L 34977-65

ACCESSION NR: AP5004163 S/0076/65/039/001/0236/0239

AUTHOR: Zhuravlev, L. T.; Zubarev, A. F.; Polyakov, A. L.; Titov, L. N. 13 11 B

TITLE: An electronic recording manometer for low pressures in gases and vapors

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 1, 1965, 236-239

TOPIC TAGS: manometer, recording manometer, vapor pressure

ABSTRACTS: The purpose of this work was to design a sensitive recording manometer. The main part of the instrument is the resistance bridge shown in Figure 1 of the Enclosure. The arms with thin incandescent platinum filaments 1,1' and 2,2' are the sensing elements. When the mean free molecular path becomes approximately the same or greater than the diameter of the filament, the transfer of heat from the filament and consequently the electrical resistance of the filament are functions of gas pressure. If the resistance in reference arms 2,2' is kept constant by maintaining a constant known gas pressure in these elements, then the imbalance in the bridge due to changes in the resistance of filaments 1,1' may be found from changes of gas pressure in the system connected to arms 1,1'. The temperature of the filaments is maintained at 200 - 300° C. The article shows the basic a.c. amplifier circuit and scale switch. The vacuum system of this manometer is shown in

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L 34977-65

ACCESSION NR: AP5004163

2

Figure 2 of the Enclosure. Arms 1,1' and 2,2' are kept in a thermostat operating at +32± 0.02° C. Calibration of this manometer with the water vapor pressure on the least sensitive scale of the instrument shows that the sensitivity of the recording potentiometer is about 0.02 mm Hg per mm of recorder deflection. On the most sensitive scale setting of the manometer its sensitivity is increased by one order of magnitude to approximately 0.002 mm Hg per mm deflection. The upper limit was experimentally found to be 15 - 20 mm Hg. Above these pressures the manometer loses its sensitivity. Orig. art. has: 5 figures.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences SSSR); Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 04Sep63 ENCL: 02 SUB CODE: ME, GC

NO REF SOV: 003 OTHER: 002

Card 2/4

L 34977-65

ACCESSION NR: AP5001363

ENCLOSURE: 01

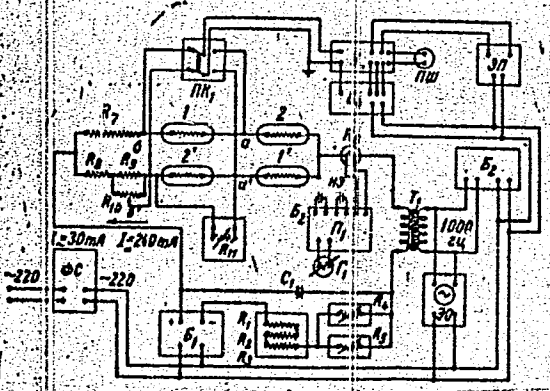

Fig. 1. Schematic diagram of the marometer: 1,1', 2,2'--bridge arms

R_1 = 420 ohms, R_2 = 470 ohms, R_3 = 250 ohms, R_4 = 1500 ohms (variable), R_5 = 100 ohms (variable), R_6 = 0.1 ohm, R_7 = 52 ohms, R_8 = 42 ohms, R_9 = 10 ohms, R_{10} = 1000 ohms (variable), R_{11} = 10,000 ohms (variable), C_1 = 1μf

Card 3/4

L 34977-65

ACCESSION NR: AP5003363

ENCLOSURE: 02

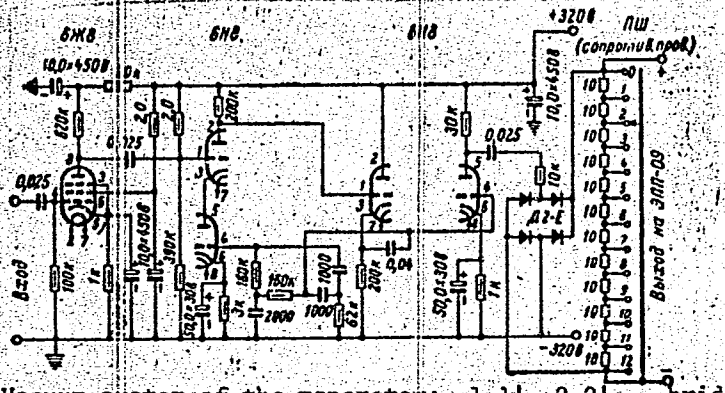

Fig. 2. Vacuum system of the manometer: 1,1', 2,2' -- bridge arms 3, 4 -- copper block and housing of the liquid thermostat (+32°C); 5 -- Beckmann thermometer; 6, 7 -- copper rods; 8 -- ice thermostat; 9-14, 17-19 -- vacuum stopcocks; 15, 16 -- traps; 20 -- ampules with adsorbent; 21 -- furnace; 22 -- circulating pump

Card 4/4

ZHURAVLEV, L.T.; KISELEV, A.V.; NAYDINA, V.P.; POLYAKOV, A.L.

Determination of surface and internal "structural water" of a silica gel by the deuterium exchange method with mass spectrometric control. Zhur. fiz.khim. 37 no.10:2258-2265 O '63. (MIRA 17:2)

1. Institut fizicheskoy khimii AN SSSR i Moskovskiy gosudarstvennyy universitet, khimicheskiy fakul'tet.

POLYAKOV, A.L., inzh.; YELIZAROV, D.P., kand.tekhn.nauk; VOLKOV, S.V., inzh.

Stresses arising in the heating of a stemapipe from austenitic steel. Teploenergetika 10 no.2:69-73 F '63. (MIRA 16:2)

1. TSentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya i Moskovskiy energeticheskiy institut.
(Steampipes) (Pipe, Steel)

MELIKHOV, V.L., inzh.; POLYAKOV, A.L., inzh.

Electropneumatic brake of the N60P electric locomotive.
Elek. i tepl. tiaga 6 no.10:8-9 O '62. (MIRA 15:11)

1. Novocherkasskiy elektrovozostroitel'nyy zavod.
(Railroads--Brakes) (Electric locomotives)

S/096/63/000/002/009/013
E193/E383

AUTHORS: Polyakov, A.L., Engineer, Yelizarov, D.P., Candidate of Technical Sciences and Volkov, S.V., Engineer

TITLE: Stresses in austenitic-steel steam-supply line during the warming-up stage

PERIODICAL: Teploenergetika, no. 2, 1963, 69 - 73

TEXT: Operational experience in steam power plants, working under conditions of high steam pressure and temperature, shows that welds in austenitic steam pipes are not reliable as they are liable to crack in service. According to some authorities, these failures are caused by internal stresses due to thermal expansion and the object of the present investigation was to check the validity of this view by determining the stresses set up in the steam-supply line in the warming-up stage. The measurements were conducted at a power station on steam-supply pipes (29 mm in diameter, 27 mm wall thickness) originally made of steel ЭИ-257 (EI-257), some portions of which had been replaced during general overhaul by steel 1Х18Н12Т (1Kh18N12T) and 1Х18Н9Т (1Kh18N9T) pipes. The strain measurements were duplicated by using both mechanical and

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Stresses in ....

wire resistance strain gauges, the former being applied in the entire steam-temperature range studied (20 - 520 °C), the use of the latter being restricted to temperatures below 400 °C. Only the axial strains ε_a were measured, the corresponding axial stresses being given by:

$$\sigma'_a = \frac{E}{1 - \mu^2} (\varepsilon_a + \mu\varepsilon_t) \qquad (1)$$

where E is the elastic modulus, μ the Poisson ratio and ε_t the tangential strain. Approximate values of ε_t were obtained from Eq. (3), the magnitude of the tangential stress σ_t being preliminarily determined from:

$$\sigma_t = \frac{p}{100} \frac{2}{\beta^2 - 1} \qquad (4)$$

where p is the steam frequency (kg/cm^2) and β is the o.d./i.d. ratio, equal in the present case to 1.33. Measurements were

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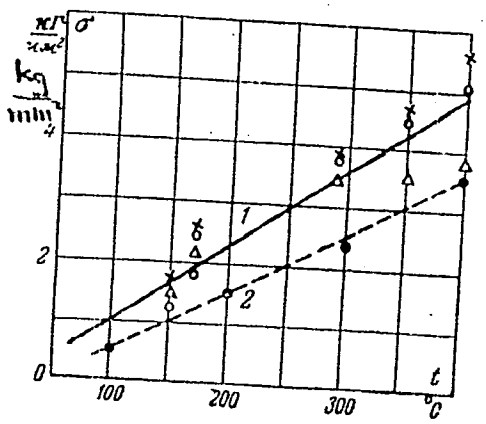
conducting during the warming-up stage lasting about 140 h. In addition to axial strength in the critical parts of the steam-supply line, the temperature and rate of heating of the pipe walls, steam pressure, load on the generator and several other parameters were recorded. The summarized results are reproduced in Fig. 3, where the axial stress σ (kg/mm^2) in the pipe is plotted against the test temperature (0 °C), curves 1 and 2 relating, respectively, to results given by the wire resistance and mechanical strain gauge. The recorded value of σ_a at 520 °C was 5 kg/mm^2; taking the calculated value of σ_t as 4.5 kg/mm^2, the shear stress $\tau = 0$ and the radial stress on the wall surface $\sigma_r = 0$, a value of 4.77 kg/mm^2 was obtained for the reduced stress in the tube. Since the permissible stress in austenitic steel tubes at 570 °C is 7.7 kg/mm^2, the results of the present investigation show that cracking of the welded joints cannot be attributed to excessively high, thermally-induced stresses. Failures of the welded joints are probably caused by a combination of factors, including the weakening effect of the welding operation on the heat-affected zone and the presence in this zone of additional,

Stresses in ....

internal stresses, not taken into account in the calculations and not revealed by the strain measurements as applied in the present investigation. There are 3 figures.

