S/096/63/000/004/009/010
E194/E455

AUTHORS: Paleyev, I.I., Doctor of Technical Sciences, Professor, Katsnel'son, B.D., Candidate of Technical Sciences, Tarakanovskiy, A.A., Engineer

TITLE: An investigation of the processes of heat and mass transfer in a pulsating flow

PERIODICAL: Teploenergetika, no.4, 1963, 71-74

TEXT: Because of its practical importance the influence of velocity pulsation on heat and mass transfer in a liquid was studied. Heat transfer was studied between a cylinder and a liquid; mass transfer between a sphere and a liquid. The liquids used were water and kerosene. The cylindrical pick-up contained a heating element and was fitted with surface thermocouples. The bath in which it was located could be rotated, to drive the liquid past the cylinder. The rod was made to pulsate by a separate drive from an electric motor. With pulsation, the heat-transfer rate could be as much as 5 times greater than without. The following expression was used to generalize the experimental data

$$\frac{Nu'}{Nu_0} = 0{,}95\frac{Re + Re'}{Re} \approx 1 + \frac{Re'}{Re}.$$

Card 1/4

An investigation of ...

This formula is valid for the range $\frac{Re + Re'}{Re}$ from 1.3 to 5. With the initial pick-up, failure occurred at frequencies above ~70 c/s. Accordingly, special tests were made with smaller pick-ups and it was found that the curve of heat-transfer rate against frequency was peaked, with a clearly expressed minimum. In some cases as many as 5 or 6 peaks were observed but they could not be measured accurately because of scatter of experimental results. The peaking could not be explained by regular periodic expansion and contraction of the boundary layers; nor could various other effects, such as the great changes in the configuration of the heat-exchange vector diagram and the shape of the heat-transfer curve as a function of Re number. Studies were also made of heat transfer during free convection within the range of Gr from 1×10^3 to 1×10^6. The test results are represented by the expression

$$\frac{Nu'}{Nu} = 1{,}6\left(\frac{Gr + (Re')^2}{Gr}\right)^{1/4},$$

where t - temperature difference, β - coefficient of temperature expansion, ℓ - the characteristic dimension,

S/096/63/000/004/009/010
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An investigation of ...

ν - kinematic viscosity of medium. The studies of mass transfer during forced motion were made with spheres of salt in a pulsating column of liquid. Salt spheres of different diameters were made to fall in the tube at different rates by locating within them metal spheres of various diameters. At a frequency of 25 c/s the value of

$$Nu_D = \frac{\alpha_D d}{D},$$

where α_D - mass transfer coefficient, D - diffusion factor, was three times greater in the presence of pulsation than in its absence. At 25 c/s, increasing the amplitude by 1.5 orders only doubles Nu_D. The mass transfer experimental results could not be expressed in criterial form. In some cases the use of pulsation could increase mass transfer rates by a factor of 5 to 6, but such increases were usually confined to a narrow band of frequency and amplitude, thus approximately repeating the peak character of the heat-transfer curve. It was very difficult to obtain numerical data under these conditions. The main difficulty is the relationship between amplitude and frequency;

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An investigation of ...

it is very difficult to make tests at one amplitude whilst altering the frequency. It is concluded that improved heat- and mass-transfer equipment could be constructed by utilizing pulsating flow effects. There are 8 figures.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut (Central Boiler and Turbine Institute)

Card 4/4

AID Nr. 990-8 14 June

HEAT TRANSFER BETWEEN A HOT SURFACE AND A GAS STREAM CARRYING LIQUID DROPLETS (USSR)

Palevev, I. I., and A. F. Agafanova. IN: Teplo- i massoperenos, tom II: Teplo- i massoperenos pri fazovykh i khimicheskikh prevrashcheniyakh (Heat and mass transfer, v. 2: Heat and mass transfer during phase and chemical transformations). Minsk, Izd-vo AN BSSR, 1962. 260-268.
S/862/62/002/000/027/029

Flow characteristics and heat transfer were studied in systems in which water droplets suspended in an air stream flowed through a heated tube. The amount of droplets settling at the wall, the concentration of droplets at the outlet, the amount of liquid in the film, and the water and air flow rates were measured in a test section 40 mm wide, 300 mm long and 4 mm high into which water was injected through a centrifugal nozzle. The experiments were conducted at water injection rates of 20 to 28 l/hr,

Card 1/2

AID Nr. 990-8 14 June

HEAT TRANSFER BETWEEN A HOT SURFACE (Cont.)

S/862/62/002/000/027/029

flow velocities of 60 to 170 m/sec, and mean droplet diameters of 9 to 16 μ. Heat transfer in an electrically heated nickel tube 150 mm long was studied at 1 to 3 atm, air velocities of 100, 147 and 170 m/sec, and initial water concentrations of 0.2 to 2.5 kg/m^3. When the wall temperature exceeded a certain value, critical heat-flux densities of $(0.8 \text{ to } 2.3) \cdot 10^6$ kcal/m^2·hr were reached at all air and water flow rates tested, and in some cases tube burnout was observed 10 to 15 mm from the outlet. At constant water concentration the heat transfer increased with increasing flow velocity and pressure. Heat-transfer coefficients calculated for different air-water ratios were 40 to 60 times higher than for pure air and about 10 to 17 times higher than for water. The study was made at Leningrad Polytechnic Institute imeni M. I. Kalinin. [PV]

Card 2/2

LYKOV, A.V., akademik, red.; SMOL'SKIY, B.M., prof., red.; KUTATELADZE, S.S., prof., red.; PALEYEV, I.I., prof., red.; EL'PERIN, I.T., kand. tekhn. nauk, red.; TIMOFEYEV, L., red. izd-va; VOLOKHANOVICH, I., tekhn. red.

[Heat and mass transfer]Teplo- i massoperenos; doklady. Pod obshchei red. A.V.Lykova i B.M.Smol'skogo. Minsk, Izd-vo Akad. nauk BSSR. Vol.2.[Heat and mass transfer during phase transitions and chemical transformations]Teplo- i massoperenos pri fazovykh i khimicheskikh prevrashcheniiakh. 1962. 377 p. (MIRA 16:3)

1. Vsesoyuznoye soveshchaniye po teplo- i massoobmenu. 1st. Minsk, 1961. 2. Akademiya nauk Belorusskoy SSR (for Lykov).
(Heat--Transmission) (Mass transfer)
(Phase rule and equilibrium)

PALEYEV, I.I., prof.; STRAKHOVICH, K.I., prof.; AGAFONOV, Ye.A., dotsent; ZYSIN, V.A., dotsent

"Principles of the theory of heat transfer" by V.S. Zhukovskii. Reviewed by I.I. Paleev and others. Izv. vys. ucheb. zav.; energ. 5 no.6:128-129 Je '62. (MIRA 15:6)

1. Leningradskiy politekhnicheskiy institut im. M.I.Kalinina.
(Heat—Transmission) (Thermodynamics)
(Zhukovskii, V.S.)

VITAMIN, Lyudmila Aleksandrovna; KATSNEL'SON, Boris Davidovich; PALEYEV, Il'ya Isaakovich; KUTATELADZE, S.S., red.; SOBOLEVA, Ye.M., tekhn.red.

[Atomization of liquids by spray nozzles] Raspylivanie zhidkosti forsunkami. Pod red. S.S.Kutateladze. Moskva, Gosenergoizdat, 1962. 263 p. (MIRA 15:7)
(Atomization) (Combustion)

PHASE I BOOK EXPLOITATION SOV/6121

Nemar, Lyudmila Aleksandrovna, Boris Davidovich Katsnel'son, and Il'ya Isaakovich Paleyev

Raspylivaniye zhidkosti forsunkami (Spray Atomization of Liquids). Moscow, Gosenergoizdat, 1962. 263 p. Errata slip inserted. 6000 copies printed.

Ed. (Title page): S. S. Kutateladze; Tech. Ed.: Ye. M. Soboleva.

PURPOSE: This book is intended for technical personnel and senior students in schools of higher technical education engaged in the design and construction of power and spray installations.

COVERAGE: Regularities of liquid-jet disintegration and a generalization of experimental data on atomization of liquids are presented. Descriptions and basic characteristics of various types of atomizers are given and some examples of atomizer design are presented. Combustion of a single droplet and of a liquid-fuel spray is studied. There are 147 references: 109 Soviet, 37 English, and 1 French.

Card 1/

BLOKH, Arkadiy Grigor'yevich; GURVICH, A.M., doktor tekhn. nauk, prof., red.; PALEYEV, I.I., doktor tekhn. nauk, prof., retsenzent; ZHITNIKOVA, O.S., tekhn. red.

[Fundamentals of radiation-heat exchange] Osnovy teploobmena izlucheniem. Pod red. A.M.Gurvicha. Moskva, Gosnenergoizdat, 1962. 330 p. (MIRA 15:6)
(Heat--Radiation and absorption)

IALEYEV, N., inzh.-kapitan 1 ranga

Take better care of aquatic equipment. Voen.znan. 36 no.11: 32 N'60. (MIRA 13:11)
(Aquatic sports--Equipment and supplies)

PALEYEV, N., inzh. kapitan 1 ranga.

Marine engineers. Voen. znan. 35 no.11:24-25 N '59. (MIRA 12:12)

(Marine engineering)

SMOLENSKIY, A.N.; PALEYEV, N.M., inzh., red.

[Design and construction of steam turbine parts] Konstruktsiia i raschet detalei parovykh turbin. Moskva, Mashinostroenie, 1964. 466 p. (MIRA 17:12)

KISELEV, V.V., inzh.; MERENTSEV, S.P., inzh.; SHELEST, P.A., inzh.; KMETIK, P.I., inzh., retsenzent; PALEYEV, N.M., inzh., red.

[Locomotive compressors] Kompressory lokomotivov. Moskva, Mashinostroenie, 1965. 334 p. (MIRA 18:4)

DEYCH, M.Ye.; TROYANOVSKIY, B.M.; Prinimal uchastiye KAZINTSEV, F.V., inzh.; ZAL'F, G.A., doktor tekhn. nauk, retsenzent; PALEYEV, N.M., inzh., red.

[Investigations and calculations of the stages of axial-flow turbines] Issledovaniia i raschety stupenei osevykh turbin. Moskva, Izd-vo "Mashinostroenie," 1964. 627 p. (MIRA 17:5)

GOLOVINTSOV, A.G., doktor tekhn. [illegible] prof. (deceased); [illegible], V.A., dots.; A[illegible]ASHEV, [illegible]; [illegible], [illegible]; PLASTIN, [illegible]; SUSLOV, A.D.; FROLOV, Ye.[illegible]; [illegible]SKIY, [illegible]; STRAKHOVICH, K.I., doktor tekhn.nauk, prof., retsenzent; PALEYEV, N.M., inzh., red.

[Rotary compressors] Rota[illegible]nnye kompressory. [By] A.G. Golovintsov i dr. Moskva, Izd-vo "Mashinostroenie," 19[illegible]. 314 p. (MIRA [illegible])

1. Fakul'tet teplovykh i g[illegible]ravlicheskikh mashin Moskovskogo vysshego tekhnicheskogo uchilishcha imeni N.Ye. Baumana (for all except Strakhovich, Paleyev).

PALEYEV, N.M., inzh., red.

[The 6Ch 12/14 diesel engines; description and operating instruction] Dizeli 6Ch 12/14; opisanie i instruktsii po obsluzhivaniiu. 3. izd., ispr. i dop. Moskva, Mashinostroenie, 1965. 186 p. (MIRA 18:2)

1. Dizelestroitel'nyy zavod im. S.M.Kirova.

ANDREYEV, M.M.; BERMAN, S.S.[deceased]; BUGLAYEV, V.T.; KOSTROV, Kh.N.; PALEYEV, N.M., inzh., red.; POLETAYKIN, P.G., kand. tekhn. nauk, retsenzent; DENKINA, N.F., tekhn. red.

[Heat exchangers of power engineering systems] Teploobmennaia apparatura energeticheskikh ustanovok. [By] M.M. Andreev i dr. Moskva, Mashgiz, 1963. 239 p. (MIRA 16:12)

(Heat exchangers)

SMOLENSKIY, A.N.; PALEYEV, N.M., inzh., red.

[Design and construction of steam-turbine parts] Konstruktsiia i raschet detalei parovykh turbin. Moskva, Mashinostroenie, 19[illegible]. 466 p. (MIRA 18:1)

PALEYEV, N.R., vrach

Man and the Antarctic climate. Zdorov'e 2 no.9:16-18 S '56.
(ANTARCTIC REGIONS) (MLRA 9:10)
(COLD--PHYSIOLOGICAL EFFECT)

PHASE I BOOK EXPLOITATION SOV/4339

Sovetskaya antarkticheskaya ekspeditsiya, 1955-

Pervaya kontinental'naya ekspeditsiya 1955-1957 gg., nauchnyye rezul'taty (First Continental Expedition, 1955-1957, Scientific Results) Leningrad, Izd-vo "Morskoy transport," 1959. 161 p. 2,000 copies printed. (Series: Its: Materialy, tom 2)

Sponsoring Agency: Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut.

Ed.: M.M. Somov, Doctor of Geographical Sciences; Tech. Ed.: L.P. Drozhzhina.

PURPOSE: This book is intended for polar specialists, geographers, geologists, meteorologists, and geophysicists.

COVERAGE: This book is Volume 2 of a multivolume work containing scientific data collected by the First Soviet Continental Expedition to the Antarctic (1955-57), sent out under the auspices of the Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut (Arctic and Antarctic Scientific Research Institute) as part of the IGY program. The purpose of the expedition was to survey an area between 74 to 111°E longitude and 59 to 70°S latitude (an area of about 1 million square kilometers), to develop methods and techniques for field studies applicable to local conditions, and to initiate a systematic study of the natural phenomena of the region. Ground and aerial observations were conducted in the more interesting areas around and between Mirnyy and Pionerskaya, in the three oases of [illegible] and [illegible], on the Shackleton Ice Shelf, Drygalski Island, and a number of [illegible] Amundsen, [illegible], etc. [illegible] geographic, and [illegible] were made at the Mirnyy Observatory and at the Pionerskaya and [illegible] research stations. No personalities are mentioned. There are no references.

AVAILABLE: Library of Congress (G860.S58)

PALEYEV, N.R.

Effect of arctic and antarctic climate on the cardiovascular system; observations on the drifting scientific station "North Pole 4" and in the Antarctica. Terap.arkh. 31 no.11:17-22 N '59. (MIRA 13:3)

1. Iz Instituta terapii AMN SSSR (direktor - deystvitel'nyy chlen AMN SSSR prof. A.L. Myasnikov, nauchnyy rukovoditel' - prof. G.M. Danishevskiy) i Otdela polyarnoy meditsiny (nachal'nik - dotsent B.I. Shvorin) Glavsevmorputi, Moskva.
(COLD CLIMATE)
(CARDIOVASCULAR SYSTEM physiol.)

PALEYEV, N. R., Cand. Medic. Sci. (diss) "Effect of Climate of Central Arctic and Antarctica on Organism of Man," Moscow, 1961, 12 pp. (Acad. Med. Sci. USSR) 250 copies (KL Supp 1[illegible]-61, 237).

PALKYEV, N.R. (Moskva)

Effect of the nature of work on arterial pressure in human subjects under Arctic and Antarctic conditions. Klin.med. 39 no.5:22-27 My '61. (MIRA 14:5)

1. Iz Instituta terapii AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof. A.L. Myasnikov).
(COLD--PHYSIOLOGICAL EFFECT) (BLOOD PRESSURE) (EXERCISE)

ACCESSION NR: AT4041519 S/2732/59/002/000/0157/0162

AUTHOR: Paleyev, N.R.

TITLE: Medical investigations in Eastern Antarctica

SOURCE: Sovetskaya antarkticheskaya ekspeditsiya, 1955-1958. Pervaya kontinental'naya ekspeditsiya, 1955-1957 gg.; nauchny*ye rezul'taty* (First continental expedition; scientific results). Trudy* ekspeditsii, v. 2. Leningrad, Izd-vo 'Morskoy transport,' 1959, 157-162

TOPIC TAGS: medicine, physiology, neurasthenia, Antarctica, polar medicine, mountain sickness, blood pressure

ABSTRACT: Physiological studies were made from December 1955 through March 1957 at the Mirny*y and Pionerskaya stations in Antarctica and aboard the vessels which carried the field workers to and from Antarctica. The following conclusions were drawn: 1. After several months work in Antarctica the human body experiences changes of a physiological character. In 17 out of 25 subjects blood pressure decreased by 15-25%, in 5 others it decreased by 10 mm and in the other 3 it remained constant. This drop in blood pressure occurred gradually, at different rates, and after attaining a minimum remained stable for the

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ACCESSION NR: AT4041519

remainder of the stay. Most of the subjects developed neurasthenic symptoms expressed in irritability, impatience, insomnia or sleepiness, frequent dreams, and increased fatigue; there were six subjects with cardiac neurosis and many had frequent headaches. Shortness of breath developed in the open air and the pulse became quicker. Everyone gained from 3 to 12 kg in weight. Most of the subjects noted increased need for urination. Swelling of the face was noted in 25% of the subjects. 2. Changes were different in different subjects. The changes were expressed most clearly in young people, engaged for the most part in office work, who had not previously worked in the Far North; the fewest changes were experienced by men in the 30-40 year age group who were engaged in physical labor and had spent a long time in the Far North. 3. These physiological changes were caused by the Antarctic climate (reversal of the seasons), a constant low temperature, low atmospheric pressure (accompanied by sharp pressure changes), rarified air and oxygen deficiency, strong winds, low relative humidity (inside the buildings the relative humidity was 25-40%), the effect of solar radiation with a high content of ultraviolet rays, the prolonged Antarctic darkness and the psychological effect of removal from accustomed conditions. 4. The condition of members of the sledge-tractor train and those at Pionerskaya station resembled mountain sickness.

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ACCESSION NR: AT4041519

However, mountain sickness develops in the mountains of the middle latitudes at an elevation considerably exceeding the elevation of Pionerskaya station (2,700 m). 5. Experience at Mirny*y revealed that 1-1-1/2 years is the period of maximum productivity of personnel working in Antarctica. 6. During the voyage in the tropical zone there was a rapid drop in blood pressure in the overwhelming majority of subjects. This decrease occurs more rapidly and is more marked in young people, but restoration of the blood pressure level also begins more rapidly in young people than in older subjects. Certain studies on the effects of clothing were made and are also discussed. Orig. art. has: 3 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00

SUB CODE: LS, PH NO REF SOV: 000 OTHER: 000

Card 3/3

PALEYEV, N.R., kand.med.nauk

Adaptation of the human organism to polar climatic conditions. Fel'd. i akush. 28 no.2:27-32 F'63. (MIRA 16:9)

1. Iz gospital'noy terapevticheskoy kliniki I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.
(ACCLIMATIZATION) (ADAPTATION (BIOLOGY))

KOCHESHKOV, K.A.; KARGIN, V.A.; TALALAYEVA, T.V.; SOGOLOVA, T.I.; PALEYEV, O.A.

Macromolecular polymers of ethylene obtained from mixtures of lithium organic compounds with titanium tetrachloride. Vysokom. soed. 1 no.1:152-156 Ja '59. (MIRA 12:9)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova.
(Ethylene) (Lithium organic compounds) (Titanium chloride)

L 12436-63 EWP(j)/EPF(c)/EWT(m)/BDS ASD Pc-4/Pr-4 RM/WW

ACCESSION NR: AP3001156 S/0190/63/005/006/0846/0849

68
67

AUTHOR: Kocheshkov, K. A.; Kargin, V. A.; Sheverdina, N. I.; Segolova, T. I.; Paleyeva, I. Ye.; Paleyev, O. A.

