POLIKANOV, S.M., kand.fiz.-matem.nauk; MIKHEYEV, V.L.

New type of nuclear fission. Priroda 53 no.6:70-73 '64.
(MIRA 17:6)

1. Ob"yedinennyy institut yadernykh issledovaniy, Dubna.

L 41015-65 EWA(h)/EWT(m) P/b

ACCESSION NR: AP5007707 S/0367/65/001/001/0067/0071

AUTHOR: Lobanov, Yu. V.; Kuznetsov, V. I.; Perelygin, V. P.; Polikanov, S. M.; Oganesyan, Yu. Ts.; Flerov, G. N.

TITLE: A spontaneously fissionable isomer with a halflife of 0.0009 seconds

SOURCE: Yadernaya fizika, v. 1, no. 1, 1965, 67-71

TOPIC TAGS: spontaneous fission, isomer fission, short halflife isomer, radioactive decay, ion bombardment, plutonium target, uranium target

ABSTRACT: The authors have previously reported discoveries of short-lived, spontaneously decaying, nuclei with $13.5 \cdot 10^{-3}$ sec. and ~3.5 sec. half-lives (see, e.g., A. P. Linev, B. N. Markov, A. A. Pleve, S. M. Polikanov, Preprint OIYaI D-1693, 1964; V. P. Perelygin, S. P. Tret'yakova, ZhETF, 45, 863, 1963). In all probability, this considerable increase in spontaneous fission rates is due to the fact that fission proceeds from an excited rather than from a ground state. At the same time, several of the present authors predicted (V. A. Druin, N. K. Skobelev, B. V. Pefilov, V. I. Kuznetsov, Yu. V. Lobanov, Yu. Ts. Oganesyan, Preprint OIYaI R-1651, 1964) that there should exist still another nuclear isomer

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with $Z \leq 100$ which would have a spontaneous fission period of about 3.5 sec.; consequently, they continued their search for other possible short-lived isomers with lifetimes within the millisecond region . They developed a method for the registration of periods down to $5 \cdot 10^{-4}$ sec. for fission fragments from spontaneous fission of nuclear heavy-ion reaction products and carried out experiments on the internal beam of the U-300 cyclotron of the OIYaI. The fission fragments were registered by means of glass detectors. After bombarding plutonium and uranium by neon and boron ions accelerated in the 310 cm machine, a spontaneously fissionable isomer was found with $Z \leq 99$, $A \leq 250$, and a half-life equal to 0.85±0.08 milliseconds. The absence of a corresponding fissionable nucleus with $T_{1/2}$ = 0.9 μsec. during the U + B^{11} reaction seems to indicate that the production cross section of the resulting isomer is two orders of magnitude smaller than the Pu + B^{11} production cross section. "The authors thank S. P. Tret'yakov and T. I. Rybakov for their help during the finishing and scanning of glass plates, and the personnel of the U-300 machine group for guaranteeing the continuity of the tests." Orig. art. has: 3 figures.

ASSOCIATION: Obʻyedinennyy institut yadernykh issledovaniy (Joint Institute for Nuclear Studies)
SUBMITTED: 01Sep64 ENCL: 00 SUB CODE: NP
NO REF SOV: 008 OTHER: 000

L 29280-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6019332 SOURCE CODE: UR/0367/66/003/003/0455/0456

33
B

AUTHOR: Markov, B. N.; Plev, A. A.; Polikanov, S. M.; Flerov, G. N.

ORG: Joint Institute of Nuclear Research (Ob"yedinenyy institut yadernykh issledovaniy)

TITLE: Experiments on the synthesis of a spontaneously fissionable isomer in the Am sup 241 (n, gamma) Am sup 242 reaction 19

SOURCE: Yadernaya fizika, v. 3, no. 3, 1966, 455-456

TOPIC TAGS: americium, isomer, thermal neutron

ABSTRACT: The creation of a spontaneously fissionable Am^{242m} isomer in reactions with thermal neutrons was investigated. It is shown that the cross-section of this process is less than $3 \cdot 10^{-28}$ cm² and the isomer ratio $\alpha < 5 \cdot 10^{-7}$. Authors' thank K. A. Gavrilov for preparation of the target and A. M. Kucher and I. V. Saratov for help in conducting the experiments. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20 / SUBM DATE: 10Sep65 / ORIG REF: 004 / OTH REF: 003

Card 1/1 CC

L 33757-66 EWT(m)

ACC NR: AP6025838 SOURCE CODE: UR/0089/66/020/003/0230/0232

AUTHOR: Zager, B. A.; Miller, M. B.; Mikheyev, V. L.; Polikanov, S. M.; Sukhov, A. M.; Flerov, G. N.; Chelnokov, L. P.

ORG: none

50
B

TITLE: Properties of the 102 sup 254 isotope

SOURCE: Atomnaya energiya, v. 20, no. 3, 1966, 230-232

TOPIC TAGS: isotope, cyclotron, half life, particle physics

ABSTRACT: Isotope 102^{254} has been produced on the external beam of the 150 centimeter OIYaI cyclotron following the $Am^{245}(N^{15}, 4n)102^{254}$ reaction. It was established by recording the α-decay of the primary and daughter nuclei that the half-life of this isotope is within the 20-50 sec interval, while the energy of the emitted α particles is equal to 8.10 ± 0.05 MeV. The new results are in disagreement with the data found in literature ($T_{1/2}$ = 3 sec, and E_α = 8.3 MeV). The authors thank the collective that worked on the accelerator: A. F. Linev, I. A. Shelayev, and V. S. Alfeyev for checking the efficiency of the cyclotron; K. A. Gavrilov for preparing the target, which was stable under very intense beams; and V. A. Chugreyev for carrying out the construction work. They also thank Doctor of Physicomathematical Sciences I. G. Gverdtsiteli, who provided the isotope N^{15}; V. I. Kuznetsov, A. G. Smirnov-Averin, and A. G. Kozlov, who guaranteed the receipt of Am^{243} for the target. Finally, they thank A. G. Belov, V. I. Ilyushchenko and V. I. Nikolayev for help in conducting the experiments. Orig. art. has: 2 figures. [JPRS: 36,139]

SUB CODE: 18, 20 / SUBM DATE: 15Dec65 / ORIG REF: 006 / OTH REF: 005

UDC: 546.799.92

Card 1/1

[JPRS: 38,784] ... figures, 1 formula and ...

SUB CODE: 20 / SUBM DATE: 22Jan66 / ORIG REF: 014 / OTH REF: 011

Card 1/1

0966 2317

ACC NR: AP7012408 SOURCE CODE: UR/0367/67/005/001/0022/0025

AUTHOR: Gangrskiy, Yu. P.; Markov, B. N.; Polikanov, S. M.; Yungklaussen, G. -- Jungclaussen, H.

ORG: Joint Institute for Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy)

TITLE: Investigation of the reaction U^{238} - B11 leading to a spontaneously fissionable isomer Am^{242}

SOURCE: Yadernaya fizika, v. 5, no. 1, 1967, 22-25

TOPIC TAGS: americium, boron, nuclear isomer, nuclear spin

SUB CODE: 20,11

ABSTRACT: The reaction U^{238}+B11 leading to the ground (1-), isomeric (5-) and spontaneously fissionable states of Am^{242} was investigated. The excitation functions have been obtained for the ground and spontaneously fissionable states. For the 5- state, the averaged cross section has been measured in the energy range 50-68 MeV. The spin of the spontaneously fissionable state was evaluated by comparing the cross sections for the production of Am^{242} in various states. The authors thank G. N. Flerov for constant interest in the work, V. P. Perelygin and coworkers of his group for processing and examining the glass detectors, K. A. Gavrilov for preparing the targets, and B. A. Gvozdev

Card 1/2

0932 1339

ACC NR: AP7012408

and S. A. Pleshukovaya for the chemical separation of Am and Cm. Orig. art. has: 3 figures and 1 formula. [Based on authors' Eng. Abst.] [JPRS: 40,393]

2/2

POLIKANOV, V.