ASSOCIATION: TsNIITMASh - MEI

Fig. 3:



Card 4/4

POLYAKOV, A. L.

AUTHOR: Isakov, [illegible]
[illegible]
A. L.

TITLE: The modification [illegible]
hydrothermal [illegible]

PERIODICAL: Kolloidnyy zhurnal, v. [illegible], [illegible], 1954, [illegible]

TEXT: The influence of [illegible] on the aerosil's specific surface [illegible] systematically studied, [illegible] microscope. The [illegible] high-temperature [illegible] prepared by burning [illegible] treatment was accomplished [illegible] and 150 hr, after [illegible] adsorption of nitrogen [illegible] specific surface [illegible]

Card 1/[illegible]

The modification of highly dis...

Table 1 show that the specific ... temperature and duration of ... exposures showed that this is ... the absolute amount of adsorbate ... (where p_s is the saturation vapor pressure of the ...) a very expressed ... is obtained (Table 2). Within the range p/p_s = 0.015 - 0.5 this can be represented by the BET equation: $\alpha = \frac{\alpha_m C p/p_s}{(1-p/p_s)[1+(C-1)p/p_s]}$ with α_m = 10.25 µmol/m^2, C = 164. In the range p/p_s = 0.2 - ... the isotherm conforms to Halsey and Hill (reference see below). As pointed out by Pierce (reference see below) this means $(\alpha/\alpha_m)^{2.75} = (\alpha/10.25)^{2.75}$ = 1.30/log(p/p_s). It is pointed out that this isotherm ... is possible to determine the specific ... of ... by ... silica with hydrated ... point, according to the ... in µmol/g and α the ...

Card 2/4 3

The modification

6 figures and 2

Phys., 17, 559,

1161, 1960.

ASSOCIATION:

SUBMITTED:

Table 1.

Legend: 1.

Table 2.

KOZLOV, Yu.A., inzh.; POLYAKOV, A.L., inzh.; SOKOLOVA, S.L., inzh.

Cast insulation from MBK-1 compound for instrument transformers. Vest.elektroprom. 31 no.2:12-17 F '60. (MIRA 13:6)
(Electric insulators and insulation)
(Electric measurements)

KOZLOV, Yu.A.; POLYAKOV, A.L.

New synthetic materials used in manufacturing transformers.
Biul. tekh. ekon. inform. no.9:50-53 '59. (MIRA 13:3)
(Resins, Synthetic) (Electric transformers)

POLYAKOV, A. L. Maj

USSR/Medicine - Embolism, Pulmonary Sep/Oct 48
Medicine - X-Ray, Diagnosis

"Septic Pulmonary Embolism," Maj A. L. Polyakov, Med Corps, Cand Med Sci, Okrug Mil Hosp No 289, Faculty Surg Clinic, First Leningrad Med Hosp, 10 pp

"Terapev Arkhiv" Vol XX, No 5

Discusses 23 case histories. Concludes that pulmonary embolism in patients with septic diseases does not indicate persistent clinical symptoms. Describes procedure for X-ray diagnosis.

31/49T57

POLYAKOV, A.M.

Renormalization of residual currents by disturbance of symmetry. Pis'ma v red. Zhur. eksper. i teoret. fiz. 1 no.2:27-29 Ap '65. (MIRA 18:10)

1. Moskovskiy fiziko-tekhnicheskiy institut.

L 00758-66 EWT(m)/T/EWA(m)-2

ACCESSION NR: AP5014198 UR/0386/65/001/002/0027/0029

AUTHOR: Polyakov, A. M. 44,55

TITLE: Renormalization of residual currents by destruction of symmetry

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 1, no. 2, 1965, 27-29

TOPIC TAGS: mathematic analysis, particle physics, renormalization 44,55,19

ABSTRACT: A previous study of the effect which octet assymetry has on the strange vector current in the SU(3) 8-multiplet indicates that the corresponding vector constant is not renormalizable. Strange current and octet disturbance are vectors from the standpoint of V-isogroups (Okun', L. B., Preprint *ITEF*, No 298, 1965). In this paper the author derives expressions for the change in current of the V-spin when V-symmetry is destroyed. "The author is grateful to I. Yu. Kobzarev, A. A. Migdal and K. A. Ter-Martirosyan for consultation." Orig. art. has: 6 formulas.

ASSOCIATION: Moskovskiy fiziko-tekhnicheskiy institut (Moscow Physicotechnical Institute) 44,55

SUBMITTED: 03Mar65 ENCL: 00 SUB CODE: NP, MA

NO REF SOV: 002 OTHER: 001

Card 1/1

ACCESSION NR: AP4012547 S/0056/64/046/001/0213/0217

AUTHORS: Gurvits, S. A.; Migdal, A. A.; Polyakov, A. M.

TITLE: Boundary energy of a Fermi gas in a potential well

SOURCE: Zhurnal eksper. i teoret. fiz., v. 46, no. 1, 1964, 213-217

TOPIC TAGS: Fermi gas, quantum mechanics, potential well, quantization, Fermi energy, boundary Fermi energy, neutron Fermi energy, heavy nucleus Fermi energy, Fermi nucleus

ABSTRACT: A quasi-classical quantization condition is obtained for a spherically symmetrical potential and is used to obtain the first two terms of an expansion of the number of particles, expressed in the form of a function of the Fermi-gas boundary energy, in powers of the dimensions of the system for this potential. The method given makes it possible to make similar calculations for any potential well with a diffused edge. By regarding nucleons as a Fermi gas

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ACCESSION NR: AP4012547

in such a potential, it is possible to apply the results obtained to a calculation of the boundary energy of Fermi nuclei. The final formula can be represented in the form

$$\varepsilon_0/\varepsilon_\infty = 1 + A^{-1/3} f(N/A),$$

where f(x) is given by

$x =$	0,50	0,52	0,54	0,56	0,58	0,60	0,62	0,64	0,66	0,68
$f(x) =$	1,74	1,71	1,51	1,50	1,40	1,34	1,20	1,13	1,00	0,90

and which is accurate to within 1--2 MeV. Orig. art. has: 26 formulas.

ASSOCIATION: Moskovskiy fiziki-tekhnicheskiy institut (Moscow Physicotechnical Institute)

Card 2/3

546. 1% Apr 63

KROTOVA, N.A.; MOROZOVA, L.P.; POLYAKOV, A.M.; SOKOLINA, G.A.; STEFANOVICH, N.N.

Study of the various types of adhesiveness. Koll.zhur. 26 no.2:207-214 Mr-Ap '64. (MIRA 17:4)

1. Institut fizicheskoy khimii AN SSSR, Moskva.

AUTHORS: Ginzburg, N. I., Polyakov, A. M. 57-28-5-19/36

TITLE: Electrical Properties of Thin Iron, Nickel and Cobalt Films (Elektricheskiye svoystva tonkikh plenok zheleza, nikelya i kobal'ta)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 5, pp. 1029-1031 (USSR)

ABSTRACT: The electrical propeties of thin iron- and nickel films were investigated in the papers (Ref 1-3). In order to obtain more pure and homogeneous films, the authors employed the method of heating the evaporating metal by means of electronic impact. Thereby, the contamination by material from the crucible was excluded. The resistance of the film was measured at room temperature, at 78°K (liquid nitrogen), 20.4-14°K (liquid hydrogen) and from 4.2 to 1.65°K (liquid helium). For the measurement of the resistance of comparatively thick films a potentiometer with a high resistance was used. It was possible to measure the film resistance immediately during the condensation process, during which the evaporation conditions were kept as constant as possible. By means of the modification of the capacity which was spryed by the evaporator, it was pos-

Card 1/3

sible within certain limits to measure the current intensity of the atoms condensing at the surface. Figure 1 shows the dependence of the quantity 1/R on the exposure period for cobalt at three different condensation conditions (I - III). The temperature dependence of the resistance of films with different thickness exhibiting a resistance varying from a few dozen ohms to several megaohms was investigated. Thinner films increased their resistance with a reduction of temperature (figure 2). The character of the modification of the film resistance was dependent upon the thickness of the film. It must be mentioned, that in the papers (Ref 1-3) all films without exception increased their resistance with a temperature reduction. In order to examine the assumption (Ref 5) on the possible occurrence of superconductivity in thin films of ferromagnetic metals the electric resistance of all produced films was measured down to 1.65°K inclusive. From the curves (figure 3) it can be seen, that the resistance of thick nickel films does not change at all in the temperature interval of from 4.2 - 1.65°K. Thinner films, however, increase their resistance with a temperature reduction. The authors are indebted to A.I.