TITLE: Polymers of ethylene prepared by means of organocadmium-titanium tetrachloride mixtures

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 6, 1963, 846-849

TOPIC TAGS: polymers, ethylene, organocadmium compounds, titanium tetrachloride, polyethylene, dioxanates

ABSTRACT: The polymerization of ethylene was conducted in a reactor filled with ethylene gas to which were added 300 ml of hexane and from 0.025 to 0.007 Mol/liter of an organic cadmium compound, cooled to -30C, and followed by dropwise addition, under constant stirring, of a titanium tetrachloride solution in hexane, in a ratio C-Me/ $TiCl_4$ = 1/1. The highest yields were obtained with $(n\text{-}C_4H_9)_2Cd$ and $(p\text{-}CH_3C_6H_4)_2Cd$, and it was observed that complexes of the cadmium compounds with dioxane were equally effective. In comparing the polymerization processes conducted with diphenylcadmium and phenylcadmiumiodide it was found that the yield of an essentially similar polyethylene amounted in the

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L 12436-63

ACCESSION NR: AP3001156

latter case to only one-half of the one obtained with diphenylcadmium, thus revealing the equivalency of the same radicals in the organometallic component in the catalyst and the essential role played by their number. The obtained polyethylenes were essentially white powders. Thermomechanical studies were conducted on films obtained at 180-185C and 90-100 atm, which were stretched in one direction. It was found that the polymers possessed sufficiently high values of recrystallization stress and tensile strength and high stretch and softening point values, the latter in the 130-135C range. Orig. art. has: 2 tables.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-Chemical Institute)

SUBMITTED: 25Nov61 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 006 OTHER: 005

Card 2/2

L 16374-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 ASD(m)-3 RM

ACCESSION NR: AP4049149 S/0190/64/006/011/1955/1958

B

AUTHOR: Palevev, O. A.; Kocheshkov, K. A.; Kargin, V. A.; Sogolova, T. I.; [redacted]y*chkova, V. F.

TITLE: Effect of the degree of dispersion of the organometallic component of a mixed catalyst on the polymerization of ethylene

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 11, 1964, 1955-1958

TOPIC TAGS: polyethylene, polymerization catalyst, organometallic catalyst, hexane, pheny. lithium, butyl lithium, ethyl lithium, mixed catalyst, catalyst particle size, ethylene polymerization

ABSTRACT: The dependence of the polymerization and properties of polyethylene on the chemical composition and degree of dispersion of the organometallic component of the mixed catalyst was investigated. The mixed catalyst was prepared in the same manner in all cases: ethylene-saturated n-hexane; ratio of $RLi:TiCl_4=1:1$, careful stirring, temperature of -60 to -70C. The solid organometallic component C_6H_5Li of varying particle size was prepared by the double decomposition of C_6H_5Br and alykyl-Li in various media. The degree of dispersion was estimated by visual observation under the microscope and also

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by comparing the infrared spectra of pure crystalline compounds. The micrographs showing the spherulitic structure of polyethylene indicate that the polymer reflects, to a certain extent, the form of the undissolved crystallites of the organometallic component. The difference in the size of the polyethylene spherulites is not greater than 1.6:1 according to the type of phenyl-Li used, and this does not affect the mechanical properties. The rate of ethylene absorption (maximum at 0-30C) and the yield of polymer (maximum = 2500 g/g equiv. with phenyl-Li made from bromobenzene and n-butyl lithium in hexane) were found to be directly related to the dispersion of the organometallic compound in the medium. The infrared spectra of phenyl-lithium samples (four types) showed almost complete identity. The intensity of the band varied slightly only over the range 900-1100 cm^{-1}, due usually to the deformation oscillation of the C-H bonds in the monosubstituted benzene depending on the method of preparation. Although this variation in intensity is not great, on the basis of it a difference in the packing and structure of the crystals can be assumed, which limits the movement of the C-H group in the molecule. The mechanical properties of polyethylene do not depend on the dispersion of the catalyst component, but do depend on the chemical composition of the catalyst. "The authors express their gratitude to T. V. Talalayeva and A. N. Rodinov for their valuable suggestions and assistance in this work." Orig. art. has: 4 figures and 1 table.

L 16374-65

ACCESSION NR: AP4049149

ASSOCIATION: Fiziko-khimicheskiy Institut im. L. Ya. Karpova (Physicochemical institute)

SUBMITTED: 28Dec63 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 008 OTHER: 000

Card 3/3

PALEYEV, O.A.; SHEVERDINA, N.I.; SOGOLOVA, T.I.; PALEYEVA, I. Ye.; KARGIN, V.A.; KOCHESHKOV, K.A.

Using $(n\text{-}C_3H_7)_2Cd$, $n\text{-}C_3H_7CdCl$, and $n\text{-}C_3H_7CdI$ in ethylene polymerization. Vysokom. soed. 8 no. 1:8-10 Ja '66 (MIRA 19:1)

1. Fiziko-khimicheskiy institut imeni Karpova. Submitted January 28, 1965.

PALEYEV, O. A., TALALAYEVA, T. [illegible], SOGOLOVA, T. [illegible], KOCHESHKOV, K. A., [illegible]

"[illegible] Polymers Obtained Using Organometallic [illegible] [illegible] and Titanium," paper No. [illegible], [illegible] at the International [illegible] -Polymer [illegible], K[illegible], [illegible]

A[illegible] Nauk SSSR, [illegible] Pr[illegible], [illegible] USSR

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012388

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KOCHESHKOV, K.A., PALEYEV, O.A., SOCOLOVA, T.I., SHEVERDINA, N.I., TALALAYEVA, T.V., RODIONOV, A.N.

Nouveaux composants des catalyseurs de la polymerisation de l'ethylene dans des conditions habituelles et inhabituelles.

Report submitted for the International Symposium of Macromolecular Chemistry, Paris, 1-6 July 63

EWT(d)/EWT(m)/EWP(h)

ACC NR: AP6029350 (A) SOURCE CODE: UR/0256/66/000/006/0086/0087

AUTHOR: Paleyev, P. G. (Engineer, Lieutenant colonel)

ORG: None

TITLE: An improved arrangement for towing airplanes

SOURCE: Vestnik protivovozdushnoy oborony, no. 6, 1966, 86-87

TOPIC TAGS: towing vehicle, airfield facility

ABSTRACT: A special modified truss-like vehicle making a connecting link between the tow truck and the aircraft is described and illustrated. It is proposed to use this intermediary two-wheel framework as a carrier of various equipment needed for handling the aircraft at the takeoff strip. The adjustment and rearrangement of the truss structure for fixing and holding various equipment articles is described by using a series of photos. By applying such an arrangement, the equipment is readily accessible and more convenient to handle than when kept and transported in tow trucks. Orig. art. has: 5 photos.

SUB CODE: 01/ SUBM DATE: None

Card 1/1

34211

S/057/62/032/002/012/020
B12./B102

26.2314

AUTHORS: Zandberg, E. Ya., Paleyev, V. I., and Tonterode, A. Ya.

TITLE: Dependence of the temperature threshold of surface ionization of cesium on tungsten on the cesium vapor tension

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 2, 1962, 209 - 217

TEXT: A uniform electrode surface is considered which is only slightly covered by adsorbed atoms of the ionized element.

$$i^+ = \frac{esAn}{A + \exp\frac{e}{kT}(V - \varphi - \psi)}$$ holds for the temperature dependence of the surface ionization current, where e is the ion charge, s is the ionizing surface area, A is the ratio of the statistical sums of ionic and atomic states, n is the atomic flux per surface unit area per second, V is the ionization potential of the atom, φ is the work function of the surface, and ψ is the correction to φ for the effect of an electric surface field. If $V - \varphi - \psi < 0$, the surface ionization current reaches its maximum; with $\psi = 0$ and $\psi = \varphi - V \gg kT$ the current remains close to its maximum. The

Card 1/2

Dependence of the ...

bl (Fig. 1) is to meet the threshold region of the surface ionization curve, and T_o is the threshold temperature. In the steady state, the flux of atoms n incident on a homogeneous surface is $n = N\left[C\exp\frac{-(l_+ - \psi_1)}{kT} + D\exp\frac{-(l_0 + \psi_2)}{kT}\right] =$

$$= N\left[C\exp-\frac{l'_+}{kT} + D\exp-\frac{l'_0}{kT}\right] \quad (4),$$

where N is the number of atoms per cm^2, C and D are constants slightly dependent on T, l_+ and l_o are the isothermal evaporation heats of ion and atom, respectively, in the absence of an electric field near the surface, and ψ_1 and ψ_2 are correction factors for such a field (E). The surface ionization coefficient is $= \frac{NC}{n}\exp\left(-\frac{l'_+}{kT}\right)$. If $\ln n = C' + \ln\frac{N}{N_1} + \frac{l'_+}{k}\left(\frac{1}{T_{o1}} - \frac{1}{T_o}\right)$ (6), where n_1 is a fixed flux of atoms, and T_{o1} is the relevant threshold temperature, and N/N_1 is slightly temperature-dependent, to

Card 2/5

Dependence of the

temperature dependence in $n = f(\frac{1}{T_0})$ is determined by the evaporation

heats of the ions from surface l_+. Thus one finds $N/N_+ = \frac{\sqrt{V}\,\varphi_w/(T_2 \quad T_0)}{T_0\sqrt{(\varphi_s \quad \varphi}}$

$\frac{T_2}{T_0}$ where φ_w is the work function of a pure tungsten surface which is

correct provided that $\varphi_{kmin} - \gamma \gg kT$, where φ_{kmin} is the minimum of the

tal work function. In order to verify these theoretical results experi-

tally, a cylindrical capacitor was placed into an unsoldered bulb filled

with Cs vapor and containing a tungsten thread 100 microns in diameter

and 14 cm long, which was fastened along its axis. Ions emitted from the

central portion of the thread were collected by the measuring cylinder.

The bulb was provided with taps containing metallic Cs and a Ba Ti getter.

The temperature of the thread was measured with an optical micropyrometer;

at low temperatures, it was determined from the filament current. The

temperature of the first thermostat was kept above that of the second which

was used to calculate the vapor pressure of Cs. The ion current was mea-

sured with a mirror galvanometer of a sensitivity limit of $3 \cdot 10^{-10}$ a/scale

unit. The temperature dependence of the ionization of Cs on W was studied

Card 3/5

S/057/62/032/002/01[illegible]/[illegible]
B124/B102

Dependence of the

In a Cs vapor pressure range of $9 \cdot 10^{-9}$ to $[illegible] \cdot 10^{-4}$ mm Hg with a change in the threshold temperature from 850 to 1430°K. Since the error due to the omission of the change in the degree of adsorption is about 4%. E[illegible] may be re-written as $\ln n \approx L + \frac{[illegible]}{k}\left(\frac{1}{T_0} \quad \frac{1}{T_0'}\right)$ [illegible]rofes or N I [illegible]

Professor A I. Gubanov and N D. Potekhina are thanked for discussion
There are 5 figures and 12 references: 5 Soviet and 7 non-Soviet The four most recent references to English language publications read as fo
W B Nattingham Proc. of the Fourth International Conference on Ionization Phenomena in Gases (Uppsala 17 21 August 1959) 1 486 R C Evans Proc Roy Soc A122. 604 1929; J B Taylor J Langmuir Phys Rev 44 423. 1933; T. J Killian Phys Rev 27 578. 1926

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F Ioffe AN SSSR Leningrad (Physicotechnical Institute imeni A F Ioffe Ac USSR Leningrad)

SUBMITTED. June 17 1961

Card 4/5

37071
S/057/62/032/004/017/017
B173/B102

26.1640 26.2312

AUTHORS: Zandberg, E. Ya., Ionov, N. I., Paleyev, V. I., and Tontegode, A. Ya.

TITLE: Determination of thermionic emission constants from energy distribution curves for thermoelectrons and positive ions

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 4, 1962, 503 - 516

TEXT: For plane and coaxially cylindrical electrodes with homogeneous work function, expressions ("ideal" retardation curves) for the emission current are derived on the assumption of Maxwellian energy distribution, and extended to electrodes with inhomogeneous work function (experimental retardation curves). As the areas of different work function (spots) cannot be localized, only a qualitative consideration is possible. The contact potential field of the spots is regarded first as being compensated by the external field (independent emission of individual spots) and then as not being compensated. The mean work function of the cathode was determined from the saturation current at given temperature. An apparent contact potential difference, which can be determined from the experimental

Card 1/2

PALEYEV, V.G., inzh.; KARTSIN, N.A., inzh.

Technical centers in plants. NTI no.11:23 '64.

(MIRA 18:1)

1. Byuro tekhnicheskoy informatsii Mebel'no-derevoobrabatuvayushchego kombinata imeni Yermana, g. Volgograd. (for Paleyev) 2. Byuro tekhnicheskoy informatsii zavoda "Krasnyy Oktyabr'" g. Volgograd (for Kartsin).

L 19018-65 EWG(j)/EWT(l)/EWP(e)/EWT(m)/EPF(c)/EPR/EPA(w)-2/EEC(t)/T/EWP(t)/EWP(b)/EWA(m)-2 Pq-4/Pr-4/Ps-4/Pab-10 IJP(c)/ASD(m)-3/AS(mp)-2/ASD(a)-5/ESD(gs) WH/WW/JD/JG

ACCESSION NR: AP4049048 S/0057/64/034/011/2048/2055

AUTHOR: Zandberg, E.Ya.; Paleyev, V.I. 57 B

TITLE: Surface ionization of In, K, Rb and Cs atoms and CsCl, RbCl and KCl molecules, with formation of positive ions 21

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.11, 1964, 2048-2055

TOPIC TAGS: surface ionization, graphite, indium, potassium, rubidium, cesium, potassium compound, rubidium compound, cesium compound

ABSTRACT: The ionization of In, K, Rb, Cs, CsCl, RbCl and KCl on a graphite surface was measured at temperatures up to 2300°K. Graphite was chosen for investigation because its electrical properties are intermediate between those of metals and semiconductors. Spectroscopic grade graphite was employed in the form of 60 x 1.2 mm strips from 200 to 700 micron thick, requiring up to 350 watts for heating. The temperature was measured with an optical pyrometer, and with a thermocouple at the lower temperatures. The thermionic emission of the graphite was stable, with a work function within about 1% of 4.40 V, after 3 hours heating at 2400°K. The atomic and molecular beams were produced by evaporation from a fused quartz oven and

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were directed through slits onto the graphite surface. The positive ions leaving the surface were detected with a low resolution mass spectrometer capable of resolving Rb^{85} and Rb^{87}. A vacuum of 3×10^{-7} mm Hg was maintained during the measurements. The surface ionization coefficients of the metals except potassium were independent of temperature above the threshold; the ionization coefficient of potassium decreased somewhat with increasing temperature. The behavior of the graphite surface with respect to the ionization of alkali metals was very similar to that of metal surfaces. The metal ion currents from the chloride molecules continued to increase with increasing temperature. In the case of CsCl, a plot of the logarithm of the ion current versus the reciprocal temperature consisted of two straight segments, of which that for the higher temperatures had the greater slope. The enhanced ion current at the higher temperatures is ascribed to increased dissociation of the molecules. The relation between ion current and temperature is discussed in terms of the theory of surface reactions on porous materials, and it is concluded that the difference between the heat of dissociation on the surface and the heat of sublimation from the surface lies between 0.8 and 1.0 eV for the different salts.
"The authors thank Prof.N.I.Ivanov and N.D.Potekhina for discussing the results of the work." Orig.art.has: 4 formulas and 9 figures.

L 19018-65

ACCESSION NR: AP4049048

ASSOCIATION: Fiziko-tekhnicheskiy institut im.A.F.Ioffe AN SSSR, Leningrad (Physicotechnical Institute, AN SSSR)

SUBMITTED: 10Mar64 ENCL: 00

SUB CODE: NP, SS NR REF SOV: 010 OTHER: 004

3/3

L 58350-65 EWT(1)/EWP(e)/EWT(m)/EWP(1)/EPF(n)-2/EWG(m)/EPA(w)-2/T/EWP(t)/EWP(b)
Pz-6/Pab-10 IJP(c) JD/JG/AT
ACCESSION NR: AP5018313 UR/0057/65/035/007/1308/1311
537.581

AUTHOR: Zandberg, E. Ya.; Paleyev, V. I.

