustion, and Gas Dynamics of Disperse Systems was held at Odessa State University, 44,55 5-10 October 1964. The conference was organized by the University and the Council for High-Temperature Thermodynamics and Thermal Physics of the Academy of Sciences USSR. A total of 155 delegates attended, representing a number of institutes of the Academy of Sciences USSR and of its Siberian Branch, the Ukrainian, Belorussian, and Kazakh Academies of

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L 62902-65
ACCESSION NR: AP5016706

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Sciences; and some branch institutes of the Moscow, Leningrad, Kiev, Saratov, Kazan, and Dnepropetrovsk Universities. More than 100 members of teaching staffs, scientific workers, and advanced students of the university and other higher-education institutions in Odessa also took part. The conference was conducted in two sections dealing with the low-temperature processes in aerosols, and with combustion and gas dynamics, headed by Prof. A. Z. Golik and Prof. S. M. Todes, respectively.

During plenary meetings, papers were delivered by K. I. Shchelkin and B. V. Deryagin, Corresponding Members of the Academy of Sciences USSR, and Z. R. Gorbis, Doctor of Technical Sciences. Shchelkin's paper, "High-Frequency Pulses During Combustion of Solid Propellants", covered the mechanism in the conversion of combustion energy into oscillation energy and the amplification of oscillations. Gorbis's paper, "Heat Transfer in Disperse Flows," gave the results of experimental and theoretical investigations on heat transfer carried out at the Odessa Technological Institute im. M. V. Lomonosov.

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ACCESSION NR: AP5016706

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Thirty-eight papers dealt with theoretical and experimental investigations of the operation of combustion chambers of various power plants. In their paper "Calculation of the Rates of Evaporation and Growth of a Naphthalene Droplet, Taking into Account its Change in Temperature", O. M. Todes, V. A. Fedoseyev, and V. I. Zubkov presented a solution which permits calculation of the temperature and the rate of evaporation of a droplet of water or other liquid in air containing unsaturated vapors. In particular, it was shown that if the evaporation takes place in the diffusion zone, cooling of the particle does not depend on a low velocity. This result has been confirmed by temperature measurements of evaporating naphthalene spheres. A paper by Yu. B. Sviridov, Ye. V. Shatrov, and G. M. Kamfer dealt with the investigation of the evaporation process of dispersed liquid fuels in a constant-volume combustion chamber. The authors presented the results of a study of fundamental laws for heating and evaporation of the atomized fuel. In particular, they ascertained that the heating process of injected fuel proceeds at a continuously decreasing rate of heat transfer to the droplet. The empirical relationships for this process were

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derived. It was shown that the amount of the evaporated fuel is directly proportional to the temperature difference between the surrounding medium and the fuel, and that it first decreases and then increases with increasing pressure.

A number of papers dealt with investigations of ignition processes. In a paper entitled "The Effect of Fuel Evaporation on the Ignition Delay Time of Two-Phase Mixtures," A. V. Kudryavtsev presented methods for calculating the spontaneous ignition delay time of monodisperse combustible mixtures with nonhomogeneous phases. It was shown that at low temperatures the dependence of the ignition delay of a two-phase mixture on temperature and pressure is analogous to the dependence of the homogeneous mixture. Within the high-temperature range, the dependence of the ignition delay on temperature and pressure is defined, basically, by the evaporation rate of fuel droplets. "Ignition Laws of Particles of Homoge-

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ACCESSION NR: AP5016706

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neous Explosive Substances in Heated Gas", by Yu. L. Grigor'yev, E. I. Maksimov, and A. G. Merzhanov, dealt with a detailed analysis of the ignition of spherical particles of homogeneous explosive substances, taking into account the exothermic reaction in the condensed phase and the unsteady thermal conductivity of the particle and the gas. The relative importance of various factors was discussed. The dependence of ignition temperatures on the particle size was determined, and the relationships between ignition delay and the temperature or particle size were studied.

A paper entitled "Special Features of Ignition and Combustion of Disperse Fuels in Oxygen-Enriched Media" by Yu. B. Sviridov, Ye. V. Shatrov, and G. M. Kamfer gave the results of an investigation of ignition and combustion processes of diesel fuels taking place in oxygen and nitrogen-oxygen mixtures. It was found that within the low-temperature range, the com-

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bustion regime is kinetic, while in the high-temperature range, it is diffusion controlled. The burning velocity at temperatures exceeding 450°C does not depend on pressure; the ignition delay decreases with increasing pressure.