Electrical Properties of Thin Iron, Nickel and Cobalt Films

57-28-5-19/36

Shal'nikov for his attention paid to this work. There are 3 figures and 5 references, 2 of which are Soviet.

ASSOCIATION: MGU, Fizicheskiy fakul'tet, Kafedra fiziki nizkikh temperatur (Moscow State University, Physics Dept., Chair of Physics of Low Temperatures)

SUBMITTED: October 21, 1957

1. Thin films--Electrical properties

Card 3/3

L 36224-66 EWT(1)/EWT(m) GG

ACC NR: AP6024521 SOURCE CODE: UR/0386/66/004/002/0074/0077

AUTHOR: Polyakov, A. M.

ORG: none

TITLE: Some consequences of the algebra of weak and electromagnetic currents

SOURCE: Zh eksper i teor fiz. Pis'ma v redaktsiyu. Prilozheniye, v. 4, no. 2, 1966, 74-77

TOPIC TAGS: quantum electrodynamics, beta decay, pion, electromagnetic interaction, algebra

ABSTRACT: On the basis of the hypothesis by Y. Nambu (Phys. Rev. Lett. v. 4, 380, 1960) that the axial current of β decay is rigorously conserved in the limit when the pion mass vanishes, and under the assumption that weak and electromagnetic currents form an SU(3) x SU(3) algebra, the author obtains several relations that are valid in the limit as the pion mass vanishes. These formulas relate the axial and vector currents, the sum of the diagrams transforming the initial particles into two pions, and the momenta of these pions. The main result is an approximate formula

$$f^2M^{\mu}(\eta^0 \to \pi^+\pi^-\gamma) = \tfrac{1}{2}(q - q')_{\beta}M^{\alpha\beta}(\eta^0 \to \gamma + \gamma')$$

where f is a factor, M the Feynman amplitudes, and q and q' are the momenta of the final pions, γ the photon, γ' the "isovector photon," and α and β their polarizations.

Card 1/2

L 36224-66

ACC NR: AP6024521

3

Possible corrections due to the lower two-pion states are estimated. The author thanks M. Baker, A. A. Migdal, and K. A. Ter-Martirosyan for useful discussions. Orig. art. has: 3 figures and 13 formulas.

SUB CODE: 20/ SUBM DATE: 12May66/ ORIG REF: 001/ OTH REF: 002

Card 2/2

POLYAKOV, A.M.; KROTOVA, N.A.

"Mechanoelectron" emission intensity during the break-off and deformation of polymer films. Dokl. AN SSSR 151 no.1:130-133 Jl '63. (MIRA 16:9)

1. Institut fizicheskoy khimii AN SSSR. Predstavleno akademikom A.N.Frumkinym.

(Polymers) (Electrons--Emission)

L 11123-63 EPR/EWP(j)/EPF(c)/EWT(1)/EWT(m)/BDS ASD/AFFTC Ps-4/Pr-4/
Pc-4 RM/WW
ACCESSION NR: AP3003518 S/0020/63/151/001/0130/0133

AUTHOR: Polyakov, Yu. M.; Krotova, N. A.

TITLE: Investigation of the intensity of mechanoelectron emission during the tearing off and deformation of polymer films

SOURCE: AN SSSR. Doklady, v. 151, no. 1, 1963, 130-133

TOPIC TAGS: exoelectronic emission, mechanoelectron, mechanoemission, polymer film

ABSTRACT: Investigations have been made of fast electron emissions resulting from ruptured, strained, or otherwise mechanically broken bonds within solids or between two adhesively joined materials. This type of emission, called "mechanoemission" by the authors, yields electrons with energies up to hundreds of thousands of electron volts. Measurements were made by means of specially constructed instruments using electron multipliers with wide sensitivity ranges. Examples of results obtained include data on the electron emission from a mechanically treated gutta-percha film, which even 1—1.5 hr after being torn off from a substrate still emitted about 100 pulses per second. A significant

Card 1/2

L 11123-63
ACCESSION NR: AP3003518

2

increase of emission was noted when the sample was illuminated by visible light. The authors assume that the free radicals produced during the destruction of adhesive bonds may play a part in the process of mechanoemission. The article was presented by Academician A. N. Frumkin, 5 March 1963. "In conclusion, the authors are grateful to A. M. Tyutikov for [the use] of the electron multipliers and for advice on their operation." Orig. art. has: 4 figures.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences SSSR)

SUBMITTED: 26Feb63 DATE ACQ: 30Jul63 ENCL: 00

SUB CODE: PH NO REF SOV: 012 OTHER: 009

kes/ky
Card 2/2

ACCESSION NR: AP4023500 S/0069/64/026/002/0207/0214

AUTHORS: Krotova, N.A.; Morozova, L.P.; Polyakov, A.M.; Sokolina, G.A.; Stefanovich, N.N.

TITLE: Investigation of various types of adhesion bonds

SOURCE: Kolloidny*y zhurnal, v. 26, no. 2, 1964, 207-214

TOPIC TAGS: adhesion mechanism, adhesion bond, interface erosion, chemosorption, donor acceptor interaction, functional group, electron emission, semiconductor surface conductivity, surface modification, high speed semiconductor, germanium

ABSTRACT: In order to determine the mechanism of adhesion, several phenomena at the polymer-solid substrate interface were investigated. Adhesive bonds resulting from diffusion processes in which the interface is eroded, from the formation of a new phase on the substrate by the polymerization of organometallic compounds, and from chemosorption on the interface leading to the formation of a double electric layer are discussed. By IR spectroscopy it has been established that adhesion of polymers is largely due to chemical

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ACCESSION NR: AP4023500

donor-acceptor interactions. The adhesion can therefore be controlled by rational selection of the function groups of the adhesive and substrate on the basis of their donor-acceptor properties. A number of functional polymer groups were arranged in series accoring to their ability to impart a positive charge to the surface on tearing the film from the substrate (i.e., decrease in their donor properties). A method was worked out for determining the effect of the functional groups of the polymer by measuring the intensity of electron emission formed by the breakdown of the adhesion bond between the polymer and the glass substrate (figs. 1 and 2). There are changes in the characteristics of a semiconductor upon formation of adhesion bonds between it and the polymer; the part played by the functional groups of the polymer responsible for the degree of charge of the surface was investigated. The surface conductivity in the field effect of germanium crystals modified with alkylchlorosilanes (fig. 3) was determined in an apparatus shown in fig.4. Modification significantly changes (reduces) the high speed properties of the semiconductor surface. Orig. art. has: 7 figures

Card 2/7

ACCESSION NR: AP4023500

ASSOCIATION: Institut fizicheskov khimii AN SSSR, Moscow(Institute of Physical Chemistry, AN SSSR)

SUBMITTED: 03Aug62 DATE ACQ: 15Apr64 ENCL: 04

SUB CODE: OC, EC NO REF SOV: 009 OTHER: 001

ATD PRESS: 3044

Card 3/7

ACCESSION NR: AP4023500 ENCLOSURE: 01

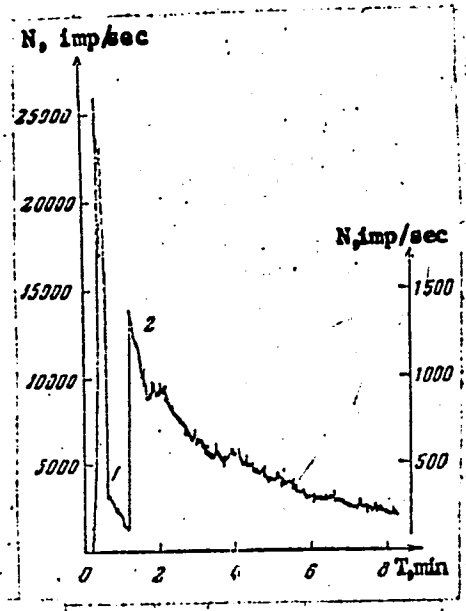

Fig. 1. Diagram of a recording of after-emission of electrons with gutta-percha film torn away from glass

Card 4/7

ACCESSION NR: AP4023500

ENCLOSURE: 02

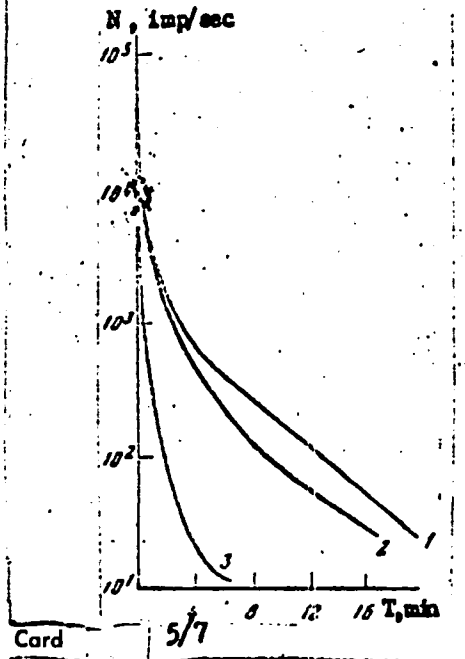

Fig. 2. Curves of the relationship of the intensity of after-emission to time for different polymers after removing from glass

