Microwave investigation of ...

plane wave propagates in the z direction (perpendicular to the wave front) and if ionization is weak the polarization vector of the electrons is:

$$\mathbf{P} = n_e e^2 \frac{-\omega + i\nu}{\omega m(\omega^2 + \nu^2)} \mathbf{E}.$$

P for the ions can be determined analogously, ω - circular frequency of the field, ν - collision frequency of the electron with neutral molecules. The dielectric constant of a medium consisting of s kinds of quasi-elastic molecules, q kinds of solid molecules and free electrons of the density n_e is

$$\varepsilon_c = \varepsilon_0 + 4\pi n\left(\sum_{i=1}^{s} \delta_i \gamma_i' + \frac{1}{3kT}\sum_{j=1}^{q} M_j^2 \gamma_j''\right) - 4\pi \frac{n_e e^2}{m(\omega^2 + \nu^2)}, \qquad (6),$$

where $\gamma_i' = n_i'/n$; $\gamma_j'' = n_j''/n$. n is the specific concentration and M is the electric moment of the solid molecules. The conductivity is $\sigma_o = \sigma(1 + \omega^2/\nu^2)$ where $\sigma = n_e e^2 \nu/m(\omega^2 + \nu^2)$. Solid molecules are in the

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Microwave investigation of ...

methane-air flame H_2O and CO. The mean polarizability of air molecules in $\delta = 1.7 \cdot 10^{-24}$. ε can be calculated from $\varepsilon_c = 1 + \Delta\varepsilon_1 + \Delta\varepsilon_2$, where $\Delta\varepsilon_1 = 0.156\ p/T$; $\Delta\varepsilon_2 = 780\ p_{H_2O}/T^2$. The attenuation factor of the electric field strength is

$$\beta = \left\{ \frac{\mu\omega^2}{2c^2} \left[-\varepsilon_c + \sqrt{\varepsilon_c^2 + \left(4\pi \frac{\sigma}{\omega}\right)^2} \right] \right\}^{1/2}. \qquad (5)$$

and the power of the waves is $N = N_0 \exp(-2\beta z)$. In the flame $\mu \approx 1$, and if $\hat{\beta}$ is given in decibels the conductivity of the medium is $\sigma_0 = 6.16 \cdot 10^{-4} (1 + \omega^2/\nu^2)\hat{\beta}/z$ mohm/cm. There are 4 figures and 7 non-Soviet references. The four most recent references to English-language publications read as follows: Rosa R. The Physics of Fluids, 4, no. 2, 182, 1961; Way S., Hunstad R. L. Combustion and Flame, 4, no. 4, 1960; Botha J. P., Spalding D. B. Proceedings of the Royal Society, A225, 71-96, 1954; Saha M. N. Phil. Mag., 40, 472, 1920.

Card 3/4

S/170/62/005/003/006/012
Microwave investigation of ... B152/B102

ASSOCIATION: Energeticheskiy institut AN SSSR imeni G. M. Krzhizhanovskogo, g. Moskva (Institute of Power Engineering AS USSR imeni G. M. Krzhizhanovskiy, Moscow)

SUBMITTED: July 14, 1961

Card 4/4

41327

S/057/62/032/009/010/014
B117/B186

AUTHORS: Zimin, E. P., and Popov, V. A.

TITLE: Experimental investigation into the conductivity of combustion products of methane - oxygen mixtures with alkali metal additives

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 9, 1962, 1099 - 1101

TEXT: The electrical conductivity of combustion products from a methane-oxygen flame to which K_2CO_3 had been added under standard pressure (760 mm Hg), was studied with a view to using the chemical reactions in the flame as a source of power and in order to determine the conductivity of potassium vapor diluted with combustion products. The partial pressure p_g of the potassium was varied within the range 10^{-7} to 10^{-4} atm. The electrical conductivity was determined from the attenuation of radio waves (~9000 Mc/sec) passing through the flame, and the temperature was measured by the doublet method (Na). The maximum temperature of the combustion products was 2400°K. When the temperature was increased in the

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Experimental investigation into the...

range under consideration (1600 - 2400°K), the experimental values of conductivity deviated from theoretical data (Fig. 1), but the theoretical dependence of conductivity on partial pressure of the additive remained valid. This shows that conventional methods (M. N. Saha. Phys. Mag., 40, 472, 1920; Chapman, T. Cowling. Matematicheskaya teoriya neodnorodnykh gazov (Mathematical theory of inhomogeneous gases), IL, 1960) cannot be used for calculating conductivity of ionized products. The deviations may be due either to a relatively random value of Q ($Q = 10^{-15}$ cm^2, having been chosen and considered constant for the given temperature range) or to the mechanism of the vanishing of electrons. There are 1 figure and 1 table.