Vladivostok is building. Na stroi.Ros. no.1:16-18 Ja '61.
(MIRA 14:6)

1. Nachal'nik Glavvladivostokstroya.
(Vladivostok—Construction industry)

POLIKANOV, V. (L'vov).

With the amateur photographers of Lvov. Sov. foto 18 no.5:32 My '58.
(Lvov—Photography) (MIRA 11:5)

POLIKANOV, V.

Resume the work of the Lvov Photography Club. Sov.foto 17 no.6:76-7? Je '57. (MLRA 10:8)

(Lvov--Photography)

POLIKANOV, V

POLIKANOV, V

Swivel head for the tripod. Sov.foto 17 no.8:59-60 Ag '57.
(MLRA 10:9)
(Cameras--Equipment and supplies)

POLIKANOV, V.

POLIKANOV, V., inzhener, laureat Stalinskoy premii; KREKSHINA, L., redaktor; YAKOVLEVA, Ye. tekhnicheskiy redaktor.

[Rapid assembly-line construction of apartment houses] Potochno-skorostnoe stroitel'stvo zhilykh domov. Moskva, "Moskovskii rabochii," 1954. 29 p. (MLRA 8:1)
(Apartment houses) (Building)

L 34079-65 EEC(b)-2/EPF(n)-2/EPR/EWA(c)/EWT(l)/EWT(m)/EWG(m)/EWP(b)/T/EWP(e)/EWP(t)/
Ps-4/Pu-4 IJP(c) AT/WH/JD/JG

ACCESSION NR: AP5007151 S/0286/65/000/003/0018/0019

AUTHOR: Lymar', G. F.; Polikanov, Yu. V.; Medvedev, B. A.

TITLE: A method of growing silicon carbide single crystals. Class 12, No. 167836

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 3, 1965, 18-19

TOPIC TAGS: silicon carbide, silicon carbide single crystal, vapor grown single crystal, single crystal growing

ABSTRACT: An Author Certificate has been issued for a method of growing silicon carbide single crystals from the vapor phase. To increase the yield of the hexagonal silicon carbide, the process is conducted in a vacuum of 10^{-3} mm Hg. In a modification of this method, single crystals are grown at 2100—2250C with a temperature gradient of 6—10C and the upper half of the crucible is filled with the initial silicon carbide, whose particle size is 0.05—1.5 mm. [MS]

ASSOCIATION: none

SUBMITTED: 05Jun63 ENCL: 00 SUB CODE: SS

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3209

Card 1/1

L 38894-66 EWT(l)/EWT(m)/T/EWP(t)/ETI IJP(c) AT/JD

ACC NR: AP6018572 SOURCE CODE: UR/0181/66/008/006/1948/1950

AUTHOR: Polikanov, Yu. V.; Lymar', G. F.; Zhukova, L. M.

ORG: none

TITLE: Radiative recombination in the space-charge layer of a p-n junction

SOURCE: Fizika tverdogo tela, v. 8, no. 6, 1966. 1948-1950

TOPIC TAGS: silicon carbide, radiative recombination, pn junction, space charge, forbidden band, semiconductor carrier, electron trapping

ABSTRACT: The authors extend the theory of Sah, Noyce, and Shockley (Proc. IRE v. 45, 1228, 1957), which explains the properties of p-n junctions in materials with large width of the forbidden band and low effective lifetime of nonequilibrium carriers, to include the case of recombination in the space-charge layer in the presence of several recombination channels. Expressions are obtained for the current density through the junction in terms of the densities through the individual recombination traps. This theory was checked by testing the volt-ampere characteristics and the dependence of the capacitance on the voltage of epitaxial diffusion p-n junctions produced in silicon carbide. Capacitance tests have shown that the width of the junction was $(1 - 5) \times 10^{-5}$ cm at V = 0, and the contact potential was 2.4 - 2.5 ev. The dependence of the radiation intensity on the temperature and on the current was measured and compared with the calculations based on the theory. The agreement between theory and experiment was satisfactory, and the thermal activation energy of

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L 38894-66

ACC NR: AP6018572 2

the radiative recombination trap (0.28 ev) was found to agree with the published activation energy for aluminum in SiC. This suggests that the aluminum atoms are responsible for the radiative recombination in these junctions. It is concluded that the ideas developed for SiC should be taken into account when analyzing characteristics of radiation from other materials with large forbidden bands. Orig. art. has: 1 figure and 4 formulas.

SUB CODE: 20/ SUBM DATE: 09Nov65/ ORIG REF: 001/ OTH REF: 003

Card 2/2 mlp

POLKANOVA, L.P.

Molasse stratigraphy of southern Fergana. Trudy VNIGNI no.30: 144-160 '61. (MIRA 14:9)

(Fergana--Geology, Stratigraphic)

GRUDKIN, K.A.; POLYANOVA, L.P.

Relationship between structural levels of an anticline in the southern Alamysh area. Geol. nefti i gaza 5 no. 2:33-35 F '61. (MIRA 14:2)

1. Uzbekskiy geofizicheskiy trest i Vsesoyuznyy nauchno-issledovatel'skiy geologo-razvedochnyy neftyanoy institut.
(Fergana--Folds (Geology))

POLKANOVA, L.P.; ROZANOV, N.M.

Prospecting for local structures by geomorphological methods in the Bukhara-Khiva oil-bearing region. Geol.nefti i gaza 6 no.3:46-47 Mr '62. (MIRA 15:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut.
(Uzbekistan--Geomorphology) (Prospecting)

POLKANOVA, L.P.; VARUSHCHENKO, S.I.

Structural-geomorphological analysis of the relief of the Tarkhankut-Novoselovka hilly plain of the Crimean steppes. Geol. nefti i gaza 8 no.4:19-21 Ap '64.

(MIRA 17:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut, Moskva.

S/191/61/000/007/001/010
B101/B215

AUTHORS: Tsvetkov, V. N., Kanavets, I. F., Polikarova, M. P.

TITLE: Study of the swelling process of polyvinyl chloride resins

PERIODICAL: Plasticheskiye massy, no. 7, 1961, 3-8

TEXT: This paper deals with the problem of plasticizing polyvinyl chloride (PVC) resins used for cable insulation. The effect of non-adsorbed plasticizers on the quality of the plasticized resin is discussed. The authors studied processes of swelling to eliminate an excess of the plasticizer and thus increase the efficiency of the extruder. The study was conducted by determining the residual compressibility G of the powdery PVC. G was determined after the resin had been mixed with 30 % of the BC (VSF) plasticizer (phthalate of higher $C_7 - C_9$ alcohols) at room temperature, heated in a thermostat between aluminum plates (maximum layer thickness: 2 mm), and, after swelling, cooled down to room temperature. The plasticized resin (1.2 g) was then filled into a cylindrical container (diameter: 10 mm) and loaded in an elastometer at a linear piston velocity

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Study of the swelling process of...

of 27.5 mm/min, for 8-12 sec up to a maximum of 500 kg/cm^2. As soon as the maximum was reached, the piston was removed and the initial height h_i of the sample was measured with an error of $\pm$ 0.01 mm. After 5 min, the final height h_e was measured. G was calculated from $G = \Delta V/V = 100\ \% \cdot (h_i - h_e)/h_i$, where ΔV denotes the change in volume within 5 min at a constant load, and V the volume measured when the load of 500 kg/cm^2 was reached. The mean error was $\pm$ 3%. PVC resins of type ПФ-спец. (PF-spec.), viscosity η = 2.34 and 2.46, ПФ-4 (PF-4), and η = 1.78. All three resins showed comparable results. Non-adsorbed plasticizers had only a slight effect upon the measured value. Two stages are distinguished. The plasticizer first diffuses into the polymer. The viscosity decreases, but the mobility of the polymer chains is still low. Then, swelling sets in and the mobility of the polymer chain increases. The process of swelling varies according to the viscosity and structure of the resin and the various admixtures. The time τ required for heating a resin by a 30 % plasticizer so strongly that G equals 1 %, increases as the initial η of the resin increases. The resins PF-4 had been heated up to 70-100°C, and PF-spec. up to 80-120°C before G was determined. τ decreased as the temperature increased. It was found that τ in PF-4 heated up to 80-90°C is considerably shorter than that

Card 2/3

GOLOMSHTOK, Ye.; POLIKANOVA, Ye.