TITLE: Inherent thermionic emission of lanthanum hexaboride and surface ionization of cesium atoms on it

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 7, 1965, 1308-1311

TOPIC TAGS: thermionic emission, inherent thermionic emission, surface ionization, cathode surface ionization, surface activation, atom ionization

ABSTRACT: An investigation was made of the surface ionization of Cs atoms on a cathode made of LaB_6. The use of compressed cathodes made it possible to exclude the influence of backing. Mass-spectrometric methods were used to permit observation of emission of the cathode and to make it possible to measure the temperature dependence of the thermoelectron current for use in determining the thermoelectron work function from the same surface section from which the ion current was taken. LaB_6 fods approximately 14 mm long and 0.8 x 0.8 mm in cross

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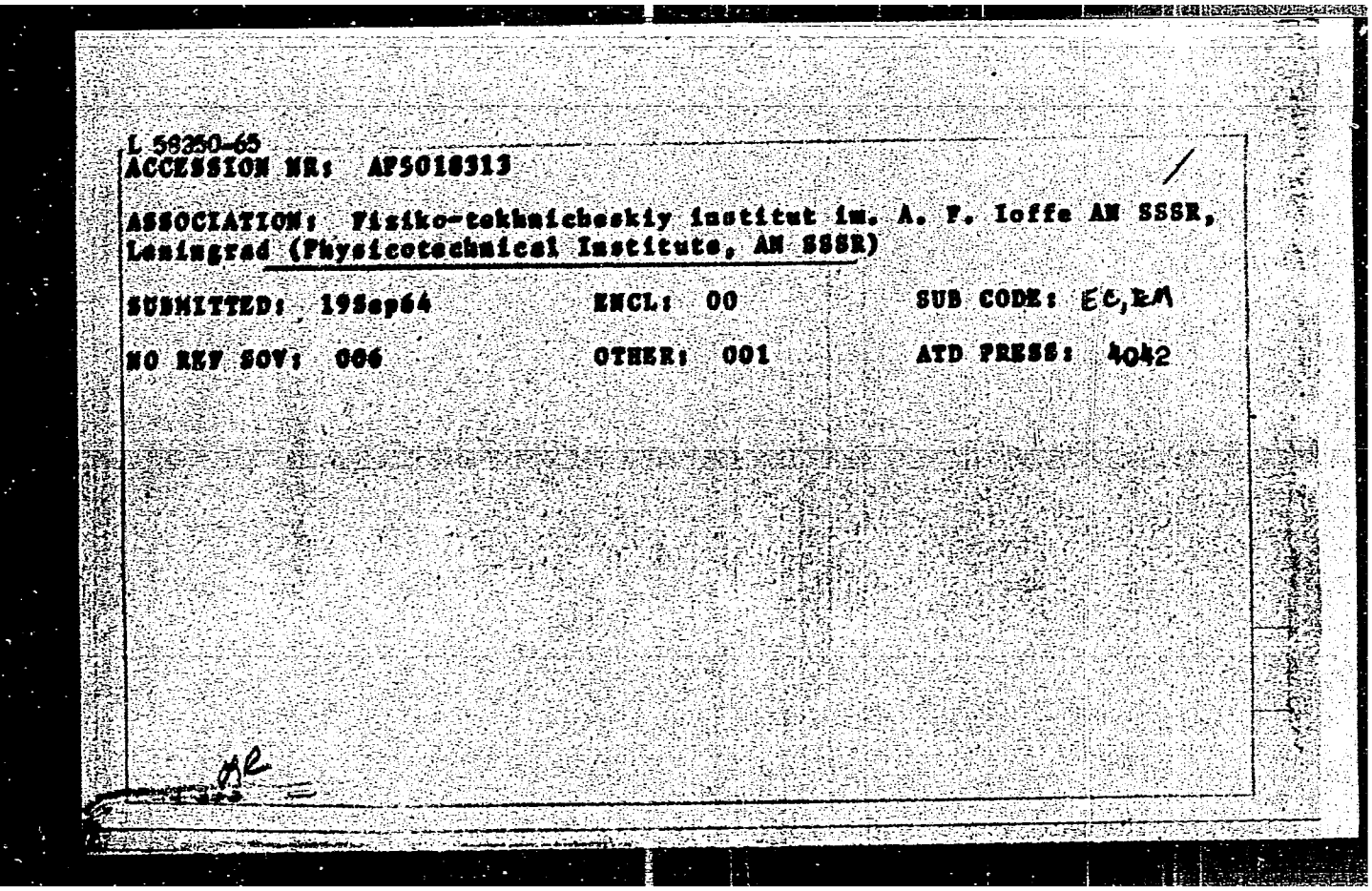
L 58350-65
ACCESSION NR: AP5018313

section were used. The electron and ion currents were emitted by a small section of the cathode's surface on which the temperature was assumed to be constant. The cathodes were activated by gradually raising the temperature to 1600—1700K. The following conclusions were drawn: 1) The activated cathode probably has foreign inclusions and nonactivated surface sections on which the work function may exceed 3.9 v. 2) At T > 1400K, simultaneously with the rise of Cs^+ current, the current of inherent thermoemission of LaO^+ also appears and at T ~ 1600K the current of La^+ appears. Since the ionization potential of lanthanum V_{La} = 5.61 v, it is probable that the main part of the lanthanum atoms evaporating from the surface are desorbed in the atomic state and not in the ionic. The intensity of the La^+ and LaO^+ lines depends on the pressure of the residual gases in the instrument. With increased pressure the intensity of the LaO^+ line increases. The evaporation of La and LaO can lead to a change of the emitter surface, which could be responsible for the rise of the Cs^+ ion current when the temperature is increased. Orig. art. has: 2 figures. [JA]

Card 2/3



L 58250-65
ACCESSION NR: AP5018313

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute, AN SSSR)

SUBMITTED: 19Sep64 ENCL: 00 SUB CODE: EC,EM

NO REF SOV: 006 OTHER: 001 ATD PRESS: 4042

L 45917-66 EWT(1) AT

ACC NR: AP6028620 SOURCE CODE: UR/0057/66/036/008/1459/1468

AUTHOR: Paleyev,V.I.; Karatayev,V.I.; Zandberg, E.Ya.

ORG: Physicotechnical Institute im. A.F.Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: On the applicability of the Saha-Langmuir formula to the description of the temperature dependence of the positive ion current incident to surface ionization of atoms on silicon

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 8, 1966, 1459-1468

TOPIC TAGS: surface ionization, silicon single crystal, work function, thermionic emission, contact potential, Richardson equation, ION CURRENT

ABSTRACT: The authors have previously investigated the surface ionization of Na, Li, and In on a (111) face of a silicon single crystal (ZhTF, 35, 2092, 1965) and obtained from their results, with the aid of the Saha-Langmuir formula, the value 4.9 V for the work function of the (111) face of silicon. This value of the work function is much greater than the value 4.0 V obtained from Richardson plots. Possible hypothesized reasons for this discrepancy are discussed briefly and most are found to be unconvincing. To clarify this situation, measurements of the work function by different techniques were undertaken. The measurements were made on the (111) face of a p-type silicon crystal with a resistivity of about 1000 ohm cm. Contact potential work

Card 1/2

functions were derived from retarding potential curves of the thermoelectron emission current and of the positive ion current from surface ionization of cesium by comparison with analogous curves obtained with tungsten and graphite emitters. The thermoelectron emission current was also measured, and work functions were derived both from Richardson plots and from the total emission current. The retarding potential curves showed that both the electrons and the positive ions had Maxwellian distributions with temperatures equal within the experimental error of 100° C to the temperature of the emitter. The contact potential work functions derived from the retarding potential curves were independent of temperature over the investigated range from 1100 to 1600°K and were equal, within the experimental error of about ± 0.1 V, to the value previously obtained with the aid of the Saha-Langmuir equation from the temperature dependence of the surface ionization. The total emission current work function was equal to the contact potential work function of 1600°K but had a temperature derivative of 6×10^{-4} V/degree. The Richardson plot gave the previous low value for the work function (4.07 ± 0.05 V). From the agreement between the contact potential and surface ionization work functions it is concluded that the Saha-Langmuir equation correctly describes the temperature dependence of the surface ionization of Na, Li, and In on silicon. Possible reasons for the low value of the Richardson plot work function are briefly discussed, but none is selected as the most likely. The authors thank N. I. Ionov and H. D. Potekhin for discussions. Orig. art. has: 5 formulas, 6 figures and 1 table.

SUB CODE: 20 SUBM DATE: 03Jan66 ORIG. REF: 011 OTH REF: 008

L 10674-66 EWT(l)/EWT(m)/ETC/EWG(m)/T/EWP(t)/EWP(b)/EWA(m)-2 IJP(c) JD/AT

ACC NR: AP5028326 SOURCE CODE: UR/0057/65/035/011/2092/2098

92 86 B

AUTHOR: Zandberg, E. Ya.; Paleyev, V.I.

ORG: Physico-technical Institute im. A.F.Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Surface ionization of atoms on silicon

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 11, 1965, 2092-2098

TOPIC TAGS: surface ionization, crystal surface, semiconductor crystal, silicon, alkali metal, indium, work function, thermionic emission, atom, particle beam

ABSTRACT: The thermoelectronic emission from and the ionization of Cs, K, Na, Li, and In on a (111) face of an n-type semiconducting silicon crystal (resistivity, 150 ohm cm) has been measured at temperatures from 1100 to 1600°K. The measurements were undertaken because surface ionization on semiconductors has not been thoroughly investigated and the measurements for silicon surfaces of N.G.Bam'kovskiy and B.N. Formozov (Izv. AN SSSR, seriya fizich.,28, 1522, 1964) are questionable, owing to the high atomic beam intensities that were employed. The 30 x 2 x 0.4 mm^3 silicon crystal was etched with a mixture of HNO_3 and HF and washed with boiling water; it was mounted on tantalum and heated electrically during the measurements. The temperature was measured with an optical pyrometer, the brightness temperatures being reduced to thermodynamic temperatures with the aid of the date of F.G.Allen (J.Appl.

Card 1/3 UDC: 537.57

L 10674-66

ACC NR: AP5028326

Phys., 28, 1510, 1957). The Cs atomic beams were obtained by reduction of the chloride with calcium; the remaining atomic beams were obtained by evaporating the metals. An iron oven was employed for the Li evaporation, and fused quartz ovens were used for the other metals. The atomic beam intensities at the crystal ranged from 10^7 atom/cm^{2}sec for Cs and K to 5×10^9 atom/cm^2 sec for In. The silicon crystal was outgassed and annealed at 1550-1600°K before the measurements. During the anneal the room temperature resistivity of the silicon crystal decreased by a factor 2 and thereafter remained stable. The length of entrance slit of the mass spectrometer was 1 mm; ions were accordingly admitted only from the central portion of the crystal where the temperature was uniform. The pressure in the stainless steel chamber was maintained below 10^{-7} mm Hg during the measurements. The thermoelectronic work function, derived from Richardson plots, was found to be 4.04 ± 0.05 V; it was independent of the field strength at the crystal surface over the range from 75 to 1250 V/cm. No temperature dependence of the surface ionization currents of Cs and K was found in the temperature range investigated; the surface ionization thresholds for these metals occur at lower temperatures. The surface ionization currents of Na, Li, and In varied with temperature in accord with the Saha-Langmuir equation, and all three metals gave the same value 4.9 V for the work function, within the experimental error of less than 0.1 V. Possible reasons are discussed for the large discrepancy between the thermoelectronic and surface ionization work functions and no satisfactory explanation is found. Further investigation is necessary. The authors

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L 10674-66

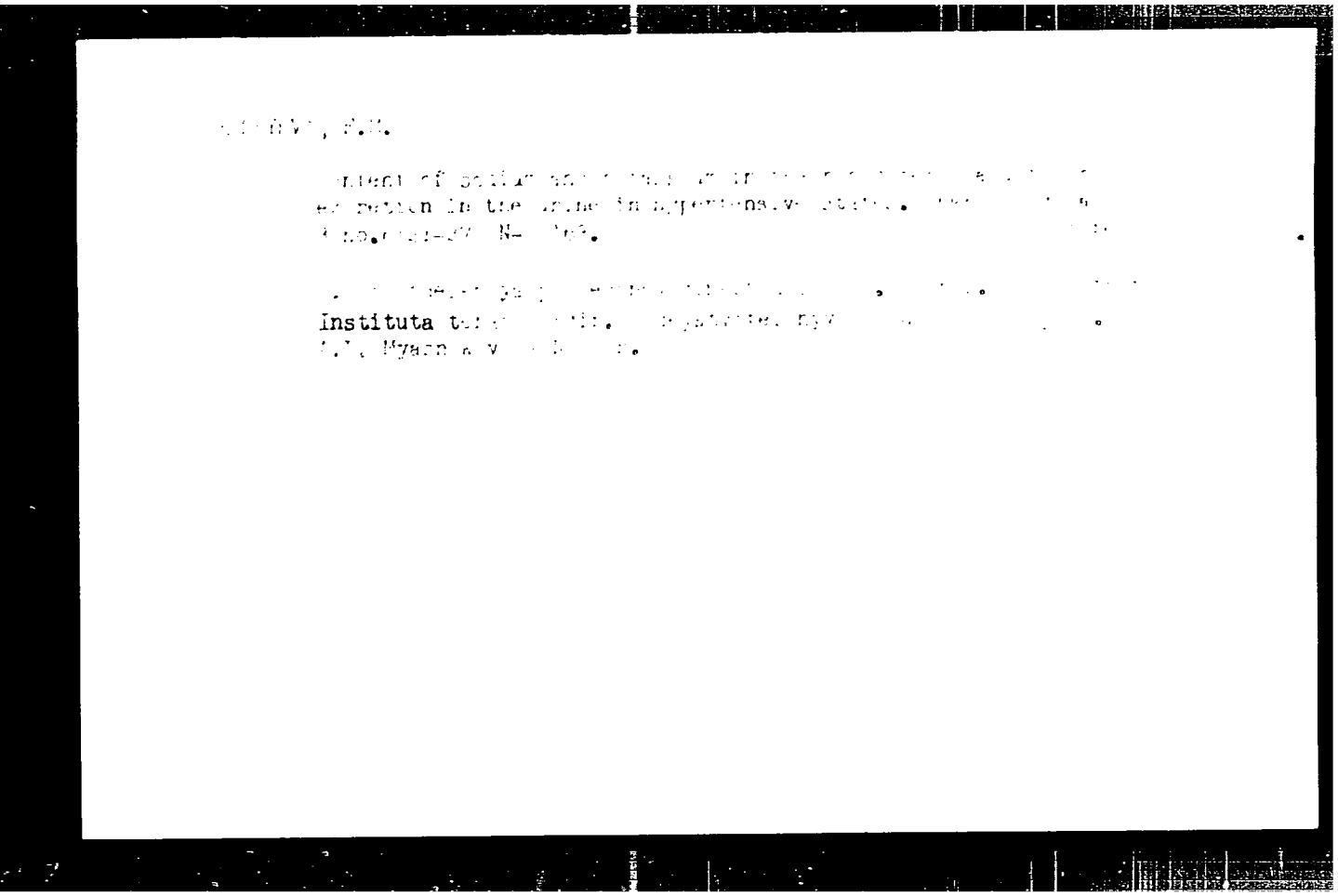
ACC NR: AP5028326

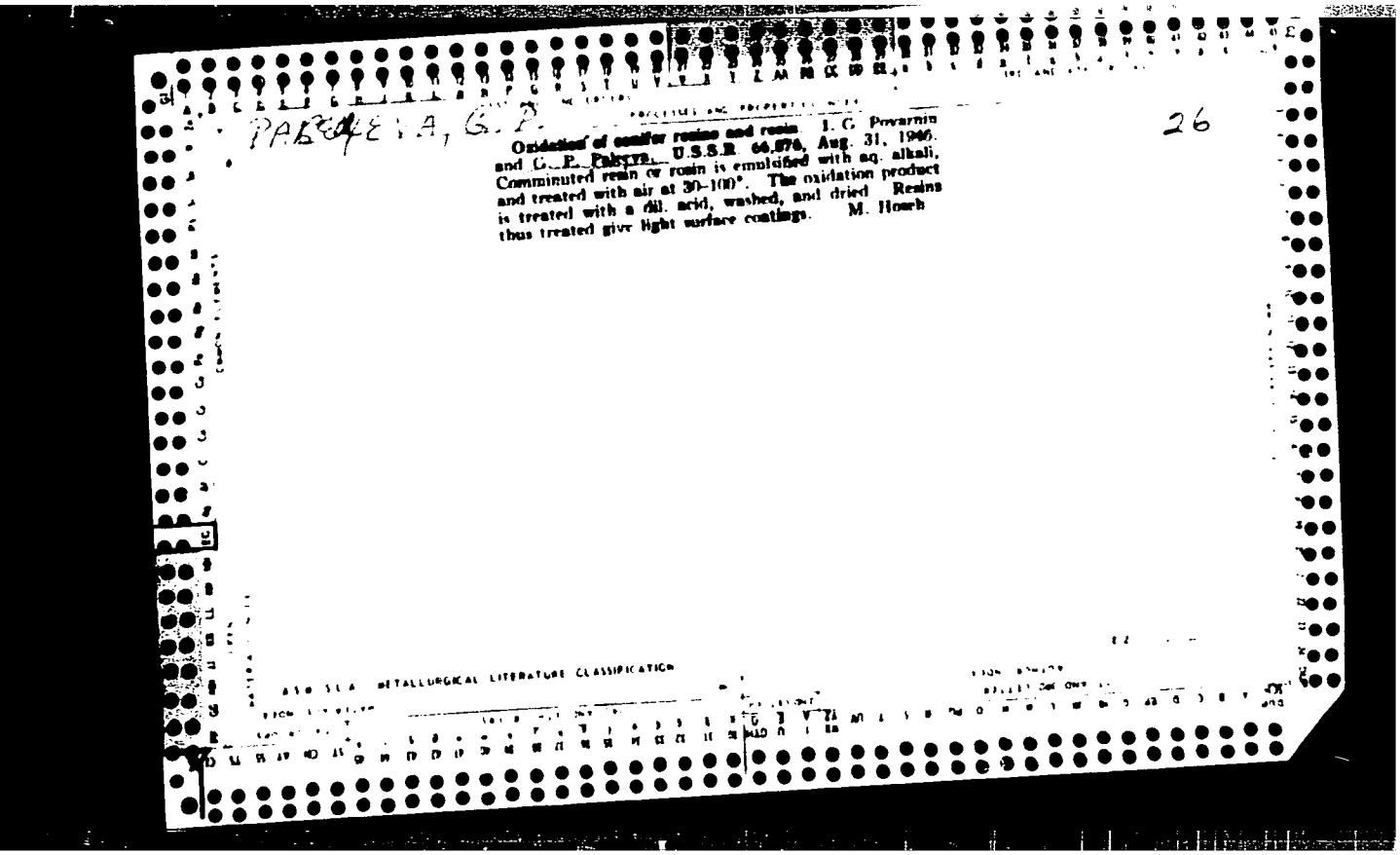
6

thank N.D.Potekhin and N.I.Ionov for discussing the work. Orig. art. has: 1 formula and 4 figures.

SUB CODE: 20 SUBM DATE: 29Mar65/ ORIG. REF: 007 OTH REF: 006

Card 3/3





PA 64E1A, G.P.

26

Oxidation of conifer resins and resin. I. G. Povarnin and G. P. Pakeva. U.S.S.R. 66,876, Aug. 31, 1946. Comminuted resin or rosin is emulsified with aq. alkali, and treated with air at 30–100°. The oxidation product is treated with a dil. acid, washed, and dried. Resins thus treated give light surface coatings. M. Hoarh

ASTIA METALLURGICAL LITERATURE CLASSIFICATION

KHODOROV, Ye.I.; PALEYEVA, I.I., redaktor

[Cement kilns] Pechi tsementnoi promyshlennosti. Pod red. I.I. Paleeva. Moskva, Rometroiizdat, 1950 (MLRA 9:3)
(Cement kilns)

PALEYEVA, I.Ye.; SHEVERDINA, N.I.; ABRAMOVA, L.V.; KOCHESHKOV, K.A.

Chemical composition of the "Blaise reagent". Dokl. AN SSSR 159 no.3:609-611 N '64 (MIRA 18:1)

1. Fiziko-khimicheskiy institut imeni L. Ya. Karpova 2. Chlen korrespondent AN SSSR (for Kocheshkov).

L 17714-66 EWP(j)/EWT(m)/T RM
ACC NR: AP6003405 (A) SOURCE CODE: UR/0190/66/008/001/0008/0010

AUTHORS: Paleyev, O. A.; Sheverdina, N. I.; Sogolova, T. I.; Paleyeva, I. Ye.; Kargin, V. A.; Kocheshkov, K. A.