ASSOCIATION: Energeticheskiy institut im. G. M. Krzhizhanovskogo, Moskva (Power Engineering Institute imeni G. M. Krzhizhanovskiy Moscow)

SUBMITTED: November 2, 1961

Fig. Temperature dependence of conductivity.
Legend: (I) calculated values; (II) experimental values.

Experimental investigation into the...

Curve	p_g, atm
1	$3.75 \cdot 10^{-4}$
2	$3.20 \cdot 10^{-5}$
3	$3.20 \cdot 10^{-6}$
4	$3.20 \cdot 10^{-7}$

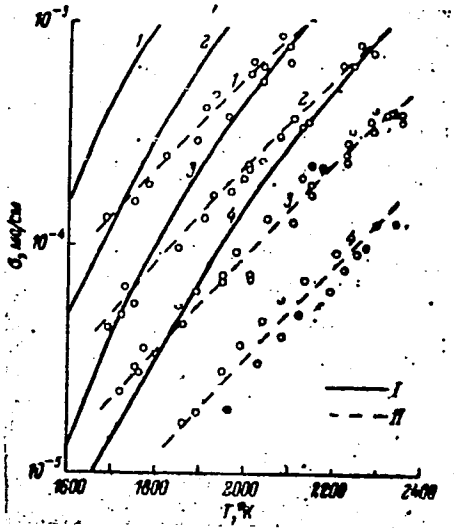

Fig. 1.

Card 3/3

ZIMIN, E.P.; POPOV, V.A.

Studying the electric conductivity of a flame by the microwave method. Inzh.-fiz.zhur. 5 no.3:66-71 Mr '62. (MIRA 15:3)

1.Energeticheskiy institut AN SSSR imeni G.M.Krzhizhanovskogo, Moskva.
(Flame)(Electric conductivity)(Electromagnetic waves)

POPOV, V.A. (Moskva); SHEKLEIN, A.V. (Moskva)

Distribution of the relative radiation intensities of radicals in a plane methane-air flame. PMTF no.6:35-38 N-D '62. (MIRA 16:6)
(Radicals (Chemistry)--Spectra) (Methane)

ZIMIN, E.P.; POPOV, V.A.

Experimental study of the conductivity of the products of combustion of methane-oxygen mixtures with alkali metal additives. Zhur. tekh. fiz. 32 no.9:1099-1101 S '62. (MIRA 15:9)

1. Energeticheskiy institut imeni G.M. Krzhizhanovskogo, Moskva.
(Plasma (Ionized gases)—Electric properties)

POPOV, V. A., ZIMIN, Ye. P.,

"Determination of Mean Cross-section of Electron-neutral Atom Collisions in a Two-component Weakly Ionized Gaseous Mixture,"

report presented at the 6th Intl. Conf. on Ionization Phenomena in Gases, Paris, France, 8-13 Jul 63

POPOV, V.A., red.; KOZLOV, V.D., red.; MURASHOVA, N.Ya., tekhn. red.

[Magnetohydrodynamic method of energy conversion] Magnitogidrodinamicheskii metod preobrazovaniia energii. Moskva, Fizmatgiz, 1963. 536 p. (MIRA 16:12)
(Magnetohydrodynamics) (Power (Mechanics))

L 9927-63 EWT(1)/FCC(w)/BDS—AFFTC/ASD/ESD-3—IJP(C)
ACCESSION NR: AP3002827 S/0207/63/000/003/0162/0164

56

AUTHOR: Zimin, E. P.; Popov, V. A. (Moscow)

TITLE: Effect of a magnetic field on the optimum composition of an electroconductive gaseous mixture

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 3, 1963, 162-164

TOPIC TAGS: electroconductivity of a gas, Cs seeding, seeding-vapor concentration