Many papers dealt with combustion problems of solid disperse fuels, ranging from the oxidation of individual particles to the combustion of a polydisperse flow. "Ignition of Magnesium Particles in Steam" by V. Ye. Glushkov and N. V. Fedoseyeva presented a method and determined the activation energy during low-temperature oxidation of magnesium particles in the pre-flame reaction in steam (580—600°C). A paper by D. L. Polishchuk, V. L. Yankevich, and T. F. Dzhuzhuk dealt with the effect of the degree of dispersion of magnesium powder suspended in kerosine on the burning velocity of the droplets. It was shown by chemical analysis of combustion products that the combustion efficiency increases with decreasing particle size. Papers entitled "Combustion of Compositions Based on Potassium-Perchlorate Oxidizer and Metallic-Fuel Combustible"

by P. E. Pokhil 544 and L. D. Romadanova 544 and "Unsteady Combustion of Thin Powder Plates" by Margolin and Gostintsev were very well received.

An interesting paper on mixing of streams of incompressible liquids in an enclosed space was delivered by B. V. Kantorovich.4455 Considerable interest was shown by the participants in the papers on the "Effect of Viscosity on Stability of a Plane Flame Front" and "Dependence of Flame-Front Stability on Flame Intensity" by S. K. Aslanov 4455 which dealt with the investigation by the method of small perturbations of plane flame-front stability, taking into account viscous forces and the relationships between chemical-reaction kinetics and hydrodynamic disturbances. It was shown that when the intensity decreases (lowering the temperature drop) combustion is stabilized.

L 6290[illegible]-65

ACCESSION NR: AP5016706

17

A number of papers dealt with the investigation of the electric properties of flames: "Certain Conductivity Problems in Flame" by E. A. Shtesel'; "Temperature of Free Electrons in Rarefied Hydrocarbon Flames" by V. I. Tverdokhlebov and M. Ye. Tretenko; "Temperature of Free Electrons and Ion Concentration in Rarefied Acetylene-Hydrogen Flames Containing Alkali-Metal Additives" by E. N. Taran and V. I. Tverdokhlebov; and "Interpretation of Dual-Probe Volt-Ampere Characteristics Obtained in Methane Flames at Atmospheric Pressure" by V. Ye. Anisimov. It is noted that these investigations are very important because ionization in the flame is of great significance for MHD generators, rocket motors, and other devices. "Interaction Between Combustion-Product Flow and Magnetic Field" by B. V. Kantorovich also created considerable interest.

Card 8/9

L 62902-65

ACCESSION NR: AP5016705

A paper by V. A. Fedoseyev entitled "Development of a Method for Investigating Phase Transitions in Aerodisperse Systems" dealt with the further improvement of the trace method and the development of apparatus for determining the characteristics of combustion products, their degree of dispersion, number of particles per unit volume, and completeness of chemical reaction. An electric filter was used to trap combustion products, the particles were counted in the diluted suspension with an ultramicroscope, and particle size was determined with an electronic microscope.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: TD, GC

NR REF SOV: 000 OTHER: 000 FSB v.1, no. 9

Card 9/9

POLISHCHUK, D. I., FEDOSEYEV, V. A. and LATONINOY, L. P. (Institute of physics of Odessa State university)

"Investigation of combustion of droplets in air currents".

Report presented at the Section on Physics of Combustion, Scientific Session, Council of Acad. Sci. Ukr SSR on High Temperature Physics, Kiev, 2-4 Apr 1963.

Reported in Teplofizika Vysokikh temperatur, No. 2, Sep-Oct 1963, p. 321, JPRS 24,651. 19 May 1964.

POLISHCHUK, D.I.

Third Intercollegiate Conference on Evaporation, Combustion, and Gas Dynamics of Disperse Systems. Ukr. fiz. zhur. 8 no.4: 498-500 Ap '63. (MIRA 16:8)

(Physics—Congresses)

Ukrayins'kyy fizichnyy zhurnal, v. 8, no. 4, Apr 1963, 498-500.
S/185/63/008/004/015/015

A scientific conference devoted to problems of evaporation, combustion, and gas dynamics of dispersed systems was held at Odessa State University imeni I. I. Mechinikov from 1 to 8 October 1962. Sixty-five papers were presented, 24 of which dealt with the theory and practice of production and stability of aerosols and the effect on these processes of various physicochemical factors; the other 41 were working processes in combustion chambers of various power plants. Some of the titles were "Investigating oxidation processes of high hydrogenous fuels by oxygen from compressed air," S. S. Kramarenko; "Burning of metal suspension in hydrocarbon fuels," D. I. Polishchuk, L. P. Latonina, and V. L. Yankevich; and "Experimental investigation of two-phase flow in axially-symmetrical nozzles," G. A. Komov. Included also were discussions of the methods of solving equations of dissociating gas flow in ducts and gas dynamic calculations for jet engines, G. A. Varshavskiy, E. Ya. Guber, and A. P. Kiselev; the formation of plane shock waves in shock tubes and passage of shock waves through a flame front, D. V. Fedoseyev, G. D. Sadamandr, and I. K. Sevast'yanova; experimental results on the flow of combustion products of a methane-oxygen mixture around cambered surfaces with diffraction of detonation waves, L. G. Gvozd'eva; the stability of a steady-state flame front S. K. Aslanov; the relationship between the flame and the diameter of a burning drop, V. O. Fedoseyev; and theoretical and experimental investigation of burning of spherical metal particles, by L. A. Klyachko.