1 - Nitrile rubber, 2 - gutta-percha, 3 - carboxlyate rubber

Card 5/7

ACCESSION NR: AP4023500

ENCLOSURE: 03

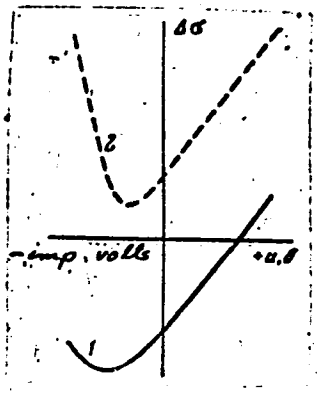

Fig. 3. Surface conductivity in the field effect for sample of germanium, modified with alkylchlorosilane. The dark (1) and light (2) curves were obtained by the method of static photoconductivity. Picture taken from oscillograph screen

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Card

ACCESSION NR: AP4023500

ENCLOSURE: 04

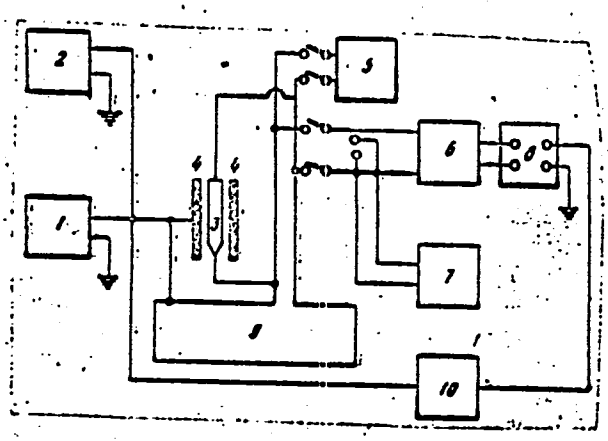


Fig. 4. Block diagram of apparatus for measuring surface conductivity in the field effect by the fixed conductivity method

1 - Generator, 2 - voltmeter, 3 - sample, 4 - electrodes, 5 - potentiometer, 6 - amplifier, 7 - condenser, 8 - oscillator, 9 - radiodiagram, 10 - phase scanner.

Card 7/7

POLYAKOV, A.M., inzh.

Sealing cracks in internal combustion engine blocks. Transp. stroi. 14 no.7:51 Jl '64. (MIRA 18:1)

Efficiency experts suggest. Ibid.:52

POLYAKOV, A.M., inzh.

Welding cast iron. Mekh.stroi. 19 no.7:20-21 Jl '62. (MIRA 15:7)

(Cast iron--Welding)

GURVITS, S.A.; MIGDAL, A.A.; POLYAKOV, A.M.

Boundary energy of a Fermi gas in a potential well. Zhur. eksper. i teor. fiz. 46 no.1:213-217 Ja'64. (MIRA 17:2)

1. Moskovskiy fiziko-tekhnicheskiy institut.

POLYAKOV, A.M., inzh.

Cold welding of cast-iron parts. Transp. stroi. 12 no.8:51 Ag '62. (MIRA 15:9)

(Cast iron--Welding)

SKORODUMOV, Georgiy Yevgen'yevich; SMIRNOV, Mikhail Petrovich; PETRUNIN, Ivan Ivanovich; POLYAKOV, Aleksandr Mikhaylovich; RYBAKOV, A.K., inzhener, redaktor; VERINA, G.P., tekhnicheskiy redaktor

[Maintenance of narrow-gage railroad tracks; experience of workers on the Baltic line] Soderzhanie zheleznodorozhnogo puti uzkoi kolei; opyt puteitsev Baltiiskoi dorogi. Moskva, Gos.transp.zhel-dor. izd-vo, 1955. 109 p. (MIRA 9:3)
(Railroads, Narrow--Gauge)

POLYAKOV, A. M.

Machine-Tractor Stations

Kundravy Machine-Tractor Station is helping collective farms establish a permanent feed supply. Korm. baza 3 No. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, September 1952 1953, Uncl.

1. POLYAKOV, A. M.

2. USSR (600)

3. Machine-Tractor Stations

4. Petukhovo Machine-Tractor Station in the struggle for a high level of agriculture. Sov. agron.-No. 12 - 1952.

9. Monthly List of Russian Acessions, Library of Congress, February, 1953. Unclassified.

1. POLYAKOV, A.M.

2. USSR (600)

4. Windbreaks, Shelterbelts, Etc.

7. Along the state shelterbelt from Kamyshin to Stalingrad. Les.khoz. 5 no.10, 1952.

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

POLYAKOV, A.M. (Vyandraskiy rayon, Estonskoy SSR).

There is plenty to learn at this experiment station. Nauka i pered. op.v sel'khoz.7 no.1:32-35 Ja '57. (MLRA 10:2)
(Estonia--Agricultural experiment stations)

L 24441-65 EPF(c)/EPR/EPA(s)-2/EWP(j)/EWT(m)/T/EWA(d)/EWP(l)/EWP(v) Pc-4/ Pr-4/Ps-4/Pt-10 RM/WW/MLK

ACCESSION NR: AT5000411 S/0000/64/000/000/0312/0321

63
60
B+1

AUTHOR: Polyakov, A. M.; Krotova, N. A.

TITLE: Investigation of the electrical properties of a freshly formed surface with respect to the emission of fast electrons

SOURCE: Konferentsiya po poverkhnostnym silam. 2d, 1962. Issledovaniya v oblasti poverkhnostnykh sil (Investigations in the field of surface forces); sbornik dokladov konferentsii. Moscow, Izd-vo Nauka, 1964, 312-321

TOPIC TAGS: polymer film, plastic deformation, secondary emission, polymer surface, polymer interface, polymer electrical property, electron emission, polymer adhesion

ABSTRACT: The emission of mechanoelectrons during the separation and deformation of polymer films was investigated using the complex AK-1 adhesiometer. The mechanical magnitudes were determined simultaneously with a determination of the electron emission intensity. Special, secondary electron multipliers with an amplification factor of 10^8 - 10^9 were used to record the electron emission. The signals from the multiplier are fed to an electron scaler and recorded by an electron potentiometer. It was established that the emission current observed

Card 1/3

L 24441-65
ACCESSION NR: AT5000411

2

during the separation process can be recorded by a microammeter switched into the plate circuit. The magnitude of the emission current was approximately 10^{-14} a/cm^2 for the system β-guttapercha-glass. It was disclosed that the emission of mechanoelectrons is observed not only from the gap between the surface being separated, but also from the freshly formed (by means of separation) surface of the polymer for a certain period of time after separation. This phenomenon in the absence of emission from the gap was termed "secondary emission." It was established that the emission from the gap during the destruction of the adhesion bond can be examined as a variety of autoelectron emission which was caused by the strong electric fields developing in the gap during the thinning of the facings of the electric double layer which had formed on the polymer-backing interface. A decrease in secondary emission from the freshly formed surface was detected which occurs according to the law $N = a\tau^{-b}$, where τ is the time and a and b are constants. In some cases, emission from the fresh surface even increased after the initial decrease. It was also established that the intensity of the primary emission during the separation of the polymer from the glass depends on the chemical nature and structure of the polymer. Nitrite rubber yields the greatest intensity of primary emission, and acetylcellulose yields the smallest.

15

Card 2/3

L 24441-65
ACCESSION NR: AT5000411

Orig. art. has: 7 figures.

ASSOCIATION: Laboratoriya poverkhnostnykh yavleniy, Institut fizicheskoy khimii AN SSSR (Surface phenomena laboratory, Physical chemistry institute, AN SSSR)

SUBMITTED: 30May64 ENCL: 00 SUB CODE: OC, EM

NO REF SOV: 015 OTHER: 003

Card 3/3

L 45093-66 EWT(m)/T
ACC NR: AP6024873 SOURCE CODE: UR/0056/66/051/001/0135/0146

32

AUTHOR: Migdal, A. A.; Polyakov, A. M. 19

ORG: none

TITLE: Spontaneous violation of strong interaction symmetry and the absence of zero-mass particles

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 1, 1966, 135-146

TOPIC TAGS: vector meson, Feynman diagram, quantum electrodynamics, C invariance, PARTICLE ANNIHILATION, PARTICLE INTERACTION

ABSTRACT: The existence of zero mass particles in the presence of spontaneous violation of symmetry is considered. Summation of all Feynman diagrams yields an equation which is identical to the Bethe—Saltpeter equation for the wave function of a zero mass scalar bound state (zeron) in the annihilation channel $\bar{a}b$ of the particles for the difference between the mass operators $M_a(p)-M_b(p)$ of particles a and b in a supermultiplet. It is shown that in spontaneous violation of symmetry in a Yang-Mills type theory with vector mesons, the zerons interact only with virtual particles and hence are unobservable. On the other hand, vector mesons acquire a mass despite the generalized guage invariance. It is proved that an asymmetric solution corresponds to a minimal vacuum energy and that a consequence of C-invariance of the solution is the conservation of strangeness. Orig. art. has: 26 formulas. [CS]

SUB CODE: 20/ SUBM DATE: 30Nov65/ ORIG REF: 003/ OTH REF: 010

Card 1/1 blg

POLYAKOV, A.N.