Training machine. Prof.-tekh. obr. 21 no.6:22 Je '64.
(MIRA 17:9)

POLIKAR, A.Ch.

Experience in the production and immunological testing of purified concentrated adsorbed diphtheria anatoxin. Nauch. osn. proizv. biol. prep. 10:91-99 '61. (MIRA 18:7)

1. Nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii, Sofiya.

POLIKAR, A.Ch.; APANASHCHENKO, N.I.

Immunochemical study of purified diphtheria antitoxin.
Zhur. mikrobiol., epid. i immun. 41 no.11:40-43 '65.

(MIRA 18:5)

1. Sofiyskiy nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii i Institut epidemiologii i mikrobiologii imeni Gamalei AMN SSSR.

CHERVINSKIY, A.A., kand. med. nauk; POLIKARPOV, M.Ya.; ABRAMOV, V.K.

Phlebographic methods of determining the operability of pulmonary cancer. Khirurgiia 41 no.4:13-17 Ap '65.

(MIRA 18:5)

1. Kafedra khirurgii (zav. - prof. B.I. Fuks) Novokuznetskogo instituta usovershenstvovaniya vrachey.

KRASNITSKIY, A.Ya., dotsent; POLIKARPOV, N.S., ordinator.

Electrical cauter for dehorning calves. Veterinariia 39 no.7:67-68 Jl '62. (MIRA 18:1)

1. Orenburgskiy sel'skokhozyaystvennyy institut.

BROMLEY, Mikhail Fedorovich, dots., kand. tekhn. nauk; SHCHEGLOV, Vladimir Porfir'yevich, dots., kand. tekhn. nauk; POLIKARPOV, Valentin Filippovich, kand. tekhn. nauk, nauchn. red.; DOLGOVA, K.N., red.

[Designing the heating and ventilation of industrial buildings] Proektirovanie otopleniia i ventiliatsii proizvodstvennykh zdanii. Moskva, Stroiizdat, 1965. 259 p. (MIRA 18:4)

POLIKARPOV, Pavel Nikolayevich, prof., doktor tekhn. nauk; NEKLEPAYEVA, Z.A., red.

[Principles for designing precast reinforced concrete bridge elements] Osnovy proektirovaniia sbornykh zhelezobetonnykh mostovykh konstruktsii. Moskva, Transport, 1965. 222 p. (MIRA 18:1)

GRUZIN, P.L.; ZHAROV, Yu.D.; POLIKARPOV, Yu.A.

Effect of gamma rays on the inelastic properties of single crystals of copper. Dokl. AN SSSR 159 [illegible].5:1027-1030 D '64
(MIRA 18:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I.P.Bardina. Predstavleno akademikom G.V. Kurdyumovym.

BLIZNAKOV, G.; BAKURDZHIEV, Iv.; POLIKAROVA, R.

Adsorption properties of the silica gel modified surfaces. Pt. 1.
Izv Inst khim BAN no.8:165-175 '61.

POLIKANOVA, R.B.

"Structural Alterations of the Mucous Membrane of the Stomach in Duodenal Ulcer Cases." Cand Med Sci, Second Moscow State Medical Inst imeni I. V. Stalin, 20 Dec 54. (VM, 9 Dec 54

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)

SO: Sum. No. 556 24 Jun 55

SHLAPOBERSKIY, V. Ya., professor; POLIKANOVA, R.B.

Resection for exclusion of the stomach in hard-to-remove ulcers of the duodenum. Khirurgiia no.7:22-25 Jl '55. (MLRA 8:12)

1. Iz gospital'noy khirurgicheskoy kliniki lechebnogo fakul'teta (dir. zasluzhennyy deyatel' nauki V.S.Levit) II Moskovskogo meditsinskogo instituta imeni I.V.Stalina.

(STOMACH, surg.)
(PEPTIC ULCER, surg.
resection of stomach in hart-to-remove ulcers of duodenum)

MAKAROVA, N.A.; POLIKARPOVA, E.G.; DANCHENKO, A.G.

Comparative evaluation of the Engelhardt-Smirnova and the Ilca methods for the determination of total cholesterol. Lab. delo no.2:95-97 '65. (MIRA 18:2)

1. Fakul'tetskaya terapevticheskaya klinika (direktor - deystvitel'nyy chlen AMN SSSR prof. V.N. Vinogradov [deceased]) 1-go Moskovskogo meditsinskogo instituta im. I.M. Sechenova.

POLIKAR, A.; TENCHEV, G.; SOLOMONOVA, K.; STOYANOV, D. [Stoianov, D.]; DITSOV, S.

Tests in a simultaneous immunization against diptheria, tetanus, whooping cough, and tuberculosis. Trudy epidemiol mikrobiol 8: 65-72 '61 [publ.'62].

POLIKAR, A

~~SURNAME~~ (In caps); Given Names

Country: Bulgaria

Academic Degrees: not indicated

Affiliation: not indicated

Source: Sofia, Khigiena, No 2, Mar/Apr 61, pp 5-8

Data: "The Eradication of Diphtheria."

POLIKAR, A. Bulgaria

[Academic Degrees]

[Affiliation]

[Source] Sofia, Sreden Meditsinski Rabotnik, No 6, 1962, pp 43-46.

[Data] Our Bio-preparations

POLIKARKINA, K. I.: Cand Master Tech Sci (diss) -- "The physical and biochemical properties of mustard seeds grown under the conditions of Stalingrad Oblast". Odessa, 1958. 20 pp (Min Higher Educ Ukr SSR, Odessa Tech Inst im I. V. Stalin), 150 copies (KL, No 5, 1959, 151)

POLIKAROV, A.

Criticism of the alternativistic concept. Doklady BAN 16 no.5:457-460 '63.

1. Vorgelegt con Akademiemitglied T. Pavlov.

POLIKAROV, A.

On the truth of the philosophical interpretation of scientific conceptions. Doklady BAN 16 no.6:569-571 '63.

1. Submitted by Academician T.Pavlov.

POLIKAROV, A.

Atomnata energiia dvigatel na budeshteto; obshtodostupno razglezhdane s 50 figuri.

Sofiia (Kn-vo-Luch) 1945. 125 p.
atomic energy, motive power of the future; a popular study.