ORG: Physico-Chemical Institute im. L. Ya. Karpov (Fiziko-khimicheskiy institut)

TITLE: Application of $(n\text{-}C_3H_7)_2Cd$, $n\text{-}C_3H_7CdCl$ and $n\text{-}C_3H_7CdI$ in polymerization of ethylene

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 1, 1966, 8-10

TOPIC TAGS: polyethylene plastic, organocadmium compound, polymerization catalyst

ABSTRACT: In this work, $(n\text{-}C_3H_7)_2Cd$ (I), $n\text{-}C_3H_7CdCl$ (II), and $n\text{-}C_3H_7CdI$ (III) in mixtures with $TiCl_4$ were investigated as polymerization catalysts for propylene, substituting for the generally used organic aluminum compounds. This is an expansion of the earlier published study by the authors on organic cadmium compounds as components of mixed polymerization catalysts (Vysokomolek. soyed., 5, 846, 1963). II and III are white solids insoluble in n-hexane (solvent used in this polymerization), have poorly developed surface structure and, therefore, are

Card 1/2 UDC: 66.095.26+678.742

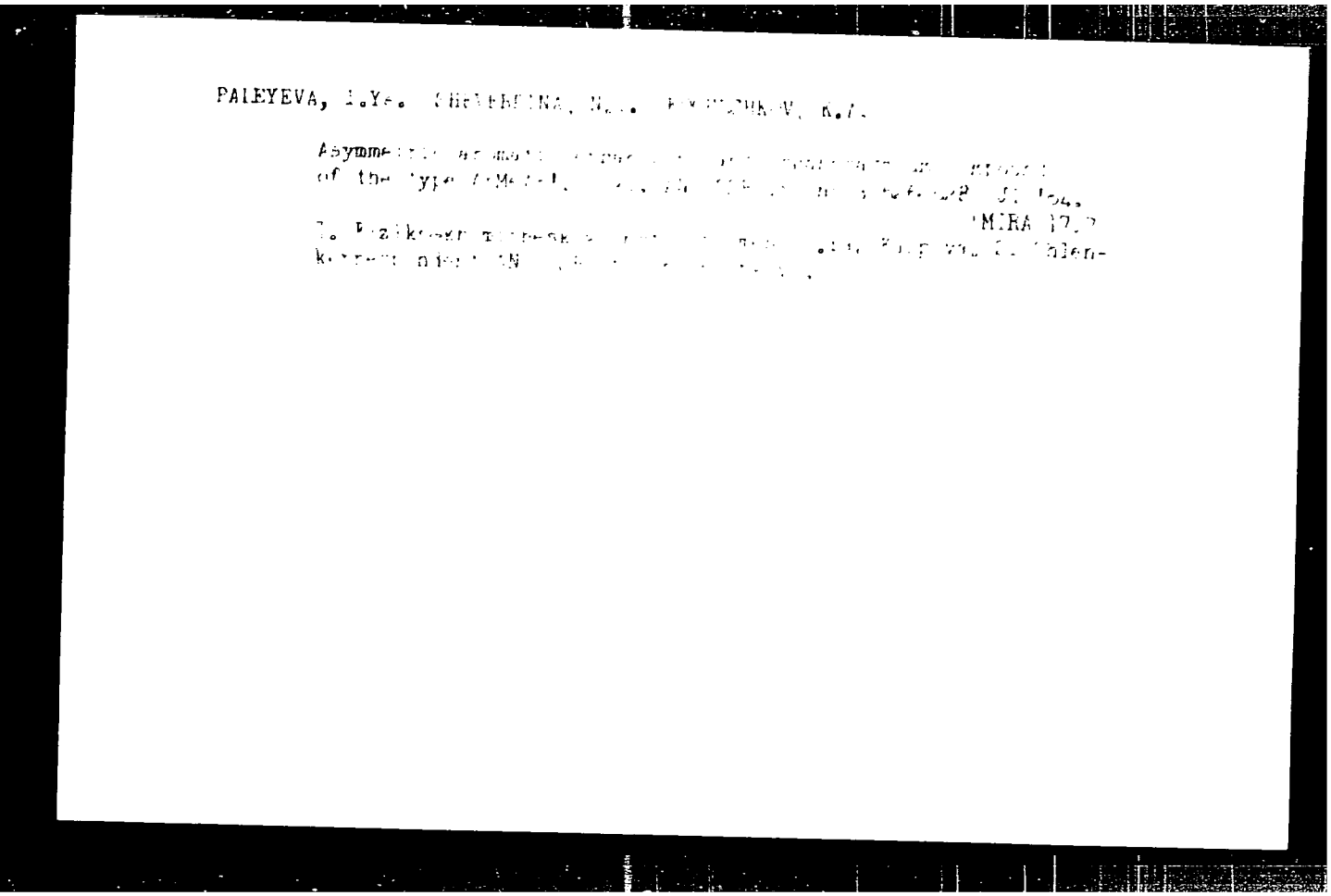
L 27714-66
ACC NR: AP6003405

2

inefficient as catalysts. I is readily soluble in organic solvents and was found to be a very effective catalyst at very low concentrations (1 g mole per 11 kg of polyethylene). The product prepared with I (softening point 137—139C) has high tensile strength (4400—4500 kg/cm^2), and may serve in the preparation of strong oriented films and fibers. Orig. art. has: 1 table.

SUB CODE: 07/ SUBM DATE: 28Jan65/ ORIG REF: 004/ OTH REF: 001

Card 2/2 mat



PALEYEVA, L.Ye. [illegible]

Asymme[illegible]
of the type [illegible]
'MIRA 17,'

[illegible]

SHEVERDINA, N.I.; PALEYEVA, I. Ye.; TAYTSEVA, N.A.; KOCHESKHKOV, K.A.

Preparation of R_2Zn-type organozinc compounds in the aromatic, heterocyclic, and aliphatic-aromatic series by means of the Grignard reagent. Dokl. AN SSSR 155 no. 3:623-625 Mr '64. (MIRA 17:5)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. 2. Chlen-korrespondent AN SSSR (for Kocheshkov).

SHEVERDINA, N.I.; PALEYEVA, I.Ye.; DELINSKAYA, Ye.D.; KOCHESHKOV, K.A.

New organocadmium compounds of the Ar_2Cd class, and their dioxanates. Dokl. AN SSSR 143 no.5:1123-1126 Ap 62.
(MIRA 15:4)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. 2. Chlen-korrespondent AN SSSR (for Kocheshkov).
(Cadmium organic compounds) (Dioxanate)

PALEYEVA, I YE.

KOCHESHKOV, Nesmeyanov A., Corresponding Member, Academy of Sciences USSR, SHEVERDINA, N. I., and PALEYEVA, I. YE., all at Scientific Research Physico-Chemical Institute imeni L. Ya. Karpov - "Research in the realm of organometallic compounds of zinc and cadmium" (Morning session 28 Sep 62) [Only KOCHESHKOV is included in the List of Participants in the Colloquium. KOCHESHKOV is also scheduled as President of the Morning session 25 Sep 62.]

FEITOV, Oleg A., Faculty of Chemistry, Moscow State University - "On the synthesis of optical active alkylmagnesium and alkyllithium compounds by means of mercuriorganic compounds" (Morning session, 25 Sep 62)

report to be submitted for the Intl. Colloquium on Organometallic Derivatives (CNRS) Paris France, 24-28 Sep 1962.

L 12436-63 EWP(j)/EPF(c)/EWT(m)/BDS ASD Pc-4/Pr-4 RM/WW

ACCESSION NR: AP3001156 S/0190/63/005/006/0846/0849

17
67

AUTHOR: Kocheshkov, K. A.; Kargin, V. A.; Sheverdina, N. I.; Sogolova, T. I.; Paleyeva, I. Ye.; Paleyev, O. A.

TITLE: Polymers of ethylene prepared by means of organocadmium-titanium tetrachloride mixtures

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 6, 1963, 846-849

TOPIC TAGS: polymers, ethylene, organocadmium compounds, titanium tetrachloride, polyethylene, dioxanates

ABSTRACT: The polymerization of ethylene was conducted in a reactor filled with ethylene gas to which were added 300 ml of hexane and from 0.025 to 0.007 Mol/liter of an organic cadmium compound, cooled to -30C, and followed by dropwise addition, under constant stirring, of a titanium tetrachloride solution in hexane, in a ratio C-Me/ $TiCl_4$ = 1/1. The highest yields were obtained with $(n\text{-}C_4H_9)_2Cd$ and $(p\text{-}CH_3C_6H_4)_2Cd$, and it was observed that complexes of the cadmium compounds with dioxane were equally effective. In comparing the polymerization processes conducted with diphenylcadmium and phenylcadmiumiodide it was found that the yield of an essentially similar polyethylene amounted in the

Card 1/2

latter case to only one-half of the one obtained with diphenylcadmium, thus revealing the equivalency of the same radicals in the organometallic component in the catalyst and the essential role played by their number. The obtained polyethylenes were essentially white powders. Thermomechanical studies were conducted on films obtained at 180-185C and 90-100 atm, which were stretched in one direction. It was found that the polymers possessed sufficiently high values of recrystallization stress and tensile strength and high stretch and softening point values, the latter in the 130-135C range. Orig. art. has: 2 tables.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-Chemical Institute)

SUBMITTED: 25Nov61 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 006 OTHER: 005

S/064/62/000/010/001/002
D214/D307

AUTHORS: Sheverdina, N.I., Abramova, L.V., Paleyeva, I.Yc. and Kocheshkov, K.A. Corresponding Member of the AS USSR

TITLE: Preparation of organic salts of di-n-butyltin

PERIODICAL: Khimicheskaya promyshlennost', no. 10, 1962, 7-8

TEXT: This paper reports a new method of preparing organic salts of di-n-butyltin, suitable for application on an industrial scale. The interaction of $SnCl_4$ with $n\text{-}C_4H_9MgCl$ in $(n\text{-}C_4H_9)_2O$ forms $(n\text{-}C_4H_9)_2SnCl_2$ which on treatment with 30% ethanolic NaOH gives a precipitate of $(n\text{-}C_4H_9)SnO$. A slow addition of this oxide (1.25 moles) to 2.5 moles of a warm organic acid (60-70°C) gives, after 2 hours, the organic salt (95-98% yields). In this way the dicaprylate, dilaurate, disteanate, and dioleate of di-n-butyltin were prepared. The dimaleate and diacetate were obtained by adding 1 mole of the oxide to 1 mole of the corresponding anhydride dissolved in toluene (yields > 95%). There is 1 table.

Card 1/1

5(2, 3)

AUTHORS: Sheverdina, N. I., Paleyeva, I. Ye., Delinskaya, Ye. D., Kocheshkov, K. A., Corresponding Member AS USSR

SOV/20-125-2-30/64

TITLE: Crystalline Cadmium-organic Compounds of the RCdX-Class in the Aliphatic Series (Kristallicheskiye kadmiyorganicheskiye soyedineniya klassa RCdX v alifaticheskom ryadu)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 2, pp 348-350 (USSR)

ABSTRACT: Solutions in ether of the compounds mentioned in the title, obtained from exchange reactions of cadmium salts and Grignard's reagent, are fairly extensively used as an excellent reagent for ketone production (Ref 1). When dissolved in ether, the cadmium-organic compounds are considered as dialkyl compounds (Ref 2). However, cadmium-organic compounds of a mixed type had never been isolated in an individual crystalline state. The authors were the first to succeed in effecting this isolation after the reaction between dialkyl cadmium and the cadmium salts on the equation $R_2Cd + CdX_2 \longrightarrow 2RCdX$ (I). The reaction occurs in an

Card 1/3

Crystalline Cadmium-organic Compounds of the RCdX-Class in the Aliphatic Series

analogous way in the aromatic series as well. For this purpose dehydrated cadmium halogenides in absolute ether were employed. Contrary to an analogous reaction described by the authors on an earlier occasion (zinc-organic compounds, Ref 3), they had in this case - due to the ether insolubility of the cadmium halogenides - to employ the appropriate suspensions. The mixed cadmium-organic compounds (obtained for the first time) are white, finely crystalline powders that do not melt, but which soften above 100°. They are energetically decomposed by water and alcohol. Atmospheric oxygen oxidizes them, but does not cause their spontaneous ignition. With the exception of n-butyl-cadmium bromide, which is soluble in ether, all the compounds of the ethyl series are insoluble in aromatic hydrocarbons, hexane, and ether. Unlike in the RZnX (Ref 3), no stable complexes (e. g. with ether or dioxane) of the compounds concerned have been observed so far. The interaction of the individual cadmium-organic compounds described with the halogen anhydrides of the acids occurs on the equation

Crystalline Cadmium-organic Compounds of the RCdX-Class in the Aliphatic Series

SOV/20-125-2-30/64

$C_2H_5CdX + C_6H_5COX \longrightarrow C_6H_5CO \cdot C_2H_5$ (II).

In the experimental part, the usual data are presented. There are 4 references, 1 of which is Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L.Ya. Karpova (Physico-Chemical Institute imeni L. Ya. Karpov)

SUBMITTED: December 29, 1958

Card 3/3

RABOTNOVA, I.L., PLEKHOVA, V.G.; PALEYEVA, M.A.; SIENDEKOVA, L.V.

Causes of a decrease in redox potential in cultures of mi[illegible]-organisms. Mikrobiologiia 32 no.6:954-960 N-D '63 (MIRA 17:1)

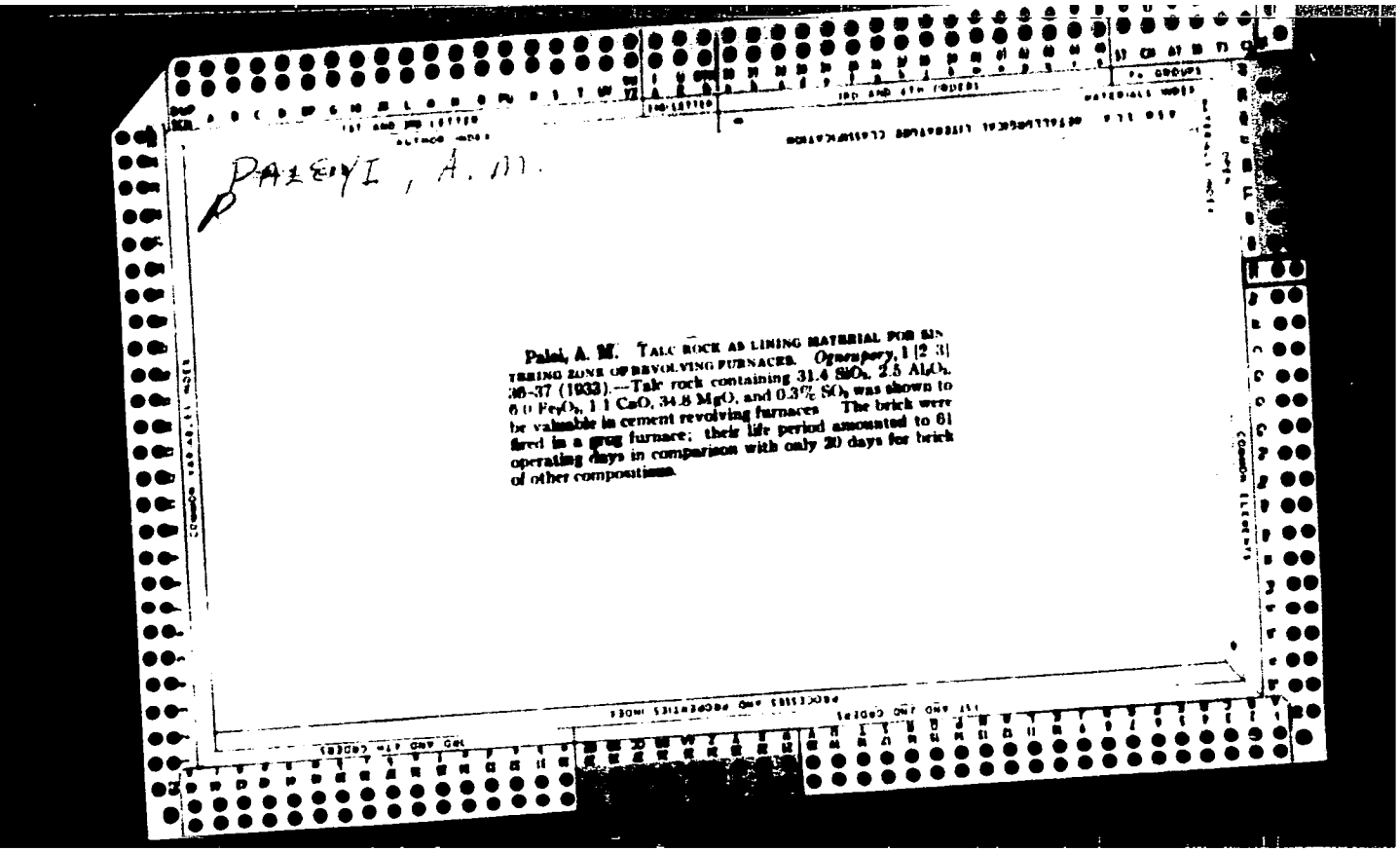
1. Biologicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta imeni M.V. Lomonosova.

PALEYEVA, Yevdokiya (g.Nakhodka); LESKOV, S.; SHITS, O. (s.Nizhnyaya Omra, Komi ASSR)

Readers reply to Valia Mitiukova. Obshchestv.pit. no.4:30-31 Ap '61. (MIRA 14:3)

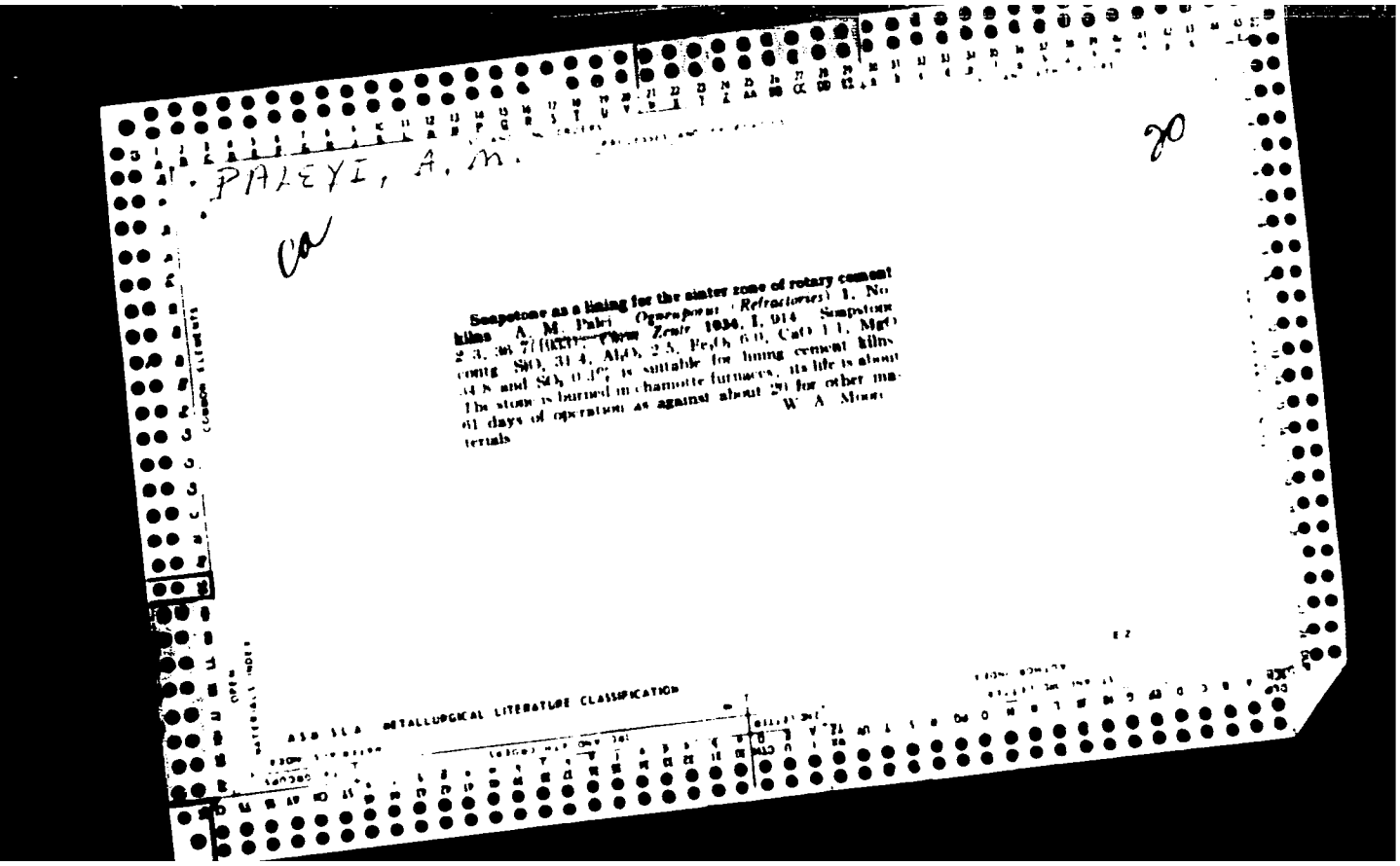
1. Zaveduyushchiy proizvodstvom stolovoy No.27, g.Khabarovsk (for Leskov).