Methods for preparing thin sections from soil-forming rocks for micromorphometric measurements. Pochvovedenie no.9:86-90 S '65. (MIRA 18:10)

1. Moskovskiy gosudarstvennyy pedagogicheskiy institut imeni Lenina.

ACCESSION NR: AR4027229 S/0299/64/000/002/M015/M015

SOURCE: RZh. Biologiya, Abs. 2M77

AUTHOR: Polyakov, A. N.

TITLE: Characteristics of the regeneration of osseous tissue after surgical treatment of traumatic osteomyelitis in irradiated animals

CITED SOURCE: Tr. 1-y konferentsii molody*kh ucheny*kh po vopr. travmatol. i ortopedii. (Tr. Tsentr. in-t travmatol. i ortopedii, 23). M., 1963, 356-360

TOPIC TAGS: radiation, radiation sickness, bone, bone regeneration, osteomyelitis

ABSTRACT: Rabbits were irradiated with a dose of 900 r, after which an open infected fracture was created in the radius. On the 4th day after the trauma, the wound was treated surgically followed by application of antibiotics. After the appearance of osteomyelitis, sequestrectomy was carried out, with or without the replacement of the diaphysis by a lyophilized transplant. Radiation sickness was found to aggravate the course of infected osseous fractures (retarding the regeneration of osseous tissue, osteomyelitis). Radical sequestrectomy with the use of a lyophilized transplant gave fairly good results and had a favorable effect on the

Card 1/2

ACCESSION NR: AR4027229

regenerative processes in the bone. K. Timashkevich

DATE ACQ: 14Feb64 SUB CODE: LS ENCL: 00

Card 2/2

KISLIK, V.A., doktor tekhn.nauk, prof.; STUDENOK, Yu.A., kand.fiziko-matem.nauk, dotsent; POLYAKOV, A.N., inzh.

Increasing the wear resistance of the pistons of a D-50 diesel locomotive engine in the area of the upper grooves. [Sbor.trud.] RIIZHT no.31:226-297 '61. (MIRA 16:12)

POLYAKOV, A.N.

New carbonate formations in loose deposits of the southeastern trans-Ural region. Nauch. dokl. vys. shkoly; biol. nauki no.1: 202-206 '65. (MIRA 18:2)

1. Rekomendovana kafedroy obshchey fizicheskoy geografii Moskovskogo gosudarstvennogo pedagogicheskogo instituta im. V.I. Lenina.

POLYAKOV A. N.

1-FIW

3

Polya[illegible]ov, A. N. On the construction of the images of a regular icosahedron and dodecahedron. Rostov. Gos. Ped. Inst. Uč. Zap. no. 3 (1955), 111–116. (Russian)

COUNTRY : USSR
CATEGORY : Forestry. Forest Management
ABS. JOUR. : RZhBiol., No. 2, 1959, No. 6164
AUTHOR : Polyakov, A.N.
INST. :
TITLE : Some New Data on Mechanisms in the Structure of Ordinary, Pure, and Even-Age Plantations.
ORIG. PUB. : Nauchn. dokl. vyssh. shkoly. Lesoinzh. delo, 1958, No.1, 29-34
ABSTRACT : According to the data of ordinary, pure, and even-age pine plantations in 19 experimental areas of Vladimirskaya Oblast it was established that there was a very close relationship, almost uniform (correlation coefficient of 0.922-0.906), between the diameter of the trunk at the level of the chest and the diameter of the crown. On this basis it is assumed that in plantations of the same kind there is a regular distributions of trees according to the dime-

Card: 1/3

COUNTRY :
CATEGORY :
ABS. JOUR. : RZhBiol., No. 2, 1959, No. 6164
AUTHOR :
INST. :
TITLE :
ORIG. PUB. :
ABSTRACT : ter of the crown. Establishment of relative diameters of the crown and subsequent graphical depiction of the number of crowns occurring for each relative stage showed that the curves for different experimental fields had the same character, similar to Maxwell's curve. Within the central stage of the width the distribution of the aggregate of the tree crowns for relative stages proceeded like the curve of normal distribution. Variation of the diameter of the

Card: 2/3

3/3

POLYAKOV, A. N., Candidate Agric Sci (diss) -- "Investigation of the rate of growth of the largest pine plantings of Vladimir Oblast". Moscow, 1959. 15 pp (Min Higher Educ USSR, Moscow Forestry Engineering Inst), 150 copies (KL, No 25, 1959, 137)

CHERNYAYEV, M.P., prof., otv. red.; AVDEYEV, N.Ya., dots., red.;
POLYAKOV, A.N., dots., red.

[Abstracts of papers read at the Methodological Conference of the Mathematics Departments of the Pedagogic Institutes of the southern part of the R.S.F.S.R.] Tezisy dokladov.Nauchno-metodicheskoy konferentsii matematicheskikh kafedr pedagogicheskikh institutov iuga RSFSR, 2d. Rostov na Donu, Rostovskii na Donu gos. pedagog. in-t, 1960. 105 p. (MIRA 15:4)

1. Nauchno-metodicheskaya konferentsiya matematicheskikh kafedr pedagogicheskikh institutov yuga RSFSR, 2d. 2. Rostovskiy pedagogicheskiy instutyt (for Chernyayev, Avdeyev, Polyakov).
(Russia, Southern--Mathematics)

NOVOTNYY, Antonin; POLYAKOV, A.P., red.; ROMANOV, A.V., red.; RUMYANTSEV, A.M., red.; TROPKIN, N.V., red.; FEDOSEYEV, P.N., red.; SERBIN, Ye.M., tekhn.red.

[For the victory of peace and socialism. Report to the 11th Congress of the Communist Party of Czechoslovakia on the activities of the Central Committee and the main tasks of the present. Armed with the results of the 21st Congress of the CPSU, forward, to the completion of the socialist construction of our country] Za pobedu mira i sotsializma. Otchetnyi doklad XI s"ezdu Kommunisticheskoi partii Chekhoslovakii o deiatel'nosti TSentral'nogo Komiteta i glavnye zadachi tekushchego momenta. Vooruzhennye itogami XXI s"ezda KPSS, vpered, k zavershcniiu stroitel'sta sotsializma v nashei strane. Moskva, Gos.izd-vo polit.lit-ry, 1960. 141 p. Translated from the Czech. (MIRA 13:12)

(Czechoslovakia--Economic policy)