sc. EAST EUROPEAN ACCESSIONS LIST VOL. 5, no. 7 July 1956

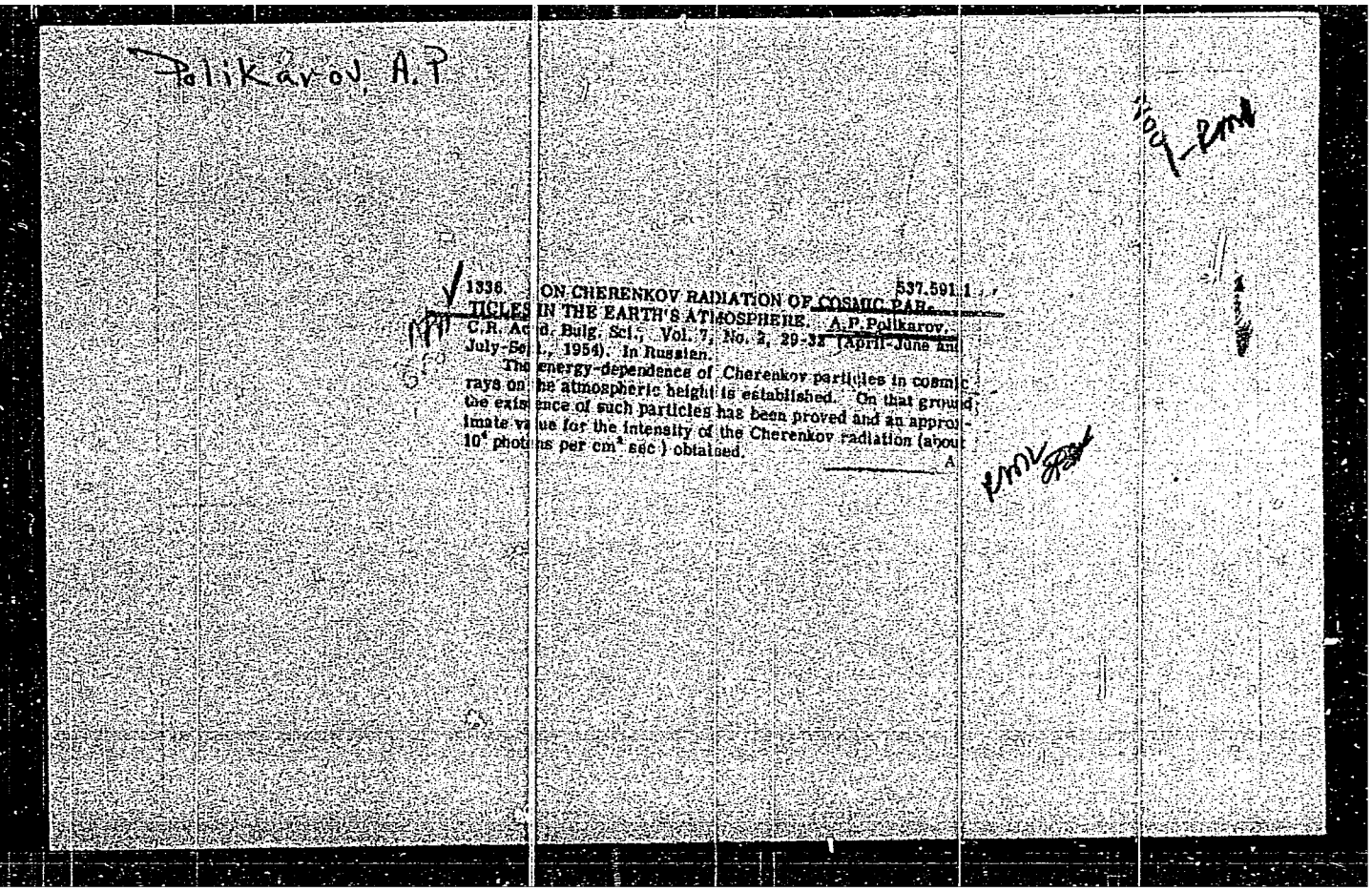
POLIKAROV, A.

POLIKAROV, A. Letter to the editorial staff of the Comptes Rendus of the Bulgarian Academy of Sciences. In Russian. p. 5. Vol. 9, no. 1, Jan./Mar. 1956. DOKLADY., Sofiia, Bulgaria

SOURCE: East European Accessions List (EEAL) Vol. 6., No. 4 April 1957

YEROFEYEV, Nikolay Ivanovich; POLIKARPOV, A.D., inzh., retsenzent; KUROCHKIN, A.Ye., inzh., retsenzent; REKHTMAN, I.G., inzh., retsenzent; SKOBELING, L.V., red.; USANOVA, N.B., tekhn. red.

[Gantry cranes]Portal'nye krany. Moskva, Morskoi transport, 1962. 561 p. (MIRA 16:2)
(Cranes, derricks, etc.)



Polikarov, A.P.

1336. ON CHERENKOV RADIATION OF COSMIC PAR... 537.591.1
TICLES IN THE EARTH'S ATMOSPHERE. A.P.Polikarov.
C.R. Acad. Bulg. Sci., Vol. 7, No. 2, 29-32 [April-June and July-Sept., 1954). In Russian.
The energy-dependence of Cherenkov particles in cosmic rays on the atmospheric height is established. On that ground the existence of such particles has been proved and an approximate value for the intensity of the Cherenkov radiation (about 10^4 photons per cm^2 sec) obtained.
A

POLIKAROV, A.P.

24(5) P.4 PHASE I BOOK EXPLOITATION SOV/3313

Akademiya nauk SSSR. Institut filosofii

Filosofskiye voprosy sovremennoy fiziki [sbornik]; (Philosophical Problems of Modern Physics; Collection) Moscow, Izd-vo AN SSSR, 1959. 426 p. Errata slip inserted. 7,000 copies printed.

Ed.: I. V. Kuznetsov and M. E. Omel'yanovskiy; Ed. of Publishing House: V. K. Moroz; Tech. Ed.: S. G. Markovich.

PURPOSE: This book is intended for physicists but may be read gainfully by other scientists and the educated layman interested in the philosophical questions of advanced physics.

COVERAGE: This book contains 12 articles on philosophical problems in physics. Problems are divided into three subject divisions: 1) general problems; 2) problems of quantum theory; 3) problems in the theory of relativity. The views of Einstein, Bohr, Born, Planck, Pauli, Schrödinger, Heisenberg, Janossy, et al. are presented, and subjected to criticism from the Soviet side by Omel'yanovskiy, Polikarov, Fok, et al. Questions dealing

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with idealism, agnosticism, and dialectical materialism in the philosophy of physics are discussed. This collection of articles is the third in a series under the same title. Earlier volumes were published in 1952 and 1958. References accompany each article.

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AVAILABLE: Library of Congress

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TM/os
3/17/60

BLIZNAKOV, G.; POLIKAROVA, R.; BAKYRDZHIYEV, I.

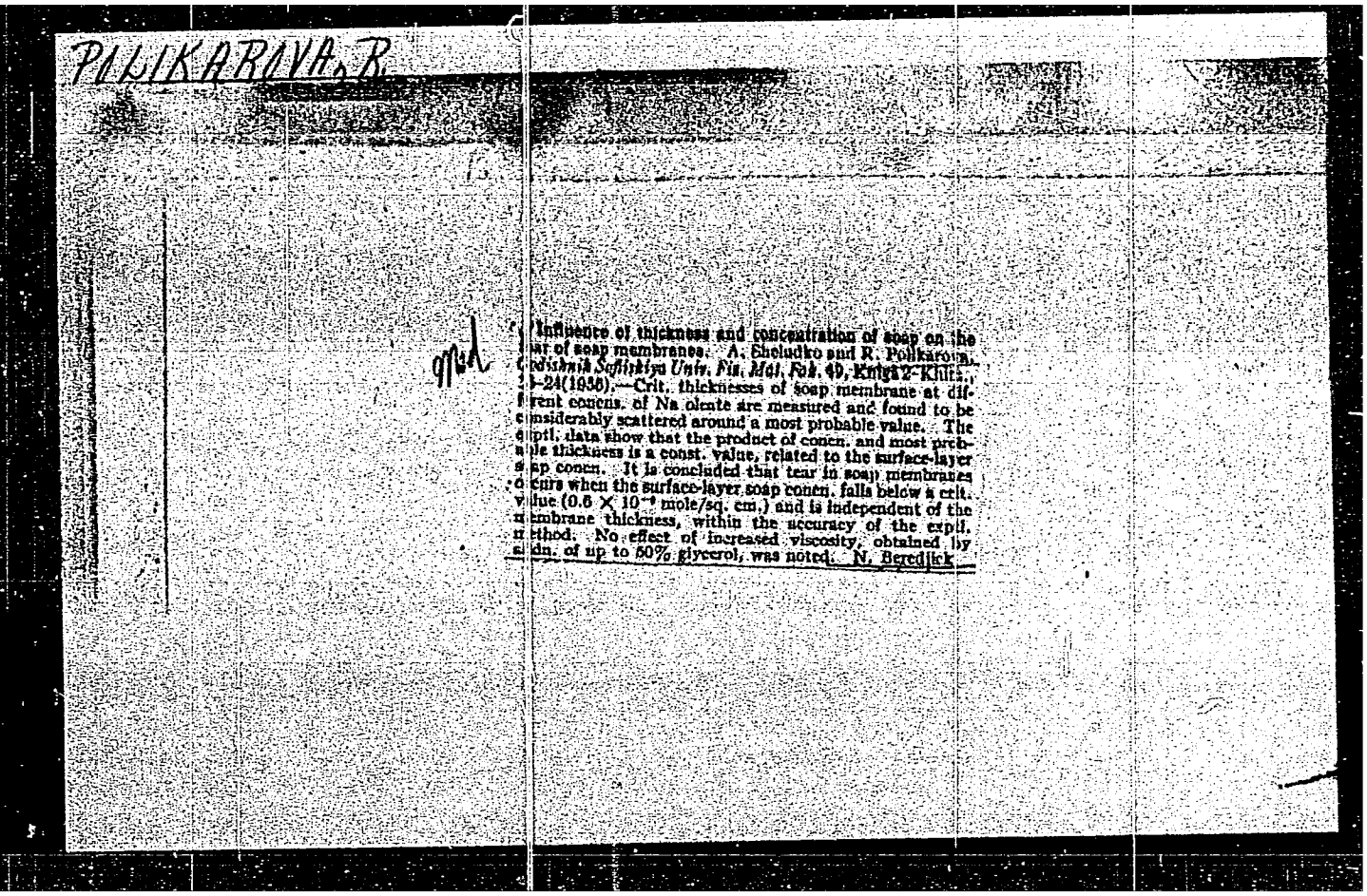
Adsorption of ammonia on methoxylated silica gel surfaces.
Dokl. AN SSSR 153 no.5:1097-1100 D '63. (MIRA 17:1)