[AS]

Card 2/2

POLISHCHUK, D. Ya.

USSR/Miscellaneous - Industrial Processes

Card 1/1

Author : Polishchuk, D. Ya.

Title : Automatization of universal hydraulic presses

Periodical : Stan. i Instr., No. 5, 4 - 7, May 1954

Abstract : The deficiencies of existing hydraulic presses ChMZ, IZh and "Metallist" used by Soviet industry for the manufacture of plastic products are described. The author proposes certain modifications which would fully automatize the operations of the existing universal hydraulic presses. Drawings.

Institution : ...

Submitted : ...

S/081/61/000/003/016/019
A166/A129

AUTHOR: Polishchuk, D. Ya.

TITLE: The technological effectiveness of parts from thermosetting plastics

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1961, 546, abstract 3P77. (Vestn. priborostroyeniya, 1959, no. 1, 51 - 56)

TEXT: The article states the basic factors which must be taken into account in designing pressed parts so as to facilitate extraction of the parts from the mold and to ensure high strength characteristics and high-quality pressing. Examples are given.

Summary by Ye. Zambrovskaya

[Abstracter's note: Complete translation]

Card 1/1

POLISHCHUK, E.

Shishkir, Ivan Ivanovich, 1832-1898

I. Shishkin. Rabotnitsa 31, No. 3, 1953.

Monthly List of Russian Accessions, Library of Congress
June 1953. UNCL.

POLISHCHUK, E. R.

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

Abs Jour: Referat Zhur - Khimiya, No 1, 1958, 1503

Author : Pavlushenko I.S., Polishchuk E.R.

Inst : Leningrad Technological Institute imeni Lensovet

Title : New Computation Graph for Determining Frictional Pressure Losses.

Orig Pub: Tr. Leningr. tekhnol. in-ta im. Lensoveta, 1957, No 39, 204-215

Abstract: A comparison is made of the calculation equations derived by a number of investigators for determining the coefficient of external friction λ in pipe lines, and it is shown that most of the correlations yield results that are in good agreement.

Card 1/2

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

H-2

A general graph has been plotted for the correlation between criterion Eu and Re (up to $Re = 10^8$). For the turbulent and the automodel regions 5 curves have been plotted which correspond to the different values of relative roughness (from 10^{-2} to 10^{-4}) and also a curve for smooth pipes. The plotted curves correspond to the averaged values of Eu criterion, calculated on the basis of the equations being compared. It is shown that in scope of applicability and simplicity of calculations, the most convenient is the equation of Filonenko: $\lambda = 0.302(\lg Re - 0.903)^{-2}$.

Card 2/2

KOCHETKOVA, Z.V.; LEKHNO, S.M.; POLISHCHUK, F.M.

Experimental unit for the manufacture of vitaminized granulated sugar. Sakh.prom. 38 no.3:28-30 Mr '64. (MIRA 17:4)

1. Institut pitaniya AMN SSSR (for Kochetkova). 2. Krasnopresnenskiy sakharo-rafinadnyy zavod im. Mantulina (for Lekhno, Polishchuk).

CHIKIN, G.A.; MELESHKO, V.P.; KLEYMAN, M.B.; POLISHCHUK, F.M.

Experimental unit for refinery juice purification by means of anion exchange resins. Sakh.prom. 38 no.2:25-31 F '64. (MIRA 17:3)

1. Voronezhskiy gosudarstvennyy universitet (for Chikin, Meleshko).
2. Krasnopresnenskiy sakharo-rafinadnyy zavod im. Mantulina (for Kleyman, Polishchuk).

POLISHCHUK, P.M.

Effect of cobalt isotope rays on sugar-beet quality. Sakh.prom. 30 no.1:54-55 Ja '56. (MLRA 9:6)

1.Krasnopresnenskaya gruppovaya laboratoriya.
(Sugar beets) (Cobalt--Isotopes)

KAS'YANOV, S.F., inzhener; OVCHARENKO, A.I., inzhener; POLISHCHUK, F.Ya., inzhener.

Methods of improving the mechanization of work in metallurgical plants.
Mekh.trud.rab.10 no.4:8-13 Ap '56. (MLRA 9:7)
(Metallurgical plants)