L 45405-65

ACCESSION NR: AP5010[illegible]0 UR/0286/65/000/007/0070/0070

AUTHOR: Polyakov, A. P. 5 B

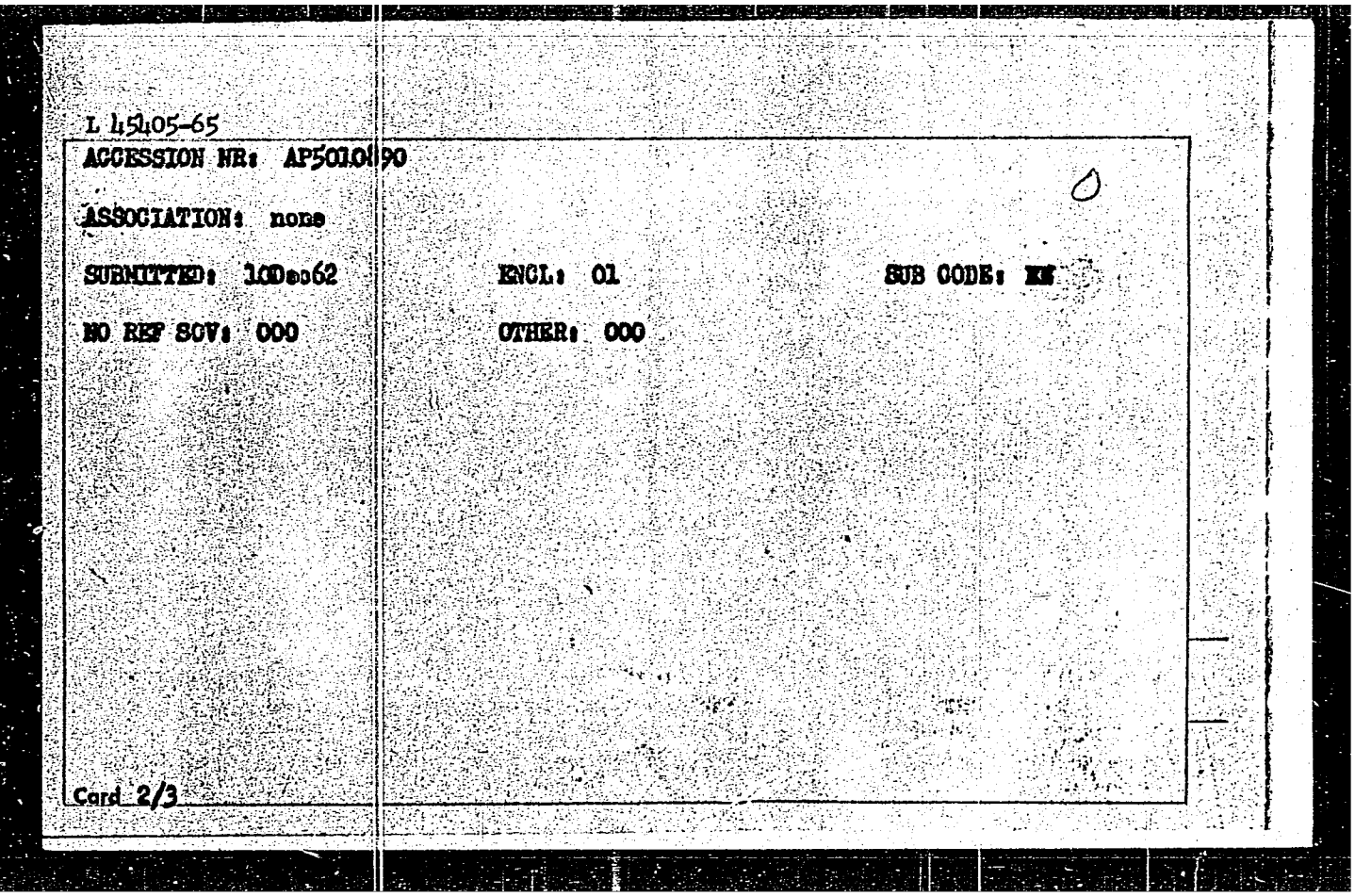
TITLE: Device for measuring the nonlinearity of a sawtooth voltage. Class 21, No. 169678

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 7, 1965, 70

TOPIC TAGS: voltmeter

ABSTRACT: This Author Certificate presents a device for measuring the nonlinearity of a sawtooth voltage. It contains an indicator device with a bilateral scale and a cathode-ray tube (CRT) for determining the instant of coincidence of the levels of the investigated and reference voltages on an amplitude comparator. To increase the accuracy of measurement and to simplify the measurement process, the sawtooth voltage source is connected through a differentiator and an amplifier to the comparator (see Fig. 1 on the Enclosure). The second input of the comparator is connected through a switch to the reference voltage source directly and through an attenuator and the indicator device. The CRT is connected to the output of the comparator through a mixer whose second input is connected to the differentiator. Orig. art. has: 1 diagram.

Card 1/3



L 45405-65
ACCESSION NR: AP5010190

ASSOCIATION: none

SUBMITTED: 10Dec62 ENCL: 01 SUB CODE: MM

NO REF SOV: 000 OTHER: 000

Card 2/3

POLYAKOV, A.P.; ERIVANSKAYA, L.A.; SHUYKIN, N.I.

Dehydration of n-propyl(2-naphthyl)carbinol. Neftekhimiia 5 no.6:845-849 N-D '65. (MIRA 19:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, kafedra khimii nefti. Submitted March 30, 1965.

VASIN, G.G., kand. tekhn. nauk, dotsent; POLYAKOV, A.P., starshiy prepodavatel'

Kinematics and dynamics of basic elements of an automatic variable-speed gear transmission. Izv. vys. ucheb. zav.: mashinostr. no.3:79-87 '64.

1. Chelyabinskiy politekhnicheskiy institut.

K

Country : USSR
Category: Forestry. Forest Cultures.

Abs Jour: RZhBiol., No 11, 1958, No 48794

Author : Polyakov, A.P.
Inst : Scientific Research Inst. of Agriculture in the Extreme North.
Title : Field-Sheltering Forest Strips at the Yamal'skaya Agricultural Experimental Station.

Orig Pub: Byul. nauchno-tekhn. inform. N.-i. in-t s kh. Krayn. Severa, 1957, No 2, 44-46

Abstract: No abstract.

Card : 1/1

TOREZ, Moris [Thorez, Maurice]; ROMANOV, A.V., red.; RUMYANTSEV, A.M., red.; TROPKIN, N.V., red.; FEDOSEYEV, P.N., red.; POLYAKOV, A.P., red.; SERBIN, Ye.M., tekhn.red.

[New data on the pauperization of French workers] Novye dannye ob obnishchanii trudiashchikhsia Frantsii. Moskva, Gos.izd-vo polit.lit-ry, 1959. 84 p. (MIRA 14:1)

1. General'nyy sekretar' Frantsuzskoy kommunisticheskoy partii (for Torez).
(France--Labor and laboring classes)
(France--Cost and standard of living)

POLYAKOV, A.F.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 184-I

Call No. TA407.P6

BOOK

Author: POLYAKOV, A.P.

Full Title: NONMETALLIC CHEMICALLY RESISTANT MATERIALS (2nd ed.)

Transliterated Title: Nemetallicheskiye khimicheski stoykiye materialy

Publishing Data

Originating Agency: None

Publishing House: State Scientific-Technical Publishing House of Chemical Literature (GOSKHIMIZDAT)

No. pp: 424 No. of copies: 10,000

Date: 1952

Editorial Staff:

Editor: None Tech. Ed.: None

Editor-in-Chief: None Appraiser: None

Others: The chapter: "Plastics, lacquers and cements" was written by the author and K.K. Polyakova, Candidate of Technical Sciences

Text Data

Coverage: The book covers nonmetallic chemically resistant materials, both inorganic and organic, used for the manufacturing of equipment for chemical industries. The following inorganic materials are mentioned: basic refractories, acid-resistant silica cements, acid-resistant concrete, ceramic ware, fused rock, silica glass, quartz glass, and enamels. Organic materials mentioned are: plastics, lacquers, cements,

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Nemetallicheskiye khimicheski stoykiye materialy AID 184-I

rubber, wood, coke, coal, and jet. Testing and use of the materials are discussed. The book might be of interest.

Purpose: A book for engineers employed in the chemical industry or in the assembly and designing of chemical equipment.

Facilities: Names of Soviet scientists are mentioned.

No. of Russian and Slavic References: 140 (1931-1952)

Available: Library of Congress

POLYAKOV, A. P., Cand Agr Sci -- (diss) "Significance of the structure of tree and shrub belts in the forest tundra of the lower reaches of the course of Ob'." Len, 1958. 18 pp (Min of Higher Education USSR, Len Order of Lenin Forestry Engineering Acad im S. M. Kirov), 100 copies

(KL, 18-58, 101)

POLETSKIY, A.T.; POLYAKOV, A.P.

Investigating the motion of the reactor of a torque converter.
Teor. mash. i mekh. no.98/99:141-150 '64. (MIRA 17:9)

POLYAKOV, A.P., starshiy prepodavatel'

Investigating the movement of an inertia variable-speed torque converter used as a dynamic clutch. Izv. vys. ucheb. zav.; mashinostr. no.8:72-81 '64.

(MIRA 17:11)

1. Chelyabinskiy politekhnicheskiy institut.

SHUYKIN, N.I.; ERIVANSKAYA, L.A.; KOROSTELEVA, G.S.; POLYAKOV, A.P.

Transformations of n-butylpyridines in the presence of alumina-chromia catalysts. Izv.AN SSSR.Ser.khim. no.12:2216-2218 '65. (MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet. Submitted April 20, 1965.

POLYAKOV, A.S.

Physical nature of apparent resistance. Razved. i okh. nedr 26 no.9: 34-38 S '60. (MIRA 15:7)

1. Leningradskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta geofizicheskikh metodov razvedki.
(Electric prospecting)

ZIBENBERG, A. I.; POLYAKOV, A. S.

Automation of a cylinder block shakeout section. Lit. proizv. no.10:21-24 O '62. (MIRA 15:10)

(Foundries—Equipment and supplies)
(Automation)

POLYAKOV, A.S.

Semiautomatic machine for the removal of fins from cast turbine blades. Lit.proizv. no.9:16-17 S '62. (MIRA 15:11)
(Foundries--Equipment and supplies)

S/169/62/000/006/016/093
D228/D304

AUTHOR: Polyakov, A. S.