1. Institut obshchey i neorganicheskoy khimii Bolgarskoy Akademii nauk, Sofiya, Bolgariya.

POLIKAROVA, R.

BULG.

Electro-titrimetric pH determination with antimony electrodes. A. S[illegible] and R. Polikarova. *Compt. rend. Acad. bulgare sci.* 6, No. 2, 17-20(1953)(Pub. 1954)(in Russian).—A method is described for pH detn. Two Sb electrodes are used, connected by a galvanometer, one contg. the unknown soln. and the other to which is added buffer soln. from a buret. Acetate, phosphate, and borate buffers are used to cover the pH range 3.6–11.0. After addition of buffer to null point, a repeat detn. is made by interchanging the 2 electrodes. Given the voltage-pH curves of the 2 electrodes, the 2 apparent pH values calcd. from the buffer concn., which agree within 0.1–0.2 pH units, are plotted on the respective electrode curves. The 2 pH values for the unknown agree within 0.01 pH units when calcd. by the pot.-slope formula, if solns. are sufficiently pure. The method gives results accurate to 0.02 pH units (compared with glass electrode) on bacteriol. media, milk, beer, and blood serum. Interferences include citrates which poison (darken) the electrodes. In alk. pH (9–10), this method gives better results than does the glass electrode, and there are no anomalies, even to pH 12.0. This same technique can be used with Ag electrodes to measure Ag ions with an accuracy of 0.4%. A. W. Daly



POLIKARPOV, R.

Influence of thickness and concentration of soap on the ... of soap membranes. A. Sheludko and R. Polikarova. ... Godishnik Sofiiskiya Univ. Fiz. Mat. Fak. 49, Kniga 2-Khim., ... 9-24(1956).—Crit. thicknesses of soap membrane at different concns. of Na oleate are measured and found to be considerably scattered around a most probable value. The optl. data show that the product of concn. and most probable thickness is a const. value, related to the surface-layer soap concn. It is concluded that tear in soap membranes occurs when the surface-layer soap concn. falls below a crit. value (0.6×10^{-9} mole/sq. cm.) and is independent of the membrane thickness, within the accuracy of the expil. method. No effect of increased viscosity, obtained by addn. of up to 50% glycerol, was noted. N. Beredjick

KHRUSHCHOV, N.A.; KOSOV, B.M.; POLIKARPOCHKIN, V.V.; BRITAYEV, M.D.; TARKHOV, A.G.; SHCHERBAKOV, A.V.; KREYTER, V.M., glavnyy red.; SHATALOV, Ye.T., zamestitel' glavnogo red.; YEROFEYEV, B.N., red.; ZENKOV, D.A., red.; KRASNIKOV, V.I., red.; NIFONTOV, R.V., red.; SMIRNOV, V.I., red., YAKZHIN, A.A., red.; VERSTAK, I.V., red. izd-va; AVERKIYEVA, T.A., tekhn. red.

[Prospecting for molybdenum, tungsten, tin, bismuth, antimony, and mercury deposits] Razvedka mestorozhdenii molibdena, vol'frama, olova, vismuta, sur'my i rtuti. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geol. i okhrane nedr, 1957. 130 p. (Metodicheskie ukazaniia po proizvodstvu geologo-razvedochnykh rabot, no.6). (MIRA 11:1)
(Ore deposits) (Prospecting)

POLIKARPOCHKIN, V.V.; POLIKARPOCHKINA, R.T.; SERGEYEV, Ye.A., kand. geol.-miner. nauk, otv. red.

[Biogeochemical prospecting for mineral deposits] Biogeokhimicheskie poiski mestorozhdenii poleznykh iskopaemykh. Moskva, Izd-vo "Nauka," 1964. 104 p. (MIRA 17:5)

POLIKARPOCHKIN, V.V.; KAS'YANOV, I.V.; UTGOF, A.A.

Geochemical prospecting for east Transbaikalian complex metal deposits based on channel silts, surface and ground waters. Trudy VITR no.1:46-73 '58. (MIRA 12:1)
(Transbaikalia--Geochemical prospecting)

SAFRONOV, N.I.; POLIKARPOCHKIN, V.V.; UTGOF, A.A.

Spectral aurimetric survey as a method of prospecting for gold deposits without mechanical aureoles (placers). Trudy VITR no.1:100-103 '58. (MIRA 12:1)
(Gold ores--Spectra)

SAFRONOV, N.I.; POLIKARPOCHKIN, V.V.; UTGOF, A.A.

Experimental studies of the aurimetric prospecting method in eastern Transbaikalia [with summary in English]. Sov.geol. 1 no.7:130-137 Jl '58. (MIRA 11:11)

1. Vsesoyuznyy institut metodiki i tekhniki razvedki.
(Transbaikalia--Gold ores) (Prospecting)

SAFRONOV, N. I.; POLIKARPOCHKIN, V. V.; TRUSHKOV, Yu. N.

Combined of prospecting for gold deposits. Sov. geol. 3 no.4:92-110 Ap '60. (MIRA 13:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metodiki i tekhniki razvedki.

(Gold ores) (Prospecting)

POLIKARPOCHKIN, V.V.; KOROTAYEVA, I.Ya.; GRECHKINA, Ye.A.; GAPONTSEV, G.P.

Relationship between the liquid and solid phases of stray flux. Geokhimiia no.2:199-210 F '65. (MIRA 18:6)

1. Institut geokhimii Sibirskogo otdeleniya AN SSSR, Irkutsk.

TAUSON, L.V., doktor geol.-miner. nauk, otv. red.; DUBOV, R.I., red.; POZHARITSKAYA, L.K., red.; POLIKARPOCHKIN, V.V., red.; SERGEYEV, Ye.A., red.; KLIMTSOVA, I.A., red.izd-va; SIMKINA, G.S., tekhn. red.

[Geochemistry of ore deposits] Geokhimiia rudnykh mestorozhdenii. Moskva, Izd-vo "Nauka," 1964. 130 p. (MIRA 17:4)

1. Akademiya nauk SSSR. Sibirskoye otdeleniye. Institut geokhimii.

POLIKARPOCHKIN, V.V.; POLIKARPOCHKINA, R.T.; SERGEYEV, Ye.A., kand. geol.-miner. nauk, otv. red.; MISHINA, V.L., red. izd-va; POLYAKOVA, T.V., tekhn. red.

[Biogeochemical prospecting for mineral deposits] Biogeokhimicheskie poiski mestorozhdenii poleznykh iskopaemykh. Moskva, Izd-vo "Nauka," 1964. 104 p. (MIRA 17:3)

POLIKARPOCHKIN, V.V.