(Cooking schools)



PALEVI, A. M.

Palai, A. M. TALC ROCK AS LINING MATERIAL FOR SINTERING ZONE OF REVOLVING FURNACES. *Ogneupory*, 1 [2-3] 36-37 (1933).—Talc rock containing 31.4 SiO_2, 2.5 Al_2O_3, 6.0 Fe_2O_3, 1.1 CaO, 34.8 MgO, and 0.3% SO_3 was shown to be valuable in cement revolving furnaces. The brick were fired in a grog furnace; their life period amounted to 61 operating days in comparison with only 20 days for brick of other compositions.



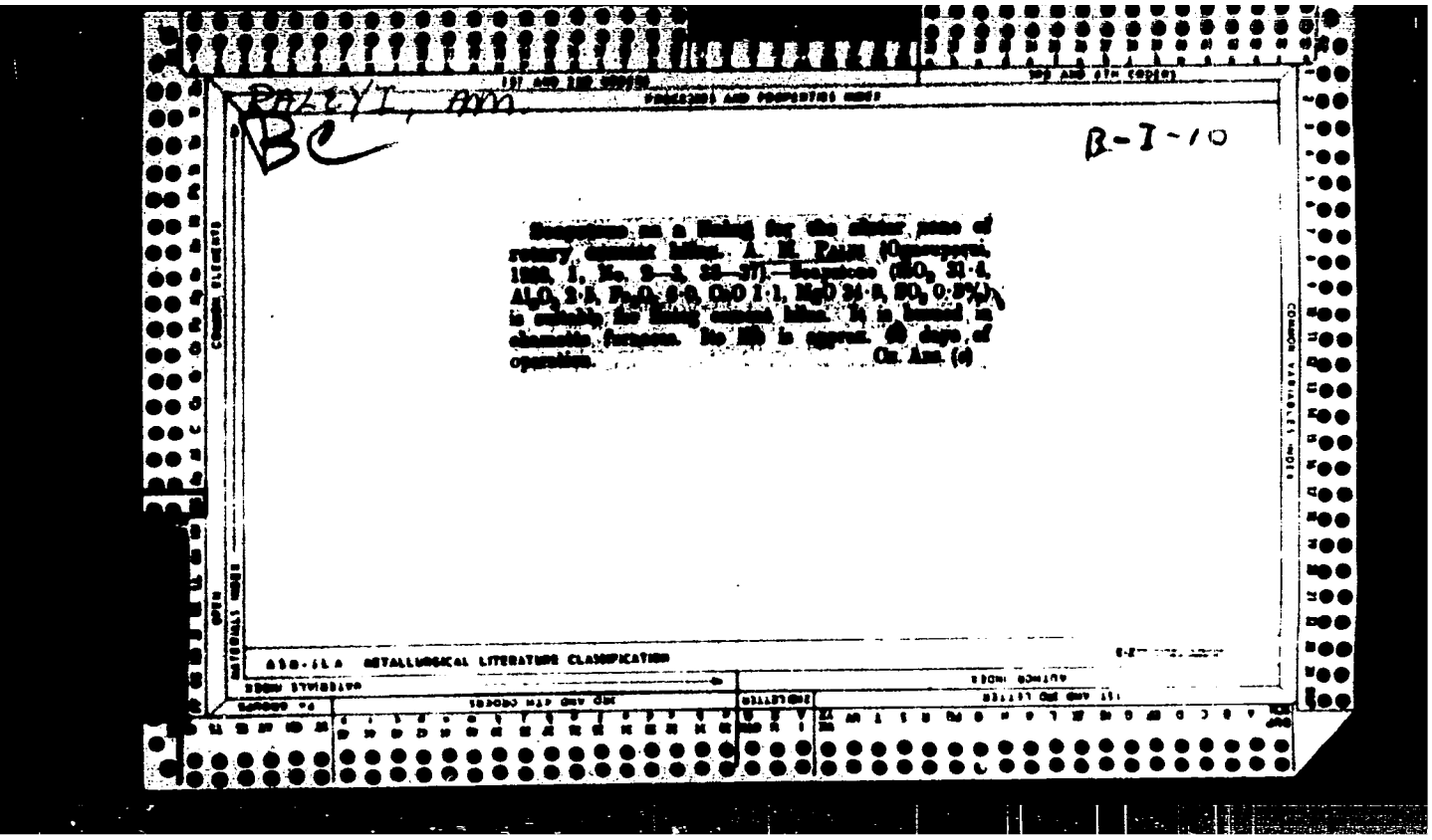
PALEYI, A. M.

Ca

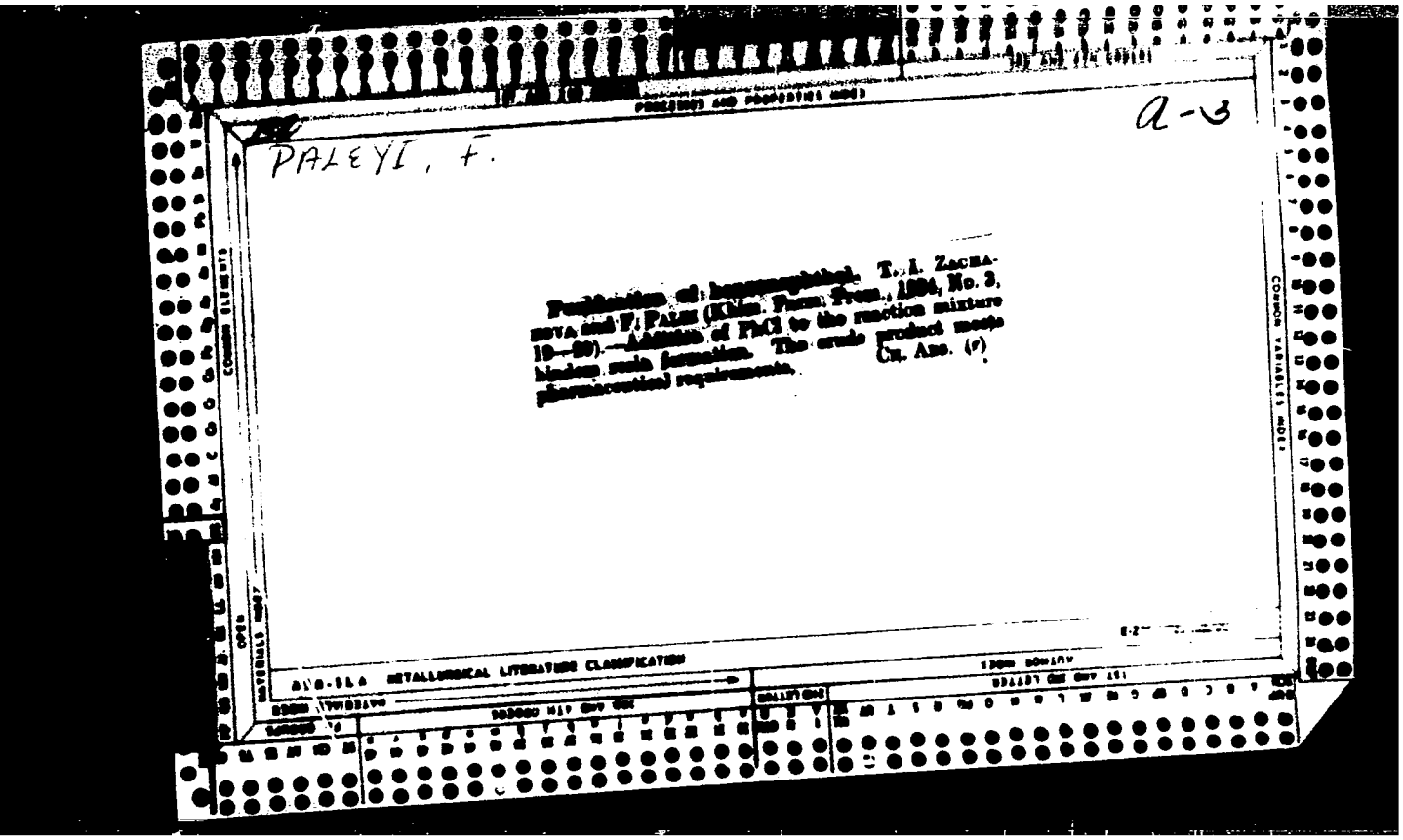
20

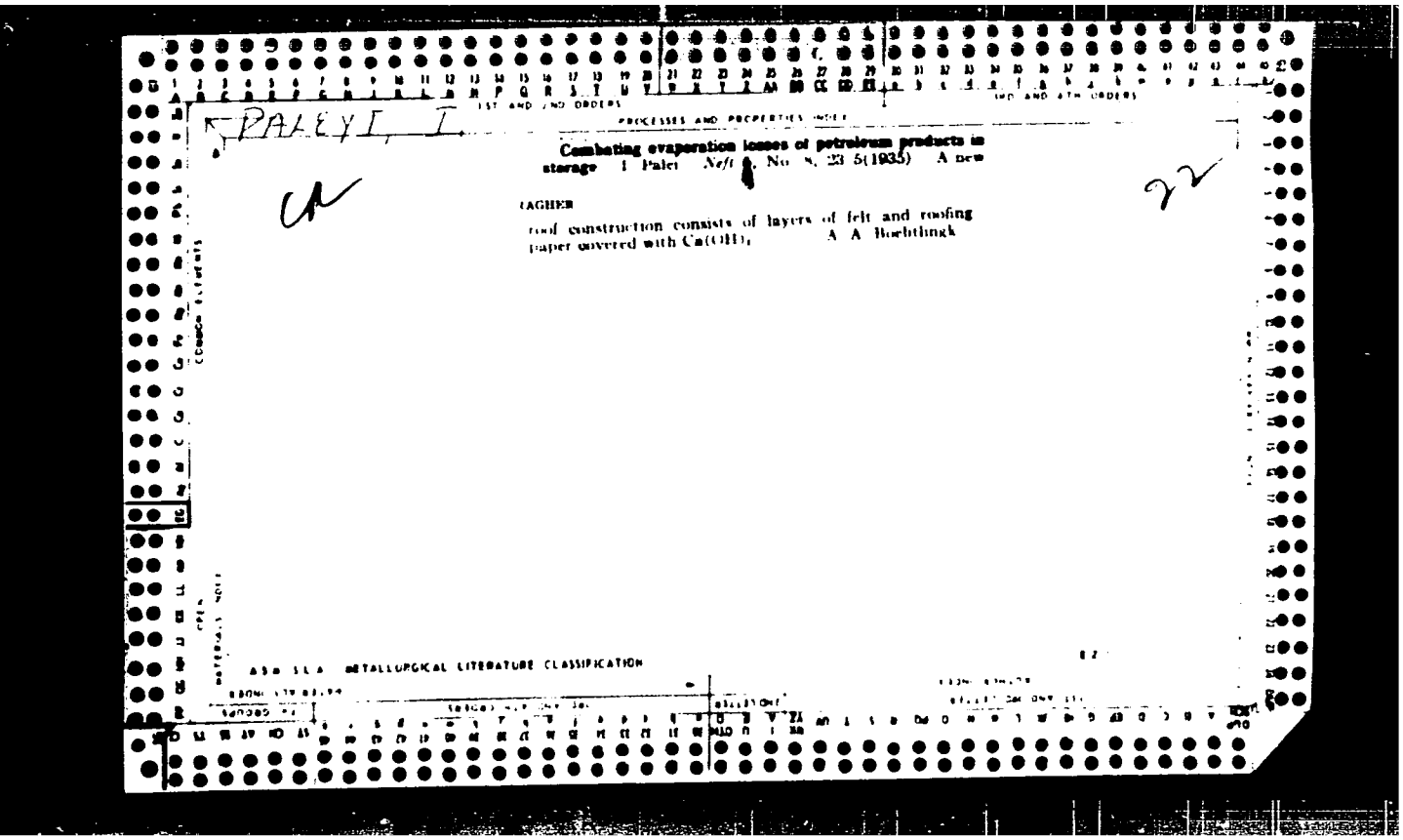
Soapstone as a lining for the sinter zone of rotary cement kilns. A. M. Paleyi. *Ogneupory* (*Refractories*) 1, No. 2-3, 86-7(1933).—From *Zentr.* 1934, I, 914. Soapstone containing SiO$_2$ 31.4, Al$_2$O$_3$ 2.5, Fe$_2$O$_3$ 6.0, CaO 1.1, MgO 14.8 and SO$_3$ 0.1% is suitable for lining cement kilns. The stone is burned in chamotte furnaces, its life is about 61 days of operation as against about 20 for other materials. W. A. Mogg

A58 S1A METALLURGICAL LITERATURE CLASSIFICATION



B-I-10





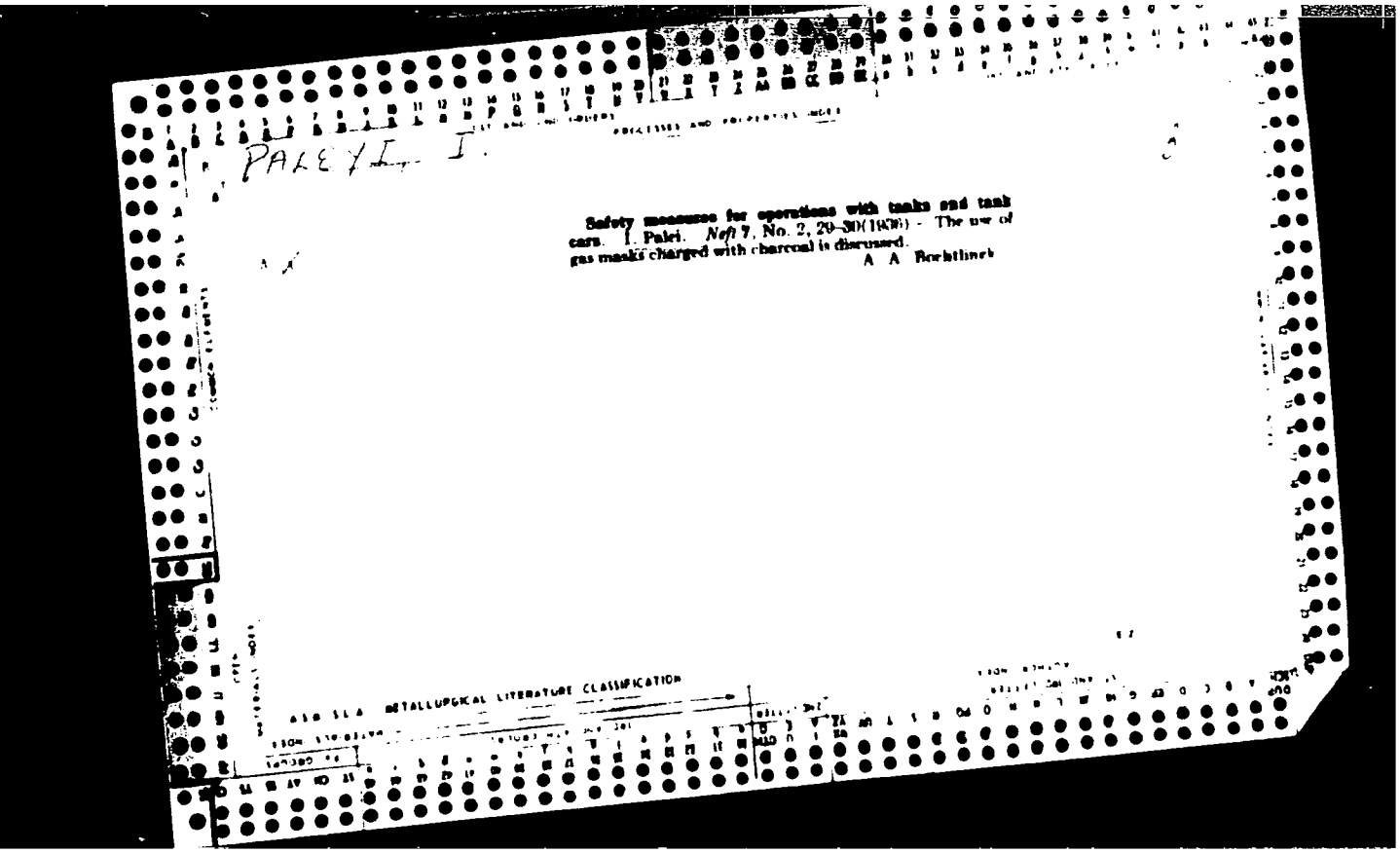
PALEY I. I.

Combating evaporation losses of petroleum products in storage I Palei *Neft*. No. 5, 23 5(1935) A new

CAGHER

roof construction consists of layers of felt and roofing paper covered with $Ca(OH)_2$ A A Berlthingk

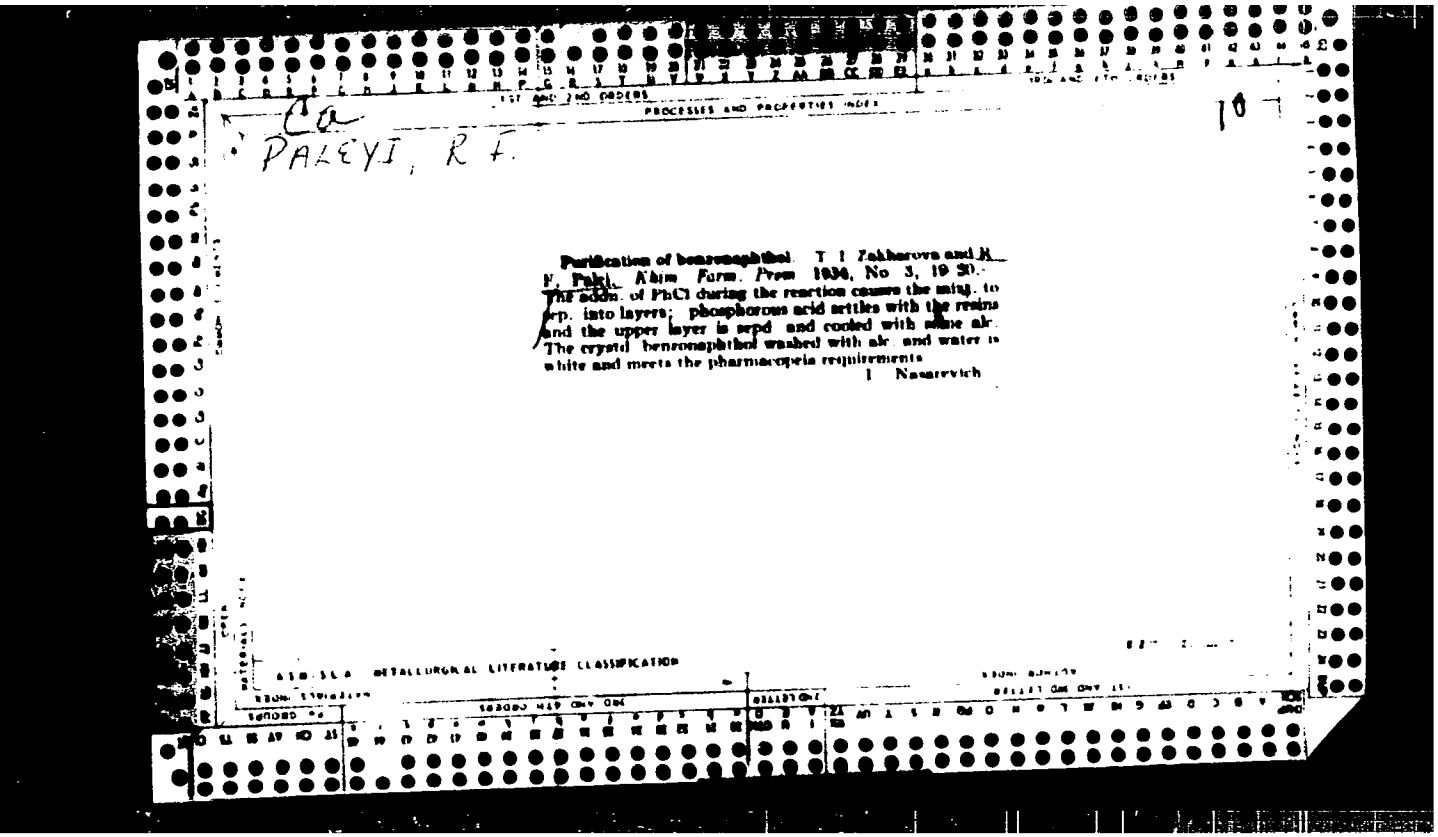
ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



PALEY I.