ABSTRACT: The effect of a magnetic field on the electroconductivity of a gaseous mixture has been investigated. It is shown that while electroconductivity remains constant along the magnetic field, it varies in the transverse direction with field strength. To find the conditions for maximum transverse electroconductivity of a mixture of a practically nonionizable diluent gas with a seeding vapor in the presence of a magnetic field, the optimum seeding ratio as a function of intensity of the magnetic field was sought. It is found that at a fixed pressure and a value of H at which the optimum concentration of the seeding vapor is still relatively small, this concentration practically ceases to depend on the nature of the diluent. At lower magnetic-field intensities this phenomenon

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L 9927-63
ACCESSION NR: AP3002827

appears when the pressure is reduced. Above a certain critical field strength the optimum value of relative concentration of the seeding vapor becomes equal to unity, and the problem of finding the optimum composition becomes meaningless. Curves of relative conductivity as a function of magnetic field are given for mixtures of Cs with Ar, He, and CO sub 2 at 3000K and 3 atm. Orig. art. has: 4 figures and 5 formulas.

ASSOCIATION: none

SUBMITTED: 05Mar63 DATE ACQ: 16Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 002 OTHER: 000

Card 2/2

ACCESSION NR: AP3014930 S/0207/63/000/005/0142/0143

AUTHORS: Zimin, E. P. (Moscow); Popov, V. A. (Moscow)

TITLE: Determination of the mean cross section of electron collisions with neutral atoms of a weakly ionized gas mixture

SOURCE: Zhurnal prikl. mekhaniki i tekhn. fiziki, no. 5, 1963, 142-143

TOPIC TAGS: electron collision, collision cross section, neutral gas atoms, weakly ionized gas mixture

ABSTRACT: An experiment has been conducted to determine the mean collision cross section of electrons with atoms in the temperature range 1900-2300K. The method consists of measuring radio wave attenuation in the combustion products of methane-oxygen mixture with the addition of various concentrations of K_2CO_3 as seeding material. The formula used to calculate the coefficient of attenuation γ is given by

$$\frac{1}{\gamma}=\frac{1}{\varepsilon}\frac{\omega^2}{\nu}+\frac{\nu}{\varepsilon} \qquad (\varepsilon=n_e/2.16)$$

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ACCESSION NR: AP3011930

where (ω) - angular frequency of radio wave, ν) - effective electron collision frequency with heavy particles, where it has been assumed that seed atom concentration is very low. The effective electron collision frequency is assumed to be proportional to the sum of average collision cross sections of each atom species in the combustion mixture and the ions. Orig. art. has: 8 formulas and 1 table.

ASSOCIATION: none

SUBMITTED: 01Apr63 DATE ACQ: 27Nov63 ENCL: 00

SUB CODE: AS, PH NO REF SOV: 001 OTHER: 003

Card 2/2

VORONEL', A.V.; CHASHKIN, Yu.R.; POPOV, V.A.; SIMKIN, V.G.

Measurement of the heat capacity C_v of oxygen near the critical point. Zhur. eksp. i teor. fiz. 45 no.3:828-830 S '63. (MIRA 16:10)

1. Institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy.

(Oxygen--Thermal properties)

ACCESSION NR: AP4020583 S/0057/64/034/003/0523/0526

AUTHOR: Zimin, E.P.; Popov, V.A.

TITLE: Experimental investigation of the electric conductivity of products of combustion with potassium added

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.3, 1964, 523-526

TOPIC TAGS: gas conductivity, combustion product, combustion product conductivity, conductivity enhancement, potassium induced ionization, gas conductivity measurement, hydrocarbon combustion, methane air mixture, methane oxygen mixture, potassium, potassium carbonate

ABSTRACT: The products of combustion of hydrocarbon fuels are suitable for investigation of the properties of weakly ionized gases. In such combustion products with some appropriate readily ionized material added one can independently vary the two fundamental parameters that determine the conductivity of the gas, namely, the electron concentration and the frequency of collision of the electrons with the heavy particles. Increase of the gas conductivity is important for many studies. In the present work there were investigated the combustion products of methane-air and me-

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ACC. NR: AP4020583

thane-oxygen mixtures, all at atmospheric pressure. The temperature was varied by changing the composition of the mixtures. The ionizing additive - potassium - was introduced into the air or oxygen in the form of K_2CO_3 solutions of different concentrations. The temperature of the combustion products was determined by observation of reversal of the sodium doublet. The conductivity of the gas was determined by three procedures: measurement of the attenuation of radiowaves, measurement of the change in the Q or frequency of a circuit including a cooled coil filled with the medium, and measurement by means of probes. The three procedures are described and it is noted that the probe method has generally been used only in the region of low pressures. The results are presented in Fig.1 of the Enclosure for four values of K partial pressure. The results are consistent and indicate that the conductivity of the gas varies in proportion to the square root of the partial pressure of the easily ionized additive. Thus, all three conductivity measurement procedures can be used under appropriate conditions. "The authors are grateful to Prof.L.N.Khitrin for his interest in the work." Orig.art.has: 10 formulas and 2 figures.