Geochemical search for ore deposits by stray fluxes. Sov.geol. 5 no.4:63-76 Ap '62. (MIRA 15:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metodiki i tekhniki razvedki.

(Geochemical prospecting)

POLIKARPOCHKIN, V.V.; POLIKARPOCHKINA, R.T.; SERGEYEV, Ye.A., kand. geol.-miner. nauk, otv. red.

[Biogeochemical prospecting for mineral deposits] Biogeokhimicheskie poiski mestorozhdenii poleznykh iskopaemykh. Moskva, Izd-vo "Nauka," 1964. 104 p. (MIRA 17:5)

POLIKARPOCHKIN, V.V.; POLIKARPOCHKINA, R.T.; SERGEYEV, Ye.A., kand. geol.-miner. nauk, otv. red.; MISHINA, V.L., red. izd-va; POLYAKOVA, T.V., tekhn. red.

[Biogeochemical prospecting for mineral deposits] Biogeokhimicheskie poiski mestorozhdenii poleznykh iskopaemykh. Moskva, Izd-vo "Nauka," 1964. 104 p. (MIRA 17:3)

POLIKARPOV, A.

Limiting the issue of materials constitutes a means for reducing expenditures in railroad transportation. Bukhg. uchet. 15 no.11:20-22 N '56. (MLRA 9:12)

(Locomotives--Repairs--Accounting)

POLIKARPOV, A.

Some problems in the expansion of harbors. Mor. flot 23 no.11:9-11 N '63. (MIRA 16:12)

1. Nachal'nik Glavnogo upravleniya portovogo khozyaystva.

POLIKARPOV, A.

Reduction of idle time for ships in harbors. Mor.flot 17 no.2:7-8 F '57. (MLRA 10:3)

1. Nachal'nik Upravleniya protovogo khozyaystva i mekhanizatsii Ministerstva morskogo Flota.
(Harbors) (Freight and freitage)

POLIKARPOV, A.

Harbor operations have to be on the level with present-day tasks.
Mor.flot 21 no.2:1-3 F '61. (MIRA 14:6)

1. Nachal'nik Glavnogo upravleniya portovogo khozyaystva i morskikh putey Ministerstva morskogo flota.
(Harbors)

POLIKARPOV, A.

Results of the general inspection of work organization and the mechanization of loading and unloading operations in harbors. Mor. flot 21 no.8:16-17 Ag '61. (MIRA 14:9)
(Harbors) (Cargo handling)

POLIKARPOV, A. A., Eng.

Peat Industry

Experience with the preparation for the peat season. Torf. prom. 30, No. 4, 1953.

SO: Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

SHPITSMAKHER, O.A., inzhener; RYABCHIKOV, M.Ya.; POLIKARPOV, A.A., inzhener; GAMYGIN, L.A., inzhener.

Concerning the work of MPT machines in moving drainage pipes during the 1953 season. Torf.prom. vol. 30 no.11:7-14 N-D '53. (MLRA 6:11)

1. Karinskoye torfopredpriyatiye (for Shpitsmakher). 2. Chernoramenskiy torfotrest (for Ryabchikov). 3. Orekhovo-Zuyevskiy torfotrest (for Polikarpov). 4. Shaturskiy torfotrest (for Gamygin). (Peat industry)

ZYUZIN, F.S.; POLIKARPOV, A.A.; VARENTSOV, V.S., redaktor; SKVORTSOV, I.M., tekhnicheskiy redaktor

[Innovators in peat interprises of the Orekhovo-Zuyevo peat trust] Novatory torfopredpriiatii Orekhovo-Zuevskogo torfotresta. Moskva, Gos. energ. izd-vo, 1956. 31 p. (MLRA 10:2)
(Orekhovo-Zuyevo—Peat industry)

POLIKARPOV, A.A., inzhener; ZYUZIN, F.S., inzhener.

UMPT-4 machine with a peat-milling drum. Torf.prom. 33 no.3: 13-15 '56. (MIRA 9:7)

1.Orekhovo-Zuyevskiy torfotrest.
(Peat machinery)

POLIKARPOV, A.A., inzh.; ZYUZIN, F.S., inzh.

Operation of UMPT-4 peat-winning machines fitted with milling drums. Torf.prom. 35 no.2:16-17 '58. (MIRA 11:5)

1. Orekhovo-Zuyevskiy torfotrest.
(Peat machinery)

POLIKAROV, A.

A connection between the masses of elementary particles. Doklady BAN 17 no.4:385-386 '64.

1. Predstavleno akad. Khr. Khristovym.

POLIKARPOV, A.

Some problems of organizing transportation to foreign countries.
Mor.flot 15 no.8:5-8 Ag'55. (MLRA 8:10)

1. Nachal'nik Chernomorskogo parokhodstva
(Shipping)

POLIKARPOV, A.D.

SHAPIROVSKIY, David Borisovich; OBERMEYSTER, Arkadiy Mikhaylovich; POLIKARPOV, A.D., red.; ALEKSANDROV, L.A., red.izd-va; BEGICHEVA, M.N., tekhn. red.

[Development of Soviet seaports] Razvitie morskikh portov SSSR. Pod red. A.D.Polikarpova. Moskva, Izd-vo "Morskoi transport," 1957. 169 p. (MIRA 11:4)
(Harbors)

POLIKARPOV, A.

For further improvement in the structure of harbor installations.
Mor. flot. 18 no.12:9-10 D '58. (MIRA 12:1)

1.Nachal'nik Glavnogo upravleniya portovogo khozyaystva i morskikh putey Ministerstva morskogo flota.
(Harbors--Equipment and supplies)
(Loading and unloading)

POLIKARPOV, A.

More widespread introduction of over-all mechanization in harbors.
Mor.flot 19 no.8:15-16 Ag '59. (MIRA 12:11)

1. Nachal'nik Glavnogo upravleniya portovogo khozyaystva i morskikh putey Ministerstva morskogo flota.
(Harbors) (Cargo handling)

KURKOVSKIY, V.P.; POLIKRPOV, A.F.; SHINKAREV, M.N.

Morphological modifications of lumbosacral intervertebral ganglia gollowing high ligation of the abdominal aorta. Biul.eksp. biol. i med. 42 no.9:64-67 S '56. (MLRA 9:11)

1. Iz neyromorfologicheskoy laboratorii (rukovoditel' - prof. V.P. Kurkovskiy) kafedry fiziologii voyennogo truda (nach. - prof. M.P. Brestkin) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova, Leningrad. Predstavlena akademikom N.N.Anichkovym.

(GANGLIA, AUTONOMIC, physiology,
lumbosacral intervertebral ganglia, eff. of ligation of abdom. aorta (Rus))
(AORTA, physiology,
eff. of ligation of abdom. portion on intervertebral lumbosacral ganglia (Rus))

POLIKARPOV, A. P.

USSR/Chemical Technology - Chemical Products and Their Application. Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62247

Author: Polikarpov, A. P.

Institution: None

Title: Supercooled Slag of Donets Coal of "T" Brand

Original Periodical: Tr. Kazansk. S.-kh. in-ta, 1956, No 35, 208-212

Abstract: It is proposed to utilize liquid slag discharged from boiler furnaces of TETs [Heating and Power Plant] for the manufacture of various cheap articles, for example slag staple fibers, felting, "slag-filled concrete." These materials possess high heat insulating properties which make it possible to reduce the weight of wall slabs and large blocks. It is pointed out in particular that heat savings in intermittently operating furnaces with walls made from slag-filled concrete in lieu of refractory brick amount to 20-50%.

Card 1/1

MITROFANOV, V.M.; POLIKARPOV, A.P.; GNEDASH, G.N., red.; KRISHTAL', L.I., red.; KHITROV, P.A., tekhn.red.