TITLE: Opportunities and ways of increasing the effectiveness of geophysical prospecting for ore deposits

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 6, 1962, 20, abstract 6A142 (Sov. geologiya, no. 10, 1961, 42-57)

TEXT: For regional investigations the main methods are aeromagnetic surveying and gravimetric, seismic and electric prospecting; for exposing structures and perspective areas they include surveying with a T-aeromagnetometer, gravimetric prospecting, the method of high-frequency sounding, metallometry, and hydrochemistry. In searches for iron ore deposits the chief techniques are magnetic and gravimetric surveying; in the quest for copper-nickel ores the main methods are aeromagnetic surveying, and gravimetric, electric and magnetic prospecting; in the case of great depths the chief technique is radiowave translucence in conjunction with drilling. Aeromagnetic and aero-gamma-surveying, magnetometry, metallometry,

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Opportunities and ways ...

cappametry, gravimetry, surface gamma-surveying, and electric prospecting are the main methods for seeking polymetal ores; in deep searches the principal technique is drilling in conjunction with interhole radiowave translucence. Magnetic surveying is the main method of seeking stony bauxite varieties; for non-magnetic clayey varieties of bauxite a number of indirect problems are solved by the methods of aeromagnetic surveying, electric prospecting and occasionally seismic surveying. Despite the progress of ore geophysics, there are a number of unsolved problems: seeking deeply lying ores of base and rare metals; searching for weakly- and non-magnetic varieties of iron ore; direct searches for ore deposits. Increasing the effectiveness of geophysical work should proceed in three directions: the perfection of the techniques and the methods of geophysical investigations; equipping the geophysical service with modern, highly productive techniques; and increasing the executor's qualifications. The author reckons that it is necessary to use seismic surveying when seeking ore deposits in order to solve structural-tectonic and mapping problems. Electric prospecting -- the leading method of ore geophysics -- is confronted with

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S/169/62/000/006/016/093
D228/D304

the problem of eliminating interference from the influence of surface irregularities and the topography. The use of induction methods is recommended, as is the method of electromagnetic field formation in the case of well conducting ores. The development of highly sensitive apparatus and the automation of interpretation operations are the main problems of magnetometry and gravimetry. The study of physical properties of rocks ought to be made considerably more profound and systematic. A 5- to 10-fold increase in the production rate for logging operations, the procurement of data about a hole's section during drilling, and a quantitative estimate of the useful mineral content according to logging data should be striven for in the field of geophysical operations. A method of geophysically investigating interhole spaces should be developed, too, in every possible way. [Abstracter's note: Complete translation.]

POLYAKOV, A.S.

Representing the results of the determination of the physical properties of rocks by means of variation curves. Razved. i okh. nedr 27 no.2:50-53 F '61. (MIRA 14:5)

1. Leningradskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta geofiziki.
(Rocks--Analysis)

OVECHKIN, V.V.; PIRKIN, I.A.; POLYAKOV, A.S.; OCHKIN, D.V.

Method for calibrating scintillation gamma-spectrometer. Prib.i tekh. eksp. no.5:126-128 S-O '60. (MIRA 13:11)
(Scintillation spectrometry) (Calibration)

ZIBENBERG, A.I.; POLYAKOV, A.S.

Semiautomatic machine for trimming burrs and flaws of crankcases.
Avt.prom. no.4:37 Ap '60. (MIRA 13:6)

1. Gor'kovskiy avtozavod.
(Grinding machines)

5.4210(A)

~~5(2), 5(4)~~

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S/076/60/005/02/002/045
B004/B016

AUTHORS: Nesmeyanov, An. N., Iofa, B. Z., Polyakov, A. S.

TITLE: Pressure of Saturated Vapor of Solid Indium Antimonide

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 2, pp 246-248 (USSR)

ABSTRACT: The measurement of this pressure was made by a modified method of Knudsen (Refs 7,8) by adding Sb^{124} and In^{114} at temperatures between 636 and 720°K. The two substances with active isotopes added were fused together in quartz capillaries. The radiograms taken by Yu. P. Simanov at the khimicheskiy fakul'tet MGU (Chemical Department of Moscow State University) confirm the occurrence of one single phase of InSb. The condensate obtained on determination of the vapor pressure was transformed into sulfides the activity of which was measured. The value of the vapor pressure of InSb determined by evaporation of radioactive In is by far higher than the value resulting from the determination of the evaporated Sb (Tables 1,2, and Fig). The values obtained by measuring the evaporated Sb are practically in agreement with the pressure of the saturated

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vapor of pure metallic Sb (Ref 7) whereas the vapor pressure determined by In corresponds with that of solid InSb. Prior to evaporation, a partial dissociation of the compound occurs. The vapor pressure above the solid InSb equals the vapor pressure of the metallic Sb plus the vapor pressure of InSb. The vapor pressure of the metallic In is negligible at the temperatures applied. The authors point out that the determination of the vapor pressure with freshly prepared InSb gives increased values. By pulverization of the substance, a disturbance of the crystal lattice occurs, and a crystal surface with excess energy is formed, as it was likewise observed in As_2O_3 and $ZnAs_2$ (Ref 11). There are 1 figure, 2 tables, and 11 references, 8 of which are Soviet.

SUBMITTED: January 12, 1959

85360

21.5200

S/120/60/000/005/034/051
E032/E314

AUTHORS: Ovechkin, V.V., Pirkin, I.A., Polyakov, A.S. and Ochkin, D.V.

TITLE: Method of Calibrating a Scintillation Gamma-spectrometer /9

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No. 5, pp. 126 - 128

TEXT: The conversion of the areas under the photopeaks in scintillation γ-spectra to the total intensities of γ-rays, for a medium-sized NaI(Tl) crystal and energies $E_\gamma \geqslant 300$ keV, can only be carried out if the γ-ray spectrometer is calibrated in a preliminary experiment. This calibration is usually carried out with the aid of standard γ-ray sources with energies close to the energy of the γ-rays under investigation. However, such standard γ-ray sources are not always available. Calculated data suitable for calibration purposes and applicable to the many practical cases, are largely not available either. An absolute calibration curve covering a wide energy interval can be obtained for a scintillation γ-spectrometer with the aid of γ-sources whose intensities are

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E032/E314

Method of Calibrating a Scintillation Gamma-spectrometer

not standardised, provided each of them has a number of γ-lines with known intensity ratios, including soft γ-quanta with energies $\lesssim$ 100 keV (Ref. 1). By definition, the efficiency (relative aperture) of a γ-spectrometer for γ-rays of given energy is given by $\varepsilon = S/N = f(E_\gamma)$ where S is the counting rate in the photopeak and N is the total intensity of γ-rays of the given energy emitted into an angle of 4π. The ratio of efficiencies for hard and soft γ-rays emitted by a given source is then:

$$\varepsilon_i/\varepsilon_o = (S_i/S_o)(N_o/N_i) \qquad (1)$$

where the subscripts i and o refer to hard and soft rays, respectively. Since the soft γ-rays are absorbed in the surface layer of the NaI(Tl) crystal (for example, for E_γ = 90 keV , $\mu = 7.5\ cm^{-1}$), it follows that $\varepsilon_o = S_o/N_o \simeq \omega_o$

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Method of Calibrating a Scintillation Gamma-spectrometer

where ω_o is the relative solid angle subtended by the crystal at the source. The magnitude of S_o must of course be corrected for the absorption of soft quanta in the crystal envelope and in the source, as well as for the fraction of K x-rays of iodine which escape from the crystal (Ref. 2). Thus, the solid angle ω_o can be calculated from:

$$\omega_o = 1/2 \left\{1 - R/\sqrt{R^2 + a^2}\right\} \qquad (2)$$

where R is the distance from the source to the crystal (diameter 2a), S_i/S_o can be measured directly and N_i/N_o can be obtained from published data. Substituting the values for the various quantities in Eq. (1) for a number of γ-sources, one can obtain the calibration function $\varepsilon = f(E_\gamma)$ for a given geometry. The authors have measured this dependence for a NaI(Tl) crystal, 40 mm in diameter and 50 mm long, placed at a

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S/120/60/000/005/034/051
E032/E314

Method of Calibrating a Scintillation Gamma-spectrometer

distance R = 5.3 cm from the source ($\omega_o = 3.2 \times 10^{-2}$). The following γ-sources were employed:

Hg^{203} (E_o = 71 keV, E_1 = 279 keV, α_K = 0.159 (Ref.3), $N_o:N_1$ = 0.14)

Cs^{137} (E_o = 32 keV, E_1 = 661 keV, α_K = 0.11 (Ref.4), $N_o:N_1$ = 0.072)

Ce^{144} + Pr^{144} (E_o = 80, E_1 = 134, E_2 = 700, E_3 = 1490, E_4 = 2180 keV; $N_o:N_1:N_2:N_3:N_4$ = 7.2:15.3:3.56:0.56:1.44 (Ref. 5);

Se^{75} (E_o' = 140, E_1 = 270, E_2 = 400 keV; $N_o':N_1:N_2$ = 123:141:22.3 (Ref. 6).

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Method of Calibrating a Scintillation Gamma-spectrometer

In the first two cases the ratio $N_o:N_1$ was calculated from α_K taking into account the fluorescence emitted from the K-shell (Ref. 7). As can be seen from Fig. 1 all the experimental points except for the 134 keV γ-rays from Ce^{144} lie on the continuous curve and agree with the four calculated points E_γ = 280, 661, 1330 and 2620 keV (full circles) which were obtained by combining the data taken from Refs. 8 and 9 and applying them to our geometry. The experimentally determined function $\varepsilon = f(E_\gamma)$ was confirmed by control measurements using the following γ-ray sources Ra^{226} + daughter products (E_o = 610, E_1 = 350, E_2 = 770, E_3 = 1120, E_4 = 1760, E_5 = 2200 keV, $N_o:N_1:N_2:N_3:N_4:N_5$ = 100:62.5:18.7:45.3:54.3:21.5 (Refs. 10, 11)); I^{131} (E_o = 640, E_1 = 364, E_2 = 720 keV, $N_o:N_1:N_2$ = 11.6:100:2.4 (Ref. 12).