Safety measures for operations with tanks and tank cars. I. Paley. *Neft* 7, No. 2, 29–30(1938). - The use of gas masks charged with charcoal is discussed.
A. A. Berlatzky

A10 S1A METALLURGICAL LITERATURE CLASSIFICATION



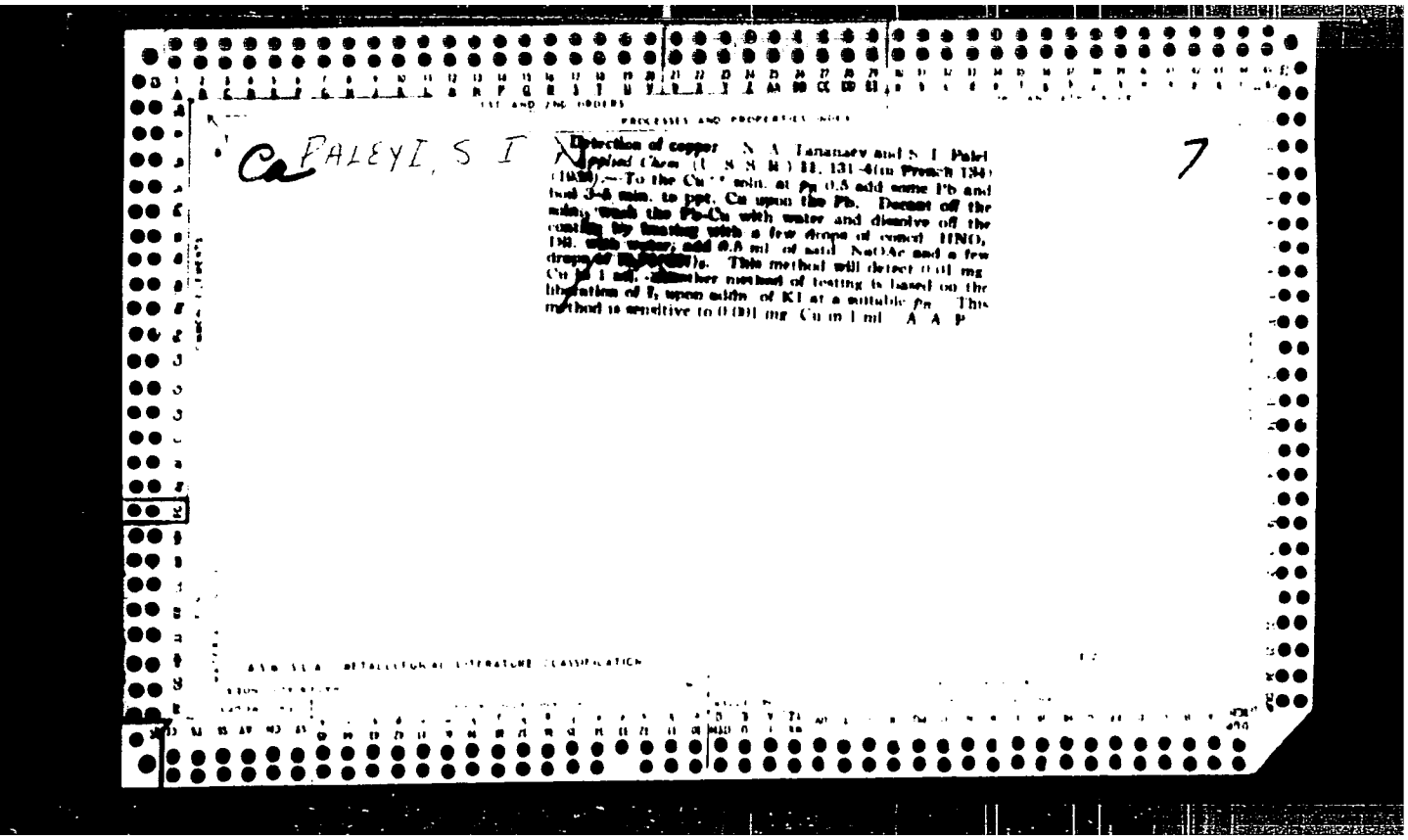
Ca

PALEYI, R F.

10

Purification of benzonaphthol. T. I. Zakharova and R. F. Paleyi. *Khim. Farm. Prom.* 1934, No. 3, 19-20.—The addn. of PhCl during the reaction causes the mixt. to sep. into layers; phosphorous acid settles with the resins and the upper layer is sepd. and cooled with some air. The crystal. benzonaphthol washed with air and water is white and meets the pharmacopeia requirements.

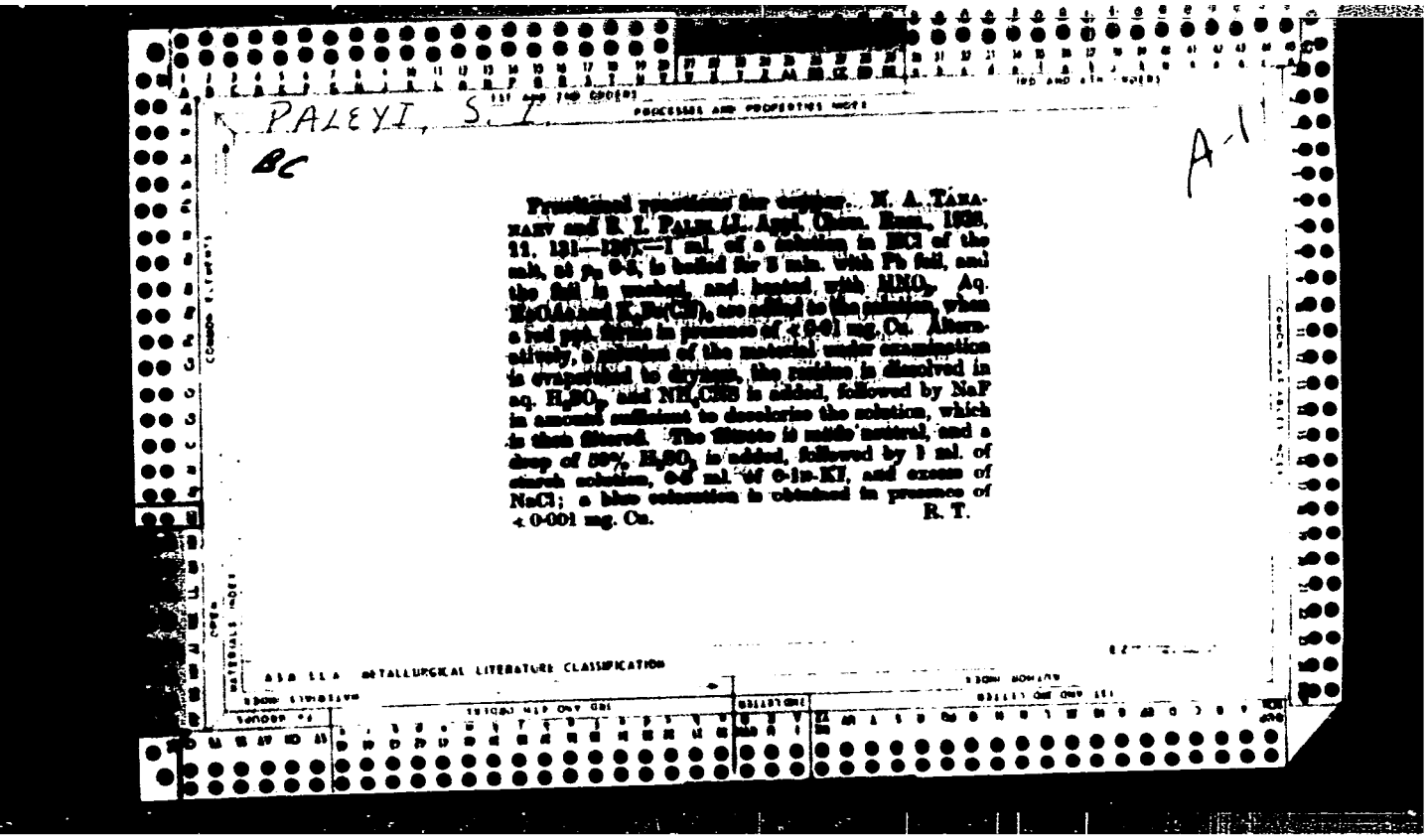
I. Nasarevich



Ca PALEY I, S I

7

Detection of copper. N. A. Tananaev and S. I. Paley. Zavodskaya Lab. (U.S.S.R.) 11, 131-4 (in French 134) (1945).—To the Cu⁺⁺ soln. at pH 0.5 add some Pb and heat 3-5 min. to ppt. Cu upon the Pb. Decant off the soln., wash the Pb-Cu with water and dissolve off the coating by heating with a few drops of concd. HNO₃, 1M. With water, add 0.5 ml. of satd. NaOAc and a few drops of [illegible]. This method will detect 0.01 mg. Cu in 1 ml. Another method of testing is based on the liberation of I, upon addn. of KI at a suitable pH. This method is sensitive to 0.001 mg. Cu in 1 ml. A. A. P.



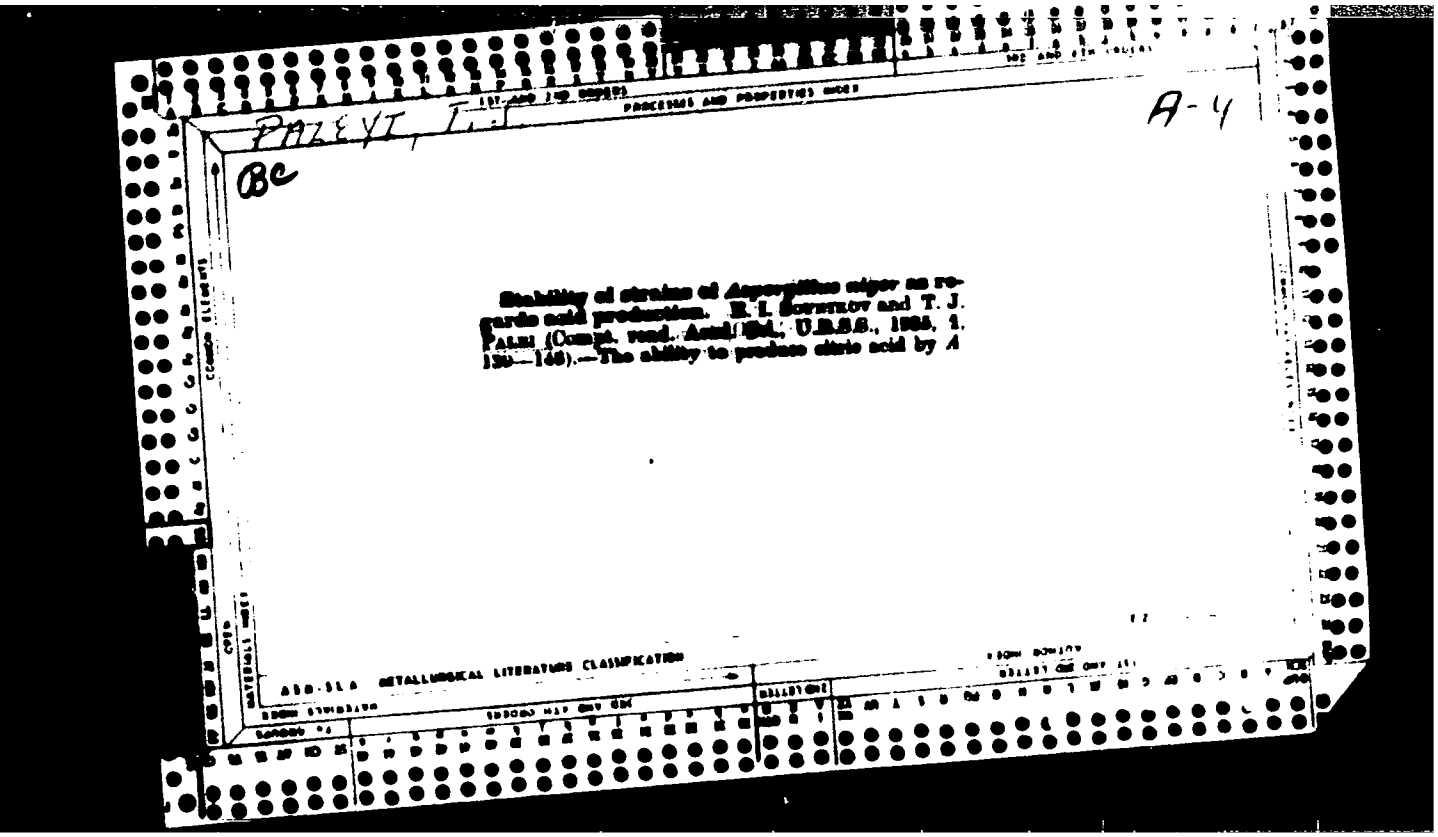
PALEYI, S. I.

BC

A-1

Provisional quantitative fire assays. M. A. TANARAEV and S. I. PALEYI (J. Appl. Chem. Russ., 1938, 11, 131—139).—1 ml. of a solution in HCl of the salt, at p_H 0·5, is boiled for 3 min. with Pb foil, and the foil is washed, and heated with HNO_3, Aq. K_2O_4 and $K_4Fe(CN)_6$ are added to the solution, when a red ppt. forms in presence of < 0·01 mg. Cu. Alternatively, a residue of the material under examination is evaporated to dryness, the residue is dissolved in aq. H_3PO_4 and NH_4CNS is added, followed by NaF in amount sufficient to decolorise the solution, which is then filtered. The filtrate is made neutral, and a drop of 50% H_2SO_4 is added, followed by 1 ml. of starch solution, 0·2 ml. of 0·1*N*-KI, and excess of NaCl; a blue coloration is obtained in presence of < 0·001 mg. Cu. R. T.

A 5 B 1 L A METALLURGICAL LITERATURE CLASSIFICATION



Stability of strains of *Aspergillus niger* as regards acid production. R. L. Govorukov and T. J. Pazevi (Compt. rend. Acad. Sci. U.R.S.S., 1955, 1, 139—146).—The ability to produce citric acid by *A*

1ST AND 2ND ORDERS

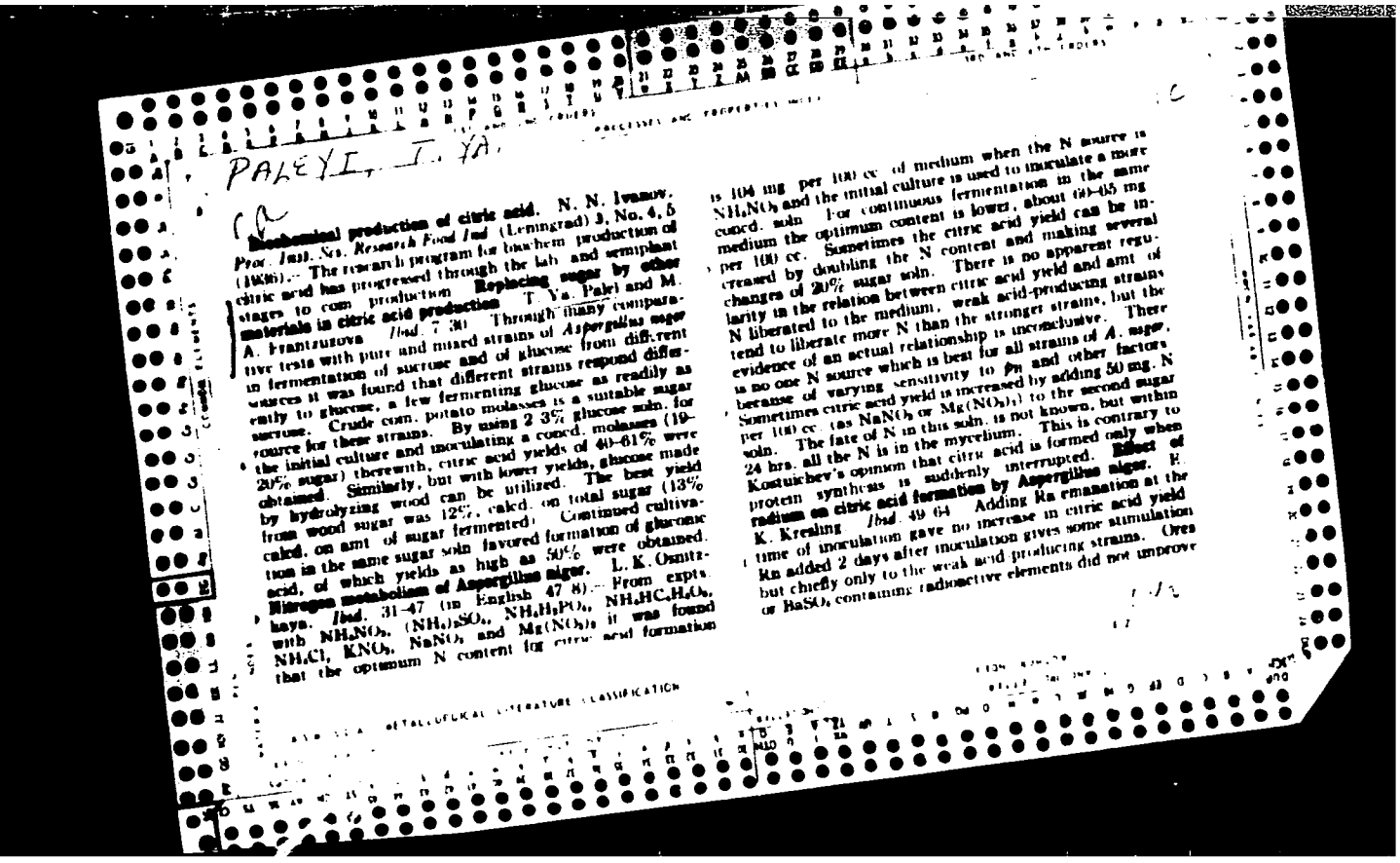
PROCESSES AND PROPERTIES INDEX

(M) PALEYI, I. Ya.