[Bookkeeping and economic analysis of the operations of a locomotive depot] Bukhgalterskii uchet i analiz khoziaistvennoi deiatel'nosti lokomotivnykh depo. Moskva, Gos.transp.zhel-dor. izd-vo, 1959. 198 p. (MIRA 13:1)
(Railroads--Repair shops)

POLIKARPOV. A.V., inzh.

Small rotating air distributor. Sudostroenie 26 no.9:17-18 S'60. (MIRA 13:10)

(Ships--Heating and ventilation)

POLIKARPOV, B.A.

POLIKARPOV, B.A.; SEMAK, Z.F.

Foundry shop practice in working with investment patterns.
Sel'khozmashina no.10:26-27 O '57. (MLRA 10:9)

1. Noginskiy zavod toplivnoy apparatury.
(Precision casting)

STERENBOGEN, Yu.A.; KHORUNOV, V.F.; GRETSKIY, Yu.Ya.; KUZNETSOV, V.I. (Moskva); POLIKARPOV, B.S. (Moskva); KARPOV, N.P. (Moskva)

Welding high-strength cast iron to steel with a thin electrode wire in carbon dioxide. Avtom. svar. 15 no.7:61-67 Jl '62. (MIRA 15:7)

1. Ordena Trudovogo Krasnogo Znameni institut elektrosvarki imeni Ye.O. Patona AN USSR (for Sterenbogen, Khorunov, Gretskiy).
(Cast iron--Welding) (Steel--Welding)

STERENBOGEN, Yu.A.; KHORUNOV, V.F.; KUZNETSOV, V.I. (Moskva); POLIKARPOV, B.S. (Moskva)

Welding steel layers on high-strength cast iron parts by means of electrode ribbons. Avtom. svar. 15 no.2:20-26 F '62. (MIRA 15:1)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O.Patona AN USSR.

(Metal cladding)

ACC NR: AP6032533 SOURCE CODE: UR/0413/66/000/017/0133/0133

INVENTOR: Kushnerev, D. M.; Svetlinskiy, V. G.; Kir'yakov, V. M.; Kuznetsov, V. I.; Polikarpov, B. S.

ORG: none

TITLE: Ceramic flux for submerged arc welding of high-strength steels. Class 49, No. 185676 [announced by the Electric Welding Institute im. Ye. O. Paton, AN UkrSSR (Institut elektrosvarki AN UkrSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 17, 1966, 133

TOPIC TAGS: automatic welding, high strength steel welding, ARC WELDING, CERAMIC MATERIAL

ABSTRACT: This Author Certificate introduces a ceramic flux for submerged arc welding of high-strength steels containing calcium fluoride, rutile concentrate, ferrotitanium, and ferromanganese. To improve the mechanical properties of welded joints and the technological properties of the flux, 5—12% quartz sand, 3—6% manganese ore, 4—6% manganese metal, 1% aluminum powder, and 18—24% sodium disilicate are added to the flux composition. The rest of the components are taken in the following proportion: 10—18% fluorspar, 30—40% rutile concentrate, 0—2% ferrotitanium and 3—5% ferro manganese.

SUB CODE: 13/ SUBM DATE: 23Jan65/

Card 1/1 UDC: 621.791.048

S/125/62/000/002/003/010
D040/D113

AUTHORS: Sterenbogen, Yu.A, and Khorunov, V.F.(see Association); Kuznetsov, V.I., and Polikarpov, B.S. (Moscow)

TITLE: Surfacing parts of high-strength cast iron with a steel layer using an electrode band

PERIODICAL: Avtomaticheskaya svarka, no.2, 1962, 20-26

TEXT: Results are given of experiments in which cylindrical specimens of magnesium-inoculated BCh 40-10 (VCh 40-10) high-strength cast iron were surfaced with low-carbon steel, steel elements being subsequently welded to the steel coating. In previous welding experiments, it was found impossible to directly weld steel parts to cast iron of this type, because of the brittle carbide zone which forms in the fusion line; this was also observed by P.S.Bazhenov (Ref.2: "Svarochnoye proizvodstvo", no.3, 1955) in experiments with steel, iron-nickel and magnesium-treated electrodes. The chemical composition of VCh 40-10 cast iron is (in %): 3.2-3.5 C, 0.2-0.5 Mn, 3.2-3.6 Si, 0.008-0.015 S, 0.037-0.048 P.

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Surfacing parts of high-strength cast ...

A low-carbon steel band of 0.8 or 1.0 grade per ГОСТ 503-41 (GOST 503-41) served as electrode and an АН-60(AN-60) high-manganese flux was used. An АДС-1000-2 (ADS-1000-2) tractor operating on reversed-polarity current was used for welding. An electrode band, 0.4 x 70 mm in cross section, produced a smooth coating at 580-620 amp, 28-30 v, and 6-15 m/hr welding speed. For an electrode 0.25 x 40 mm in cross section, the proper current was 300-320 amp. A high-manganese AN-60 flux was used despite the resultant increased Mn content in the coating, since the shape of the coating was bad using two manganese-free fluxes АН-28 (AN-28) and АН-5 (AN-5). The coatings were applied in two layers, and steel parts welded to the steel coating by manual welding using УОНИИ-13/55 (UONII-13/55) electrodes. Perlite-sorbite structure formed in the first layer at 13 m/hr welding speed with 0.4 x 70 mm electrode band, and ferrite-perlite structure in the second layer. Experimental weldments weighing 200 kg were tested for strength of joints on a 100-ton tension test machine and a vibrating test stand. It was concluded that the strength of bond between the cast iron body and coating was five to seven times greater than the strength requirements for welded joints with steel parts. There are 4 figures, 3 tables and 6 Soviet references.

Card 2/3

POLIKARPOV, B.V.; FEDOTOV, P.I.; RUDNEV, A.A.

Prophylaxis of hog cholera. Veterinariia 39 no.8:34-37 Ag '62. (MIRA 17:12)

1. Glavnyy veterinarnyy vrach Lyuberetskogo rayona, Moskovskoy oblasti (for Polikarpov). 2. Glavnyy veterinarnyy vrach sovkhoza "Belaya dacha", Lyuberetskiy rayon, Moskovskoy oblasti (for Fedotov). 3. Glavnyy veterinarnyy vrach sovkhoza imeni Mossoveta, Lyuberetskiy rayon, Moskovskoy oblasti (for Rudnev).

DERBENEVA-UKHOVA, V.P.; LINEVA, V.A.; ZAKHAROVA, N.F.; TIMOSHKOV, V.V.; POLIKARPOV, B.V.

Entomological prerequisites for the elaboration of sanitary measures in animal husbandry and vegetable-growing farms of the central cone of the Soviet Union. Med. paraz. i paraz. bol. 33 no.1:3-9 Ja-F '64 (MIRA 18:1)

1. Otdel entomologii (zav. - prof. V.P. Derbeneva-Ukhova) Instituta meditsinskoy parazitologii i tropicheskoy meditsiny imeni Ye.I. Martsinovskogo (direktor - prof. P.G. Sergiyev) Ministerstva zdravookhraneniya SSSR, i parazitologicheskiy otdel (zav. - A.S. Stepenko) Moskovskoy gorodskoy sanitarno-epidemiologicheskoy stantsii (glavnyy vrach - M.S. Sokolovskiy).