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E032/E314

Method of Calibrating a Scintillation Gamma-spectrometer

Since the intensity of the γ-rays in the soft part of the γ-spectrum for these isotopes is not well known, ε was normalised so that $\varepsilon_{610} = 7.3 \times 10^{-3}$ and $\varepsilon_{640} = 7.0 \times 10^{-3}$. In addition, it was assumed that $\varepsilon_{140} = 2.7 \times 10^{-2}$ in the case of Se^{75}. The γ-ray spectrum was measured with the aid of a 100-channel kicksorter (AM-100 (AI-100)). A typical γ-spectrum (Ra^{226} in equilibrium with its decay products) is shown in Fig. 2. There are 2 figures and 12 references: 1 Swedish, 1 Italian, 4 English and 6 Soviet.

Acknowledgments are expressed to L.T. Polyakova for assistance in the measurements.

SUBMITTED: July 17, 1959

Card 6/6

NAKHUTIN, I.Ye.; OVECHKIN, D.V.; OCHKIN, D.V.; POLYAKOV, A.S.; KHODULEVA, Z.K.

Production of the radioactive isotope Kr^{85} and investigation of its β-radiation. Zhur. eksp. i teor. fiz. 39 no.4:991-992 O '60. (MIRA 13:11)

(Krypton--Isotopes) (Gamma rays)

6437

S/056/60/039/004/013/048
B004/B070

24.6720

AUTHORS: Nakhutin, I. Ye., Ovechkin, V. V., Ochkin, D. V., Polyakov, A. S., Khoduleva, Z. K.

TITLE: Preparation of the Radioactive Isotope Kr^{35} and Investigation of Its Gamma Radiation

PERIODICAL: Zhurnal eksperimental'noy i tecreticheskoy fiziki, 1960, Vol. 39, No. 4(10), pp. 991-992

TEXT: Kr^{35} was obtained by dissolving neutron-irradiated uranium in nitric acid and by separating chromatographically by active carbon at 77°K the gases liberated from moisture, nitrogen oxides, and radioactive iodine. For the measurement of emission, Kr^{35} was filled in a plexiglass cylinder with an aluminum foil bottom. The yield was determined from the ratio $k_\gamma = N_\gamma/N_\beta$, where N_γ, N_β are, respectively, the numbers of 517 kev gamma quanta and of β particles emitted per unit time in the solid angle 4π. The beta radiation was measured by an СИ-2Б (SI-2B) counter, and the gamma radiation by a NaI(Tl) scintillator

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Preparation of the Radioactive Isotope Kr^{35} and Investigation of Its Gamma Radiation

S/056/60/039/004/015/048
B004/B070

and АИ-100 (AI-100)[28] analyzer. The gamma yield of Kr^{35} was found to be (0.41±0.06)% per decay. This value is significantly lower than that given by H. Zeldes et al. (Ref. 1). The authors checked the data by measurements on I^{131} and Cs^{134} whose gamma quantum yield is exactly known. There are 5 references: 3 Soviet and 3 US.

SUBMITTED: May 23, 1960

Card 2/2

KLIMOV, Yu.M.; CHIKIN, V.V.; ANISIMOV, N.I.; BARSKOV, I.M.; VINOGRADOV, Yu.V.; GAVRILOV, A.N.; GAUKHMAN, L.A.; GOLOV, A.P.; GOL'DMAN, L.S.; GUSARENNIKOV, G.I.; YEFIMOV, A.N.; ZALUTSKIY, M.S.; ZAYTSEVA, A.V.; OKYRYSH, A.I.; KANDARITSKIY, V.S.; KAPRANOV, I.A.; KOVALEV, N.I.; KOVALEVSKIY, K.A.; KOLOSOV, A.F.; KRIVOV, A.S.; KRYLOV, R.M.; LEVITAS, A.G.; MALYGIN, M.A.; MORALEVICH, Yu.A.; MOTYLEV, A.S.; NESTEROV, M.V.; NIKOL'SKIY, A.V.; ORLOV, G.M.; ORLOV, Ya.L.; PARENSKIY, V.M.; POLYAKOV, A.S.; RUBIN, V.I.; SVANIDZE, K.N.; STRIGIN, I.A.; TAKOYEV, K.F.; TRUBNIKOV, S.V.; CHERNYSHEVA, L.N.; CHESNOKOV, N.Ye.; SHAMBERG, V.M.; STRUMILIN, S.G., akademik, red.; ANTOSENKOVA, L., red.; MIKAELYAN, E., red.; MUKHIN, Yu., tekhn.red.

[Dictionary of the seven-year plan from A to Z] Slovar' semiletki ot A do IA. Moskva, Gos.izd-vo polit.lit-ry, 1960. 397 p. (MIRA 13:7)

(Russia--Economic policy)

USSR / Forestry. Forest Crops. K-3

Abs Jour: Ref Zhur-Biol., No 6, 1958, 24913.

Author : Polyakov, A. S.
Inst : Not given.
Title : Protective Forest Cultivation in the Dry Steppes.

Orig Pub: Lesn. kh-vo, 1957, No 5, 58-65.

Abstract: Experiments of the Kamyshinskiy mechanized forestry (1949-1956) on creation of the state forest-zone Kamyshin-Stalingrad has shown that of the arboreal species used in plantings, the following have distinguished themselves by the best acclimatization: on chestnut solonetz soils - the small-leaved elm and the green ash (oak on these soils generally perished during the winter); on carbonate soils of chalky marl - the small-leaved elm and tanner's sumac (the Crimea pine, transplanted on these soils

Card 1/2

POLYAKOV, A.S.

Possibilities of increasing the effectiveness of geophysical prospecting for ore deposits. Sov.geol. 4 no.10:42-57 O '61. (MIRA 14:11)

1. Vsesoyuznyy institut razvedochnoy geofiziki.
(Prospecting--Geophysical methods)
(Ore deposits)

BUGROV, Stepan Vasil'yevich,; ZEVAKHIN, Arkadiy Nikiforovich,; POLYAKOV, Aleksandr Semenovich,; GODNEV, Ye.D., red.; SHAKHOVA, L.I., red. izd-va,; BACHURINA A.M., tekhn. red.

[Work practices of mechanized working circles(Kamyshin, Stepnoye, Koltubanka). Opyt raboty mekhanizirovannykh leskhozov(Kamyshinskogo, Stepnogo i Koltubanskogo). Moskva, Goslesbumizdat, 1957. 55 p. (MIRA 11:12)

(Forests and forestry--Equipment and supplies)

POLYAKOV, A.S.

Development and distribution of productive forces in districts of Northern European Russia during the sixth five-year plan, and tasks of economic geography. Izv. AN SSSR.Ser.geog. no.6:70-78 N-D '56. (MLRA 10:1)

1. Institut geografii Akademii nauk SSSR.
(Russia, Northern--Economic policy)

POLYAKOV, A. S.

USSR/Geophysics - Electroprospecting Mar/Apr 53

"Review of 'Instructions for Electroprospecting,'" A. G. Ivanov) (reviewer)

Iz Ak Nauk SSSR, Ser Geofiz, No 2, pp 193-195

Favorable review of book "Instructions for Electroprospecting" (Instruktsiya po Elektrorazvedke), published by the Main Geophysics Admin, Min of Geology USSR, Moscow, 1952; 130 pp, 8,000, copies, price 4.30 rubles. Co-authors are A. S. Semenov, A. V. Veshev, A. S. Polyakov, and N. I. Shukhov. Editor is A. M. Zagarmistr.

PA 254T82

ROMANOV, R.I.; POLYAKOV, A.S.

Automatic press for trimming valve arms. Avt. prom. 30 no.11:
38 N '64 (MIRA 18:2)

1. Gor'kovskiy avtomobil'nyy zavod.

3(5,8) SOV/26-59-3-12/47

AUTHOR: Polyakov, A.S.

TITLE: The European North (Yevropeyskiy sever)

PERIODICAL: Priroda, 1959, Nr 3, pp 71 - 80 (USSR)

ABSTRACT: This is a description of the northern part of European USSR in its geographical, climatic and economic aspects. After outlining the huge dimensions, the borders and climatic conditions, the author states that the European North possesses great reserves of coal of high quality, petroleum, natural gas, bauxite, potassium salt, peat, phosphorites, non-ferrous and rare metals. The development and study of the natural resources began immediately after the October Revolution. Since 1918, the Pechora coal basin has been studied and over 30 coal deposits, such as the Vorkuta, Inta, Syr-Yaginskoye, Khal'mer-Yu, etc., have been discovered. The general geological reserves of the Pechora coal basin amount

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