Antiscorbutic action of sauerkraut. I. Ya. Palei. *Konservnaya Plodoovoshchnaya Prom.* 1938, No. 3, 10-20; *Chem. Zentr.* 1939, II, 1101.—The vitamin C content of cabbage is practically independent of the [illegible]ety of cabbage; variations in content are due to the nonuniformity of distribution of the vitamin throughout the head of the cabbage. When the souring is done with mixed cultures of lactic acid bacteria and yeast the loss of vitamin C amounts to 1.9%, with the usual sauerkraut souring it is to 24%. The content of ascorbic acid in the 2 products is 32.18 ± 0.34 and 29.08 ± 0.74 mg. %, resp., as compared to 33.35 ± 0.45 mg. % in the fresh cabbage. The sauerkraut juice contains about 10-20 mg. %, so that the antiscorbutic dose for a cabbage soured with pure cultures is about 80-100 g. During the souring of the cabbage the vitamin losses are the less the more vigorous the fermentation and the less the exposure to air. Pasteurization impairs the taste and causes a large vitamin loss during the first months of storage. In unpasteurized sauerkraut the vitamin content remains unchanged about 1-2 months.

M. G. Moore

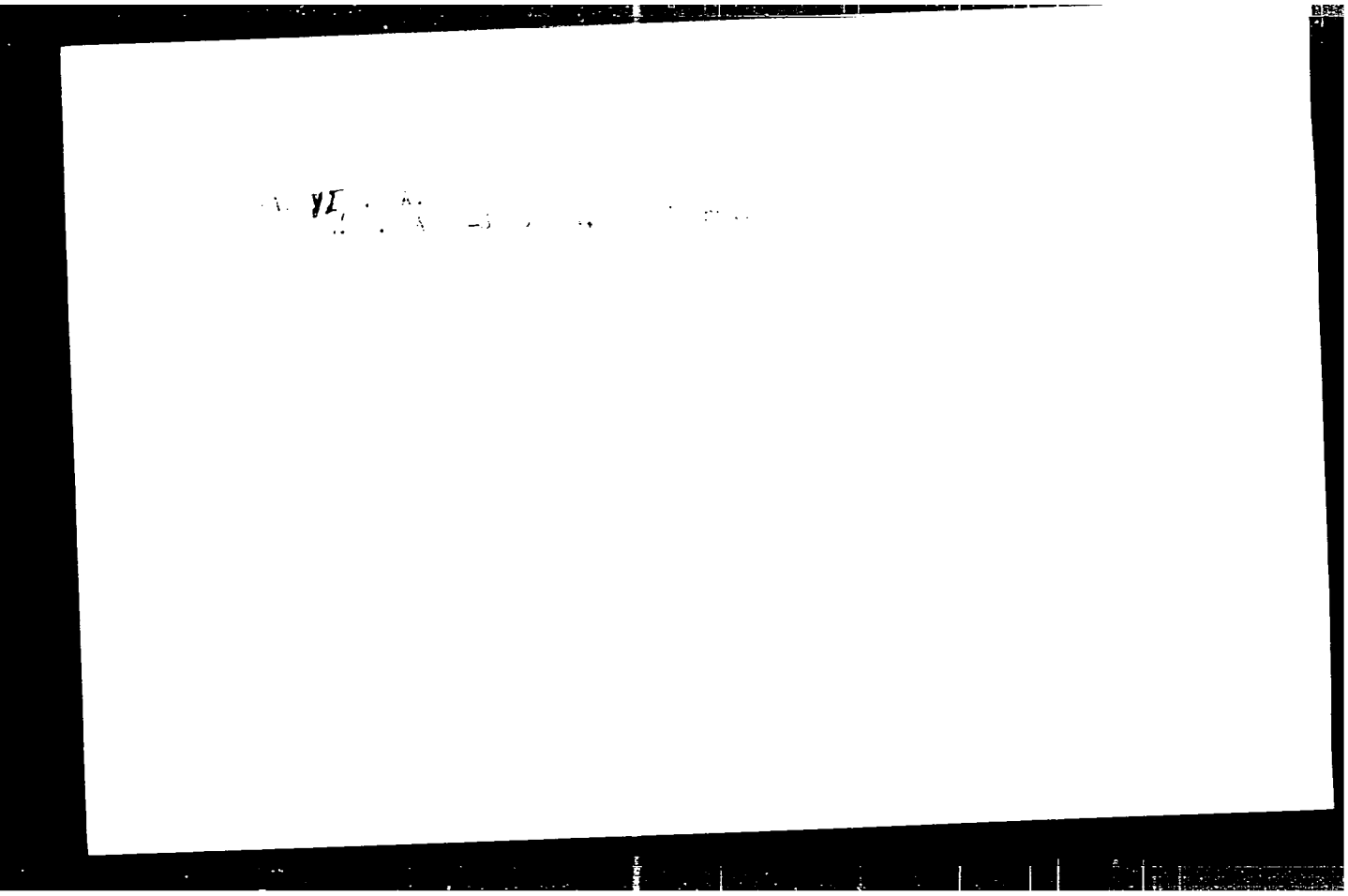
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

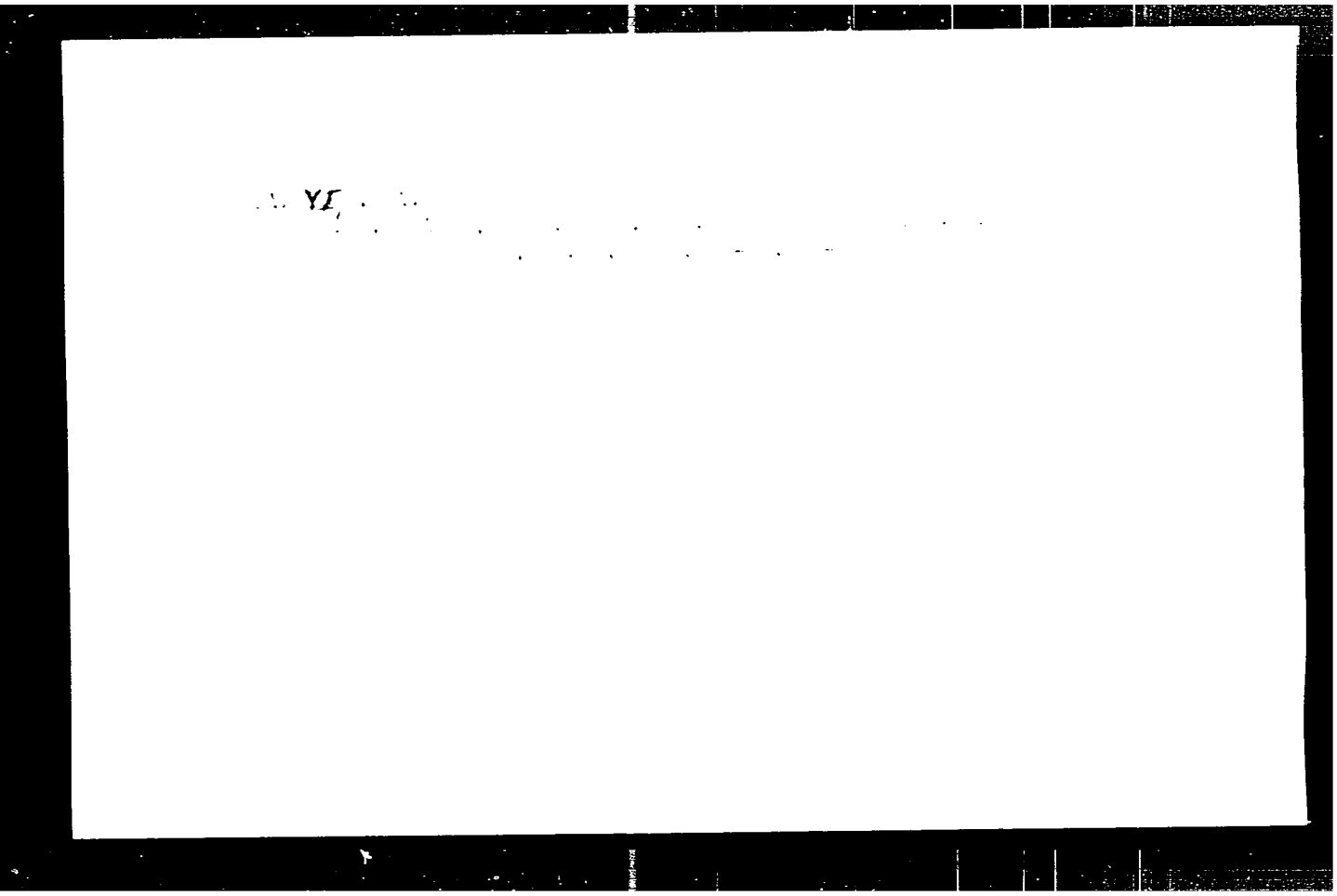


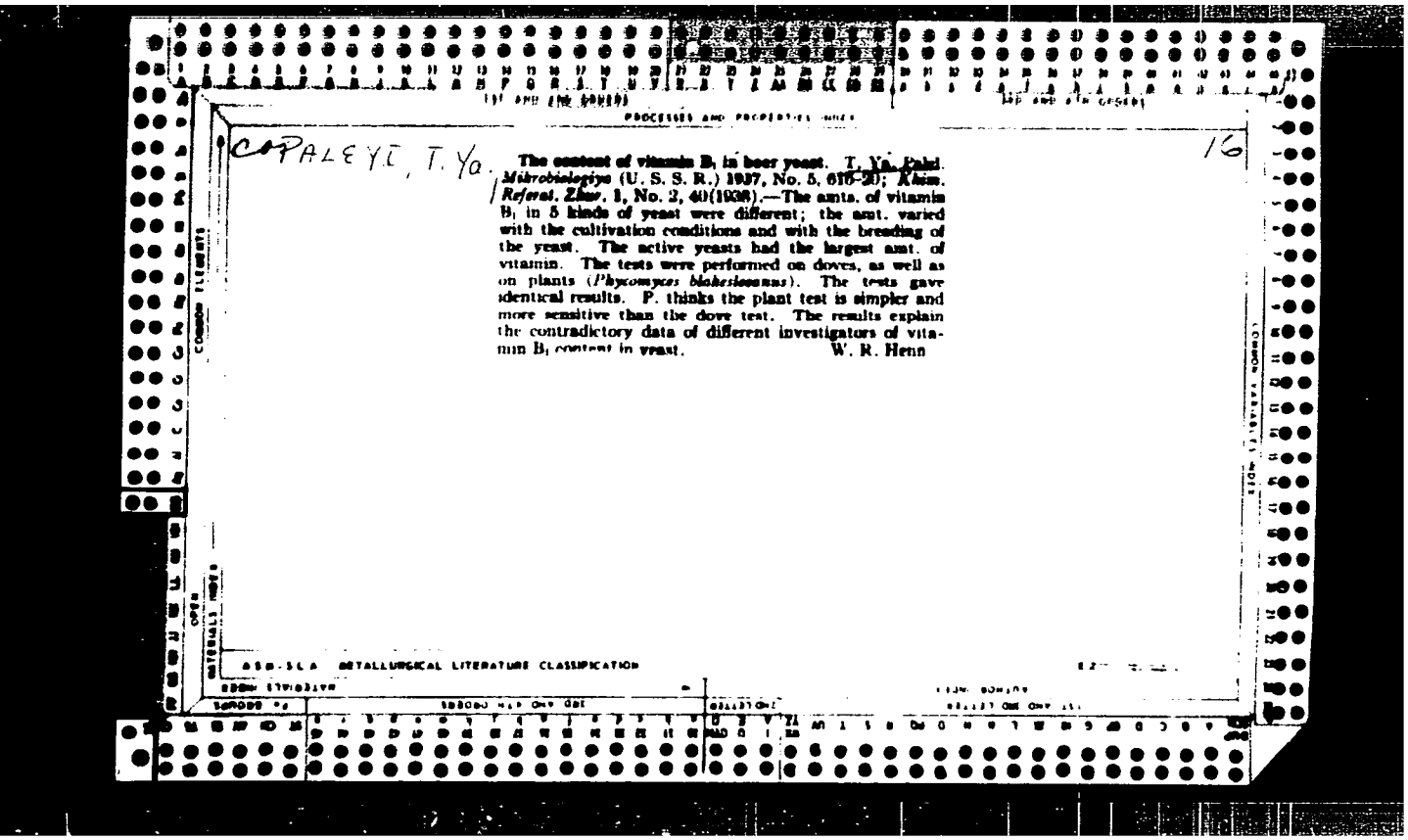
PALEY I., I. YA.

Biochemical production of citric acid. N. N. Ivanov. *Prom. Inst. No. Research Food Ind.* (Leningrad) 3, No. 4, 5 (1936).— The research program for biochem production of citric acid has progressed through the lab. and semiplant stages to com. production. **Replacing sugar by other materials in citric acid production.** T. Ya. Paley and M. A. Frantzuzova. *Ibid.* 7–30. Through many comparative tests with pure and mixed strains of *Aspergillus niger* in fermentation of sucrose and of glucose from different sources it was found that different strains respond differently to glucose, a few fermenting glucose as readily as sucrose. Crude com. potato molasses is a suitable sugar source for these strains. By using 2.3% glucose soln. for the initial culture and inoculating a concd. molasses (19–20% sugar) therewith, citric acid yields of 40–61% were obtained. Similarly, but with lower yields, glucose made by hydrolyzing wood can be utilized. The best yield from wood sugar was 12%, calcd. on total sugar (13% calcd. on amt. of sugar fermented). Continued cultivation in the same sugar soln. favored formation of gluconic acid, of which yields as high as 50% were obtained. **Nitrogen metabolism of Aspergillus niger.** L. K. Osnitzkaya. *Ibid.* 31–47 (in English 47–8).— From expts. with NH_4NO_3, $(NH_4)_2SO_4$, $NH_4H_2PO_4$, $NH_4HC_4H_4O_6$, NH_4Cl, KNO_3, $NaNO_3$ and $Mg(NO_3)_2$ it was found that the optimum N content for citric acid formation is 104 mg. per 100 cc. of medium when the N source is NH_4NO_3 and the initial culture is used to inoculate a more concd. soln. For continuous fermentation in the same medium the optimum content is lower, about 60–65 mg. per 100 cc. Sometimes the citric acid yield can be increased by doubling the N content and making several changes of 20% sugar soln. There is no apparent regularity in the relation between citric acid yield and amt. of N liberated to the medium, weak acid-producing strains tend to liberate more N than the stronger strains, but the evidence of an actual relationship is inconclusive. There is no one N source which is best for all strains of *A. niger*, because of varying sensitivity to p_H and other factors. Sometimes citric acid yield is increased by adding 50 mg. N per 100 cc. (as $NaNO_3$ or $Mg(NO_3)_2$) to the second sugar soln. The fate of N in this soln. is not known, but within 24 hrs. all the N is in the mycelium. This is contrary to Kostuichev's opinion that citric acid is formed only when protein synthesis is suddenly interrupted. **Effect of radium on citric acid formation by Aspergillus niger.** E. K. Kresling. *Ibid.* 49–64. Adding Ra emanation at the time of inoculation gave no increase in citric acid yield. Ra added 2 days after inoculation gives some stimulation but chiefly only to the weak acid-producing strains. Ores or $BaSO_4$ containing radioactive elements did not improve

acid yield. **Gas metabolism of Aspergillus niger.** M. A. Gudlet. *Ibid.* 65-84.—Quant. studies of the O_2 balance and CO_2 balance in citric acid production showed that thick layers of soln. are unsuitable and that aeration of such a layer retards rather than favors citric acid formation. Anaerobic conditions in the soln. are normal during acid production. Acid yield is larger than would be expected from the theory that EtOH is formed as an intermediate stage. Decreasing CO_2 content in the air above the mycelium does not cause the acid yield to fluctuate. **Salt metabolism of Aspergillus niger as related to citric acid formation.** M. A. Gudlet, V. A. Kursanova and V. V. Makarova. *Ibid.* 85-94 (in English 95). In tests with NH_4NO_3, KH_2PO_4, $MgSO_4$, $ZnSO_4$, $FeSO_4$, $Na_2B_4O_7$ -



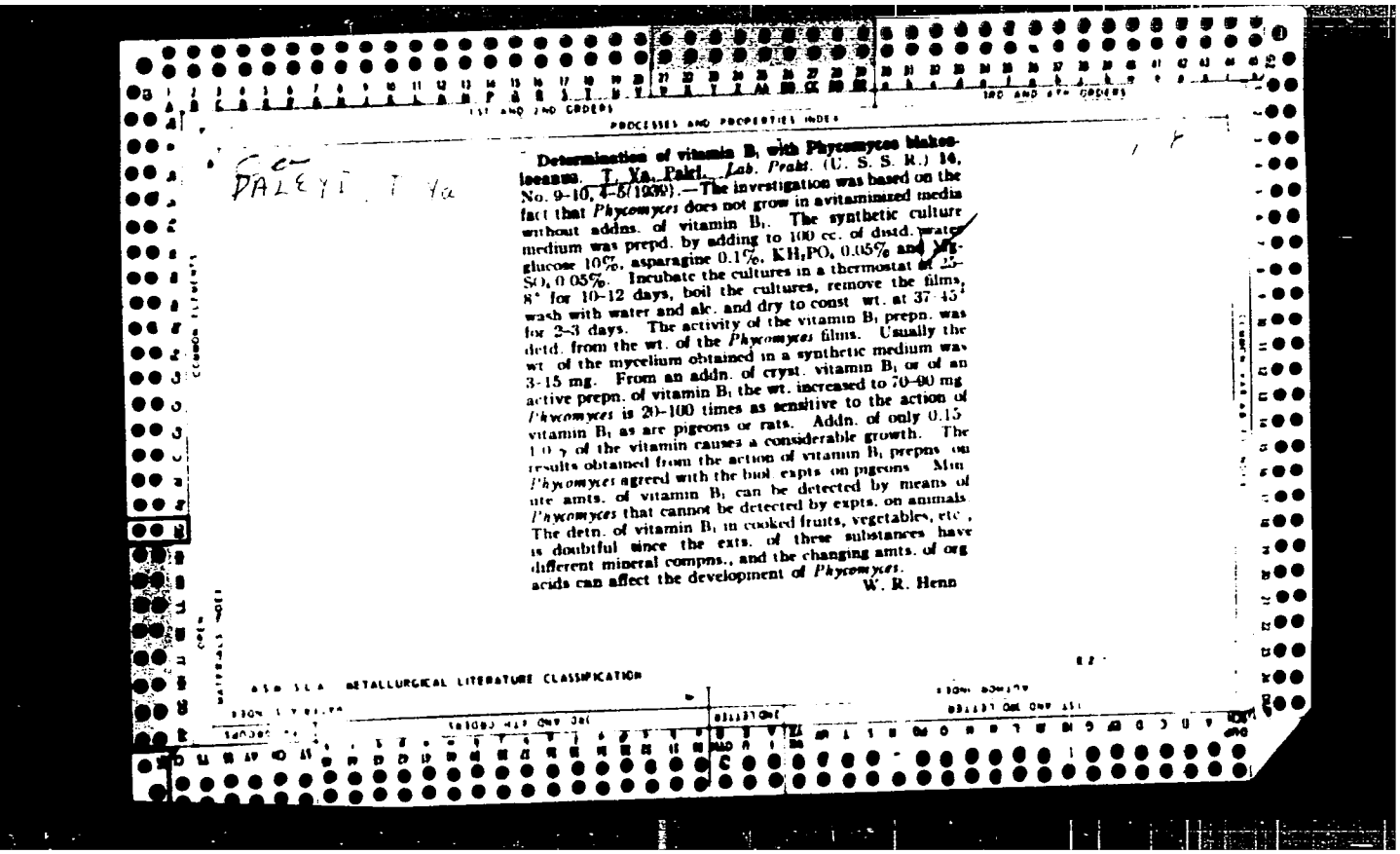




COPALEYI, T. Ya.