POLIKARPOV, B. V. (District Head Veterinary Doctor), FEDOTOV, P. I. (Head Veterinary Doctor of the "Belaya Dacha" Sovkhoz) and RUDNEV, A. A. (Head Veterinary Doctor of the Sovkhoz imeni Mossoveta [Moscow Council], Lyuberetskii District, Moscow Oblast')

"Experience in the use of prophylaxis against swine plague"

Veterinariya, vol. 39, no. 8, August 1962 pp. 34

ACCESSION NR: AP4022663 S/0207/64/000/001/0131/0134

AUTHORS: Bakhman, N. N. (Moscow); Belyayev, A. F. (Moscow); Lukashenya, G. V. (Moscow); Polikarpov, D. P. (Moscow)

TITLE: The relation between the combustion rate of ammonia perchlorate and its density

SOURCE: Zhurnal priklad. mekhan. i tekhn. fiz., no. 1, 1964, 131-134

TOPIC TAGS: combustion, combustion rate, casing, combustion heat, heat loss, condensed system, gas phase, solid phase, particle size, chamber pressure, porosity, density, relative density

ABSTRACT: The combustion rate (u cm/sec) of compacted systems depends on the relative density δ of the sample where δ is equal to the ρ/ρ_{max} ratio. Here ρ gm/cm^3 represents the actual and ρ_{max} the potentially possible density of the given sample. The shape of the u curve depends, in turn, upon the conditions under which the reaction takes place and on the existing heat losses. The present investigation was performed on compacted ammonium perchlorate in a constant pressure tank in an atmosphere of nitrogen. The first series of tests was conducted

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ACCESSION NR: AP4022663

on a charge 10 mm in diameter encased in an inert coat of cement-phosphate or glass. It was observed that low values of relative density δ diminished the combustion rate, the combustion even becoming incomplete at δ= 0.75-0.65. In order to assess the role of heat loss, the second series of experiments was carried out in plexiglass containers with a 6-mm internal diameter. The result showed that with a lower δ the combustion rate was increased. In the third series of experiments, 2% hexamethylenetetramine were added to the ammonium perchlorate in a plexiglass casing. It was found that here a lowering of δ caused even a slight increase in the combustion rate. In the fourth series, 2% Cu_2O was added as a catalyst, which accelerated the reaction rate and reduced the zonal width of the reaction. The fifth series was conducted with pure ammonium perchlorate at a higher initial temperature. This caused the combustion rate to increase. The incorporation of small amounts of asphalt had an inhibitory effect on the combustion rate, while larger quantities enhanced it. Orig. art. has: 5 tables.

ASSOCIATION: none

SUBMITTED: 30Jul63 DATE ACQ: 08Apr64 ENCL: 00

SUB CODE: MA NO REF SOV: 000 OTHER: 002

Card 2/2

POLIKARPOV, D.P.; BAKHMAN, N.N.

Propagation of a flame along the contact surface of metals with solid oxidizers. Inzh.-fiz. zhur. 5 no.7:11-17 Jl '62. (MIRA 15:7)

1. Institut khimicheskoy fiziki AN SSSR, Moskva.
(Flame) (Oxidizing agents)

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E194/E155

1k 2000

AUTHORS: Bakhman, N.N., and Polikarpov, D.P. (Moscow)

TITLE: Heterogeneous combustion in a system with condensed components

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1961, No.4, pp. 37-42

TEXT: This article describes investigations of flame propagation along flat and cylindrical surfaces of contact between a number of solid inorganic oxidising materials which cannot burn when pure ($KClO_4$, $KClO_3$, $KMnO_4$, BaO_2) and the following solid fuels: polymethylmethacrylate, polyethylene, polystyrol, polyvinylchloride, and others. The tests were made in nitrogen atmosphere at pressures between 0 and 100 atm. The system was ignited by a nichrome heating coil on the upper end. Combustion was usually energetic with a large flame. A wedge-shaped furrow is formed in the layer of fuel and it moves together with the flame. The oxidation products used, after combustion, give rise to condensation products which distort the shape of the furrow formed in the layer of oxidising materials. Thus when $KClO_4$ and

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Heterogeneous combustion in a system ...

$KClO_3$ are burned, large drops of KCl are formed which cover a considerable part of the surface of fresh oxidising material. The relationship between the speed of propagation and the dimensions of the layer of oxidising material are first considered. Tests were made in a system consisting of a flat disc of variable thickness of oxidising material between two thick layers of fuel. The flame velocity was measured photographically, and curves are plotted of the relationship between the rate of propagation and the thickness of the oxidising material sample. A number of experimental factors are discussed, including the influence of the chemical nature of the components, the influence of pressure, and that of the relative density of the oxidising material. Tests of the combustion of films of variable thickness deposited on a thick backing are described. The shape of the furrow formed by combustion in a flat sheet of polymethylmethacrylate with $KClO_4$ was measured. The angle of combustion α which is the angle between the tangent to the profile of the furrow at a given point and the direction of propagation of the flame, diminishes steadily as the distance from the start of the flame increases. As the rate of propagation of the flame increases the thickness of the layer of

oxidising material is reduced and the angle of combustion becomes more acute, i.e. the furrow becomes deeper. It is concluded that the propagation of flame along a surface of contact between a solid fuel and an oxidising substance, under the conditions used, involves gasification of components by heat from the flame; mixing due to interaction between flows moving in different directions and due to molecular diffusion; heating of the decomposition products of the initial components and subsequent combustion. It is difficult to explain the physical meaning of the rate of flame propagation along the surface of contact. However, the following conclusions may be drawn. The rate of flame propagation essentially depends only on those processes which take place in a small zone near the flame tip. Some conclusions about the meaning of the flame propagation speed may be based on measurements of the shape of the furrow formed in the sheet of fuel as combustion proceeds. The shape of the furrow in the layer of oxidising material cannot be measured reliably because of condensed combustion products. For the shape of the groove to be steady, in unit time all points on its surface should be displaced

in the direction of flame propagation by equal amounts and, therefore, for any point of the contour:

$$\frac{u}{v} = \sin \alpha \qquad (1)$$

where: u is the normal rate of gasification, and α is the angle of combustion of the fuel at the given point. The normal rate of gasification is simply related to the heat flux q from the flame by the expression:

$$\rho u \left[c(T_m - T_0) + \lambda\right] = q \qquad (2)$$

in which all magnitudes relate to the hot fuel, T_m is the surface temperature and λ the specific heat of gasification. These values depend very little on u and, therefore, u is approximately proportional to q. By means of expressions (1) and (2) the heat flux at any point may be determined from the shape of the furrow. In particular, where the surface of the furrow becomes almost parallel with the initial surface of the plate (combustion angle nearly zero) the heat flux also tends to zero.

At the actual tip, Eq.(1) should give either $u_* = v$, $\alpha_* = \pi/2$ or $u_* < v$, $\alpha_* = \arcsin u_*/v$. In the first of these cases, v is the normal rate of combustion which is a maximum in relation to all the remaining points on the contour of the furrow. In the second case v is the rate of flame propagation on the surface of the fuel. Examination of processes on the flame tip requires rather precise tests and may lead to different results for different systems. The second case considered above appears the most probable for the system of methylmethacrylate and $KClO_4$ which was the one most studied. In many cases the tip may be considered as a special point, whose speed of motion depends on the pressure p, and the typical dimension of the layer of the component d. The rate is different from the normal rate of gasification at quite a small distance from the tip.
There are 7 figures and 1 Soviet reference.

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BAKHMAN, N.N. (Moskva); BELYAYEV, A.F. (Moskva); LUKASHENYA, G.V. (Moskva); POLIKARPOV, D.F. (Moskva)

Dependence of the burning rate of ammonium perchlorate on the density of the specimen. PMTF no.1:131-134 Ja-F '64. (MIRA 17:4)

38600
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B178/B104

11.7200
11.2331

AUTHORS: Polikarpov, D. P., Bakhman, N. N.

TITLE: Propagation of a flame along the surface of a metal contact with solid oxidizing agents

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TEXT: The process of flame propagation along the surface of a metal contact (Al and W powder) with solid oxidizing agents ($KClO_4$, BaO_2, $Ba(NO_3)_2$, Ag_2O, PbO_2, MnO_2, CuO, Co_2O_3, PbO, Fe_2O_3, SnO, ZnO, and Cr_2O_3) was investigated.. At low densities of the two components, the metal powder was put into a bag made of tracing paper and surrounded by a metal shell. The oxidizing agent was filled into the space between the bag and the shell. At a high density of the oxidizing agent ($\bar{\rho}$ = 0.95) and varying density of the metal powder, the oxidizing agent was pressed into a metal shell, and the metal powder was pressed into a hole drilled into the oxidizing agent. The experiments were carried out in air at zero pressure and in nitrogen at a pressure equal to or less than 100 atm. The velocity of flame

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