16

The content of vitamin B$_1$ in beer yeast. T. Ya. Paleyi. *Mikrobiologiya* (U. S. S. R.) 1937, No. 5, 616-20; *Khim. Referat. Zhur.* 1, No. 2, 40(1938).—The amts. of vitamin B$_1$ in 5 kinds of yeast were different; the amt. varied with the cultivation conditions and with the breeding of the yeast. The active yeasts had the largest amt. of vitamin. The tests were performed on doves, as well as on plants (*Phycomyces blakesleeanus*). The tests gave identical results. P. thinks the plant test is simpler and more sensitive than the dove test. The results explain the contradictory data of different investigators of vitamin B$_1$ content in yeast. W. R. Henn

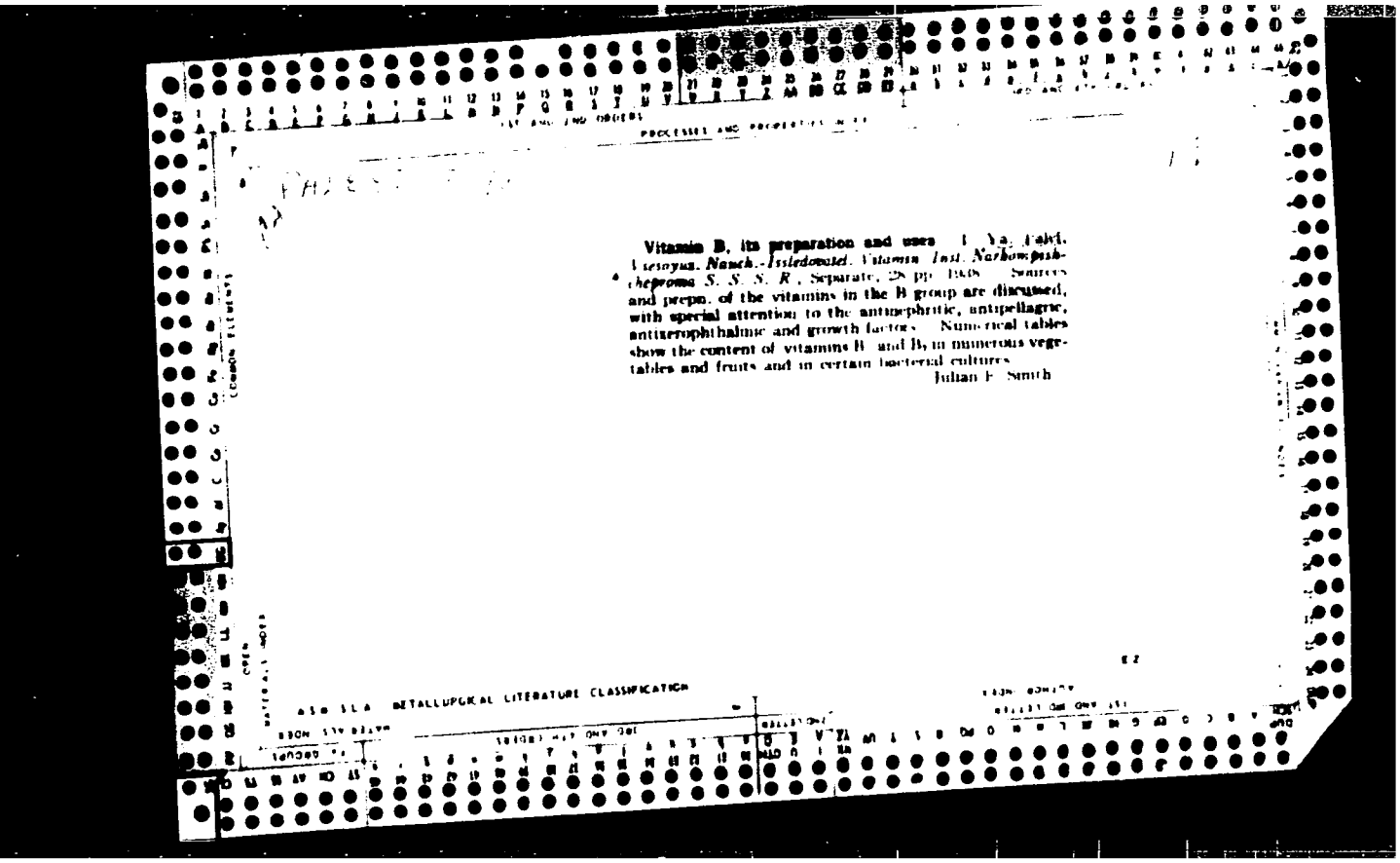


PROCESSES AND PROPERTIES INDEX

Determination of vitamin B$_1$ with Phycomyces blakesleeanus. T. Ya. Pakri. *Lab. Prakt.* (U. S. S. R.) 14, No. 9–10, 4–8(1939).—The investigation was based on the fact that *Phycomyces* does not grow in avitaminized media without addns. of vitamin B$_1$. The synthetic culture medium was prepd. by adding to 100 cc. of distd. water glucose 10%, asparagine 0.1%, KH_2PO_4 0.05% and $MgSO_4$ 0.05%. Incubate the cultures in a thermostat at 25–8° for 10–12 days, boil the cultures, remove the films, wash with water and alc. and dry to const. wt. at 37–45° for 2–3 days. The activity of the vitamin B$_1$ prepn. was detd. from the wt. of the *Phycomyces* films. Usually the wt. of the mycelium obtained in a synthetic medium was 3–15 mg. From an addn. of cryst. vitamin B$_1$ or of an active prepn. of vitamin B$_1$ the wt. increased to 70–90 mg. *Phycomyces* is 20–100 times as sensitive to the action of vitamin B$_1$ as are pigeons or rats. Addn. of only 0.15–1.0 γ of the vitamin causes a considerable growth. The results obtained from the action of vitamin B$_1$ prepns. on *Phycomyces* agreed with the biol. expts. on pigeons. Minute amts. of vitamin B$_1$ can be detected by means of *Phycomyces* that cannot be detected by expts. on animals. The detn. of vitamin B$_1$ in cooked fruits, vegetables, etc., is doubtful since the exts. of these substances have different mineral compns., and the changing amts. of org. acids can affect the development of *Phycomyces*.

W. R. Henn

A 5 B 5 L A METALLURGICAL LITERATURE CLASSIFICATION



Vitamin B, its preparation and uses. I. Ya. Tabri, Uchenyus. Nauch.-Issledovatel. Vitamin Inst. Narkomzdravkheproma S. S. S. R., Separate, 28 pp. 1938. Sources and prepn. of the vitamins in the B group are discussed, with special attention to the antinephritic, antipellagric, antixerophthalmic and growth factors. Numerical tables show the content of vitamins B and B_1 in numerous vegetables and fruits and in certain bacterial cultures.

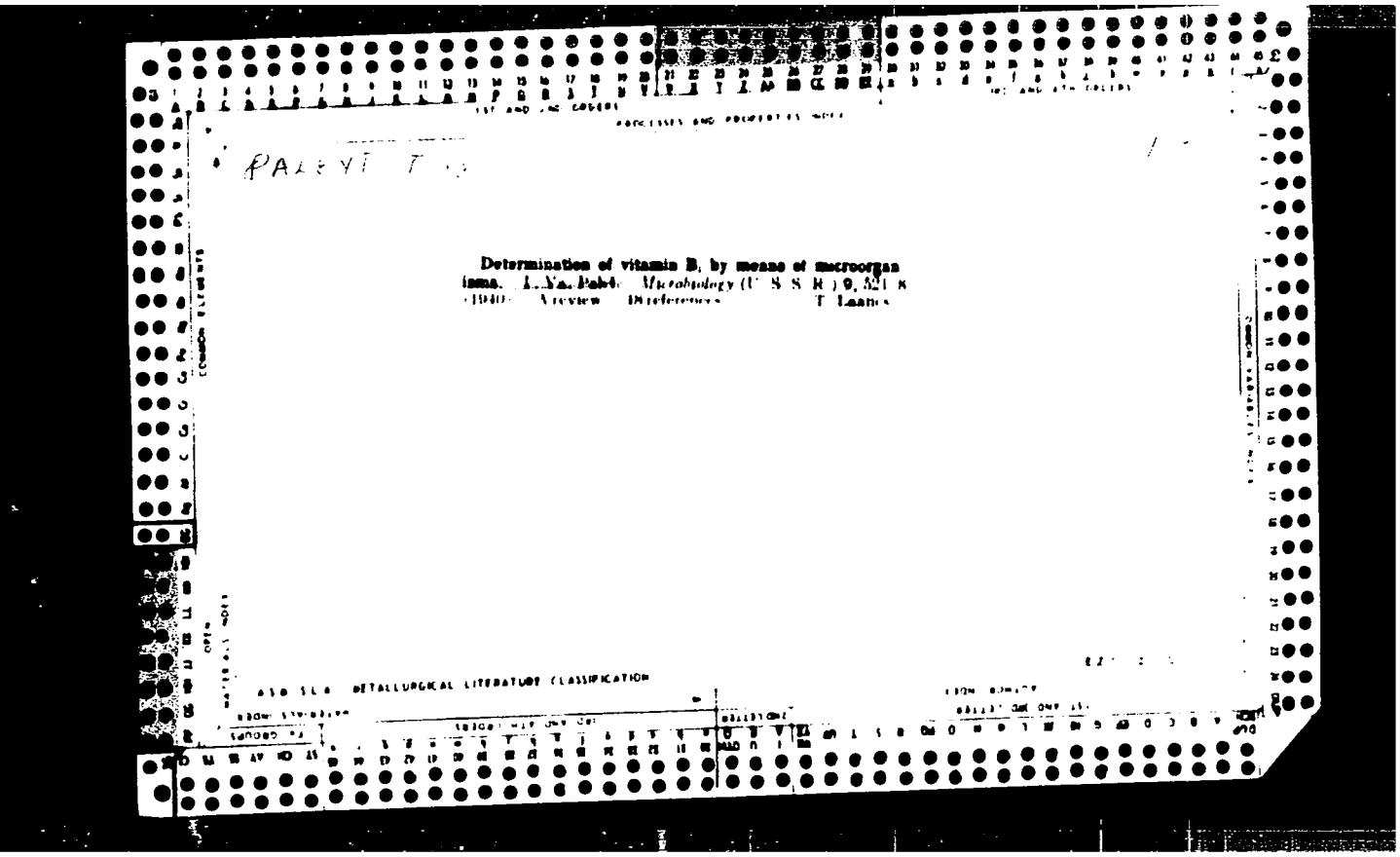
Julian F. Smith

CA

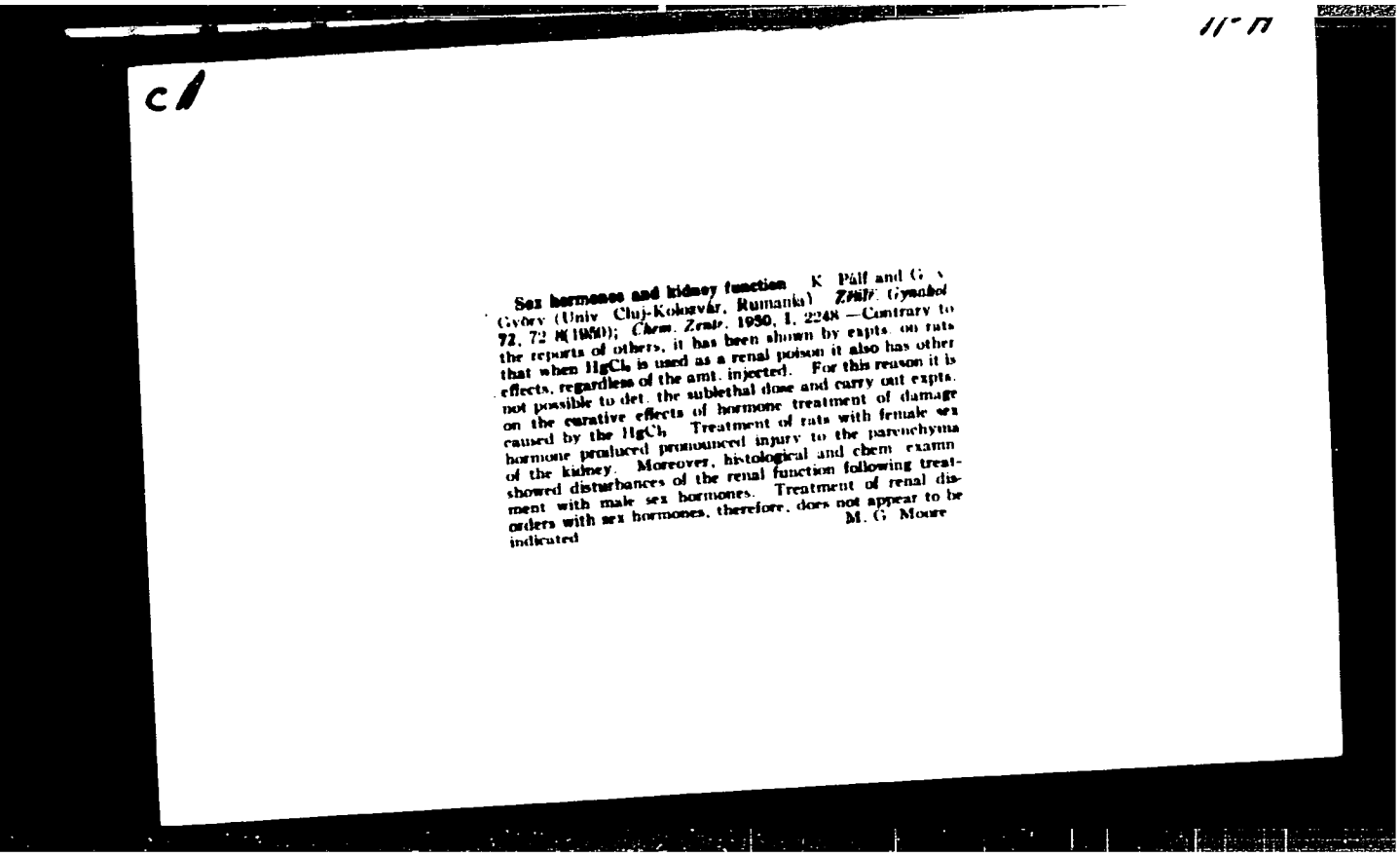
PROCESSES AND PROPERTIES INDEX

Stability of Aspergillus niger strains as regards acid production. E. I. Sotnikov and T. Ya. Pako. *Compt. rend. acad. sci. U. R. S. S.* 1, 139-43 (in English 144-6) (1935). A study of the citric acid production of several strains of *A. niger* led to the conclusion that one strain, Z, is exceedingly stable in its power of acid production, this characteristic being a physiol. property of the strain. The energy of fermentation of the Z strain is not dependent of the duration of mycelium growth, of the source of mineral N and of the sugar concn. of the nutrient soln. between 5 and 20%. Rachel Brown

METALLURGICAL LITERATURE CLASSIFICATION



Determination of vitamin B, by means of microorgan
isms. L. Ya. Pabst. *Microbiology* (U S S R) 9, 521 8
1940. A review. 18 references. T. Leaman



Sex hormones and kidney function K. Pálf and G. [illegible] (Univ. Cluj-Kolozsvár, Rumania) *Zentr. Gynäkol.* Györy 72, 72-8(1950); *Chem. Zentr.* 1950, I, 2248.—Contrary to the reports of others, it has been shown by expts. on rats that when $HgCl_2$ is used as a renal poison it also has other effects, regardless of the amt. injected. For this reason it is not possible to det. the sublethal dose and carry out expts. on the curative effects of hormone treatment of damage caused by the $HgCl_2$. Treatment of rats with female sex hormone produced pronounced injury to the parenchyma of the kidney. Moreover, histological and chem. examn. showed disturbances of the renal function following treatment with male sex hormones. Treatment of renal disorders with sex hormones, therefore, does not appear to be indicated. M. G. Moore

PALFAI, Istvan

Manpower situation in the agriculture. Stat szemle 41 no.2:115-137 F '63.

1. Kozponti Statisztikai Hivatal csoportvezetoje.

Pal Falvi A

PHASE I BOOK EXPLOITATION RUM/5788

Cluj, Transylvania. Institutul Politehnic

Lucrări științifice (Scientific Works) Cluj, Intreprinderea Poligrafica, 1959. 537 p. Errata slip inserted. No. of copies printed not given. No contributors mentioned.

PURPOSE: This book is intended for mathematicians, physicists, chemists, and civil and mechanical engineers.

COVERAGE: The book consists of 59 papers by Rumanian specialists on problems in science and technology, particularly mathematics, physics, chemistry, metallurgy, civil and mechanical engineering. Summaries in Russian and French or German are given at the end of each article. Some of the articles are accompanied by references. No personalities are mentioned. At the back of the book there are 23 references, all Rumanian.

TABLE OF CONTENTS:

PART II. CONSTRUCTION

PART III. MECHANICS

BALPAIU, A.; [illegible]

Research in the field of obtaining the iron iron powders. p. [illegible].

[illegible]. Bucuresti, Romania. Vol. [illegible], no. 2, [illegible].

Monthly List of East European Accessions. (EEAL), LC. Vol. 7, no. 9, Sept. 1968. Incl.

PALFALVI, A.

Obtaining Prem-type iron powder. A. Domsa and A. Pálfalvi. *Acad. rep. populare Romîne, Studii cercetări met.*, 4, 69-72 (1959). A Prem-type Fe powder, i.e., Fe reduced by CH_4, is produced from rolling-mill scale by drying, sifting, and grinding. This raw material is reduced in an automatic tubular furnace at 900–1050° with CH_4 gas. The sintering is done at 1050–1200° with an air-gas mixt.

Felicitas D. Goodman

S/137/62/000/004/043/201
A006/A101

/ 76 /

AUTHORS: Domsha, A.; Palfalvi, A.

TITLE: Investigations in the field of iron powder preparation

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 41 - 42, abstract 4G273 ("Poroshk. metallurgiya", 1961, no. 5, 102 - 111)

TEXT: In the RNR a method was developed for obtaining Fe-powder by reducing mill cinder with natural gas (the so-called "frame" method). The mill cinder is dried at 400°C; screened through a sieve with 1 mm meshes; ground in a ball mill during 30 min and, reduced at about 1,000°C. The finished powder contains 0.28 - 1.0% C, 90 - 96% Fe, 3.2% O; if partially burnt methane is used, the C-content can be considerably lowered. The expediency is noted of employing rotary gas furnaces for the reduction process. The pressability and sintering capacity of the powder and the properties of the sintered products are described.

R. Andriyevskiy

[Abstracter's note: Complete translation]

Card 1/1