ASSOCIATION: Energeticheskiy institut im.G.M.Krzhizhanovskogo,Moscow (Power Engineering Institute)

SUBMITTED: 26Mar63 DATE ACQ: 31Mar64 ENCL: 01

SUB CODE: PH NR REF SOV: 004 OTHER: 002

Card 2/3

ZIMIN, Ye. P.; POPOV, V. A.

"On the Problem of Optimum Composition of Conductive Gaseous Mixture."

report presented at the Intl Symp on Magnetohydrodynamic Electrical Power Generation, Paris, 6-10 Jul 64.

POPOV, V.A. (Moskva); SHEKLEIN, A.V. (Moskva)

Spectroscopic study of a plane methane-air flame in an electric field. Nauch.-tekh. probl. gor. i vzryva no.1:76-79 '65. (MIRA 18:9)

L 05064-67 EWT(m)/EWP(t)/ETI LIP(c) JD/JG/JR/GD
ACC NR: AT6027938 SOURCE CODE: UR/0000/66/000/000/0202/0205

AUTHOR: Degtyarev, S. F.; Kukhtevich, V. I.; Matusevich, Ye. S.; Popov, V. I.

ORG: None

TITLE: Spectra of air-scattered neutrons from a Po-α-Be source surrounded by iron shielding of various thickness

SOURCE: Voprosy fiziki zashchity reaktorov (Problems in physics of reactor shielding); sbornik statey, no. 2. Moscow, Atomizdat, 1966, 202-205

TOPIC TAGS: radiation shielding, neutron energy distribution, neutron spectrum, neutron scattering

ABSTRACT: The authors measure the energy distributions of neutrons scattered in the unbounded atmosphere. The distance between source and detector was set at 10 m. A composite Po-Be source with an intensity of approximately $5 \cdot 10^8$ neutr/sec was used with surrounding iron shielding with wall thicknesses of 5, 10 and 15 cm. A spherical ionization chamber filled with a mixture of 5 atm of argon and 5 atm of hydrogen was used for neutron detection. The measurements were made in the 0.8-3.0 Mev range. The results show unbalanced neutron spectra in iron at low energies (average spectral energy from the Po-Be source is 4.5 Mev). The initial neutron spectrum is softened by scattering in air at the energies studied. The number of scattered neutrons decreases

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ACC NR: AT6027938

smoothly with respect to the number of unscattered neutrons with an increase in the initial energy from 0.28 at E_n=0.8 Mev to 0.15 at E_n=3 Mev. The data in this paper may be used for modeling various descending continuous spectra and for estimating and calculating the background due to neutrons scattered in air. Orig. art. has: 3 figures.

SUB CODE: 18/ SUBM DATE: 12Jan66/ ORIG REF: 003/ OTH REF: 001

Card 2/2

ACC NR: AP6036981 (A,N) SOURCE CODE: UR/0181/66/008/011/3339/3343

AUTHOR: Popov, V. A.

ORG: Physicotechnical Institute of Low Temperature AN UkrSSR, Khar'kov (Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR)

TITLE: Concerning one mechanism of line broadening of optical absorption in a ferrodielectric

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3339-3343

TOPIC TAGS: ferrodielectric, light absorption, spin orbit interaction, temperature dependence, Green function

ABSTRACT: This is a continuation of earlier work (Izv. AN SSSR ser. fiz. v. 30, 927, 1966; FTT v. 8, 467, 1966) where it was shown that the temperature dependence of the parameters of the light-absorption band in magnetically-ordered crystals can be connected with exchange spin-orbit interaction. The present paper is devoted to calculation of the temperature dependence of the width of the light absorption band in a ferrodielectric, whereas the earlier investigations were devoted to ferromagnetic and antiferromagnetic dielectrics. The ferrodielectric is described by the same Hamiltonian as was used in earlier work, and a Green's function procedure is used to calculate the dependence of the absorption line width on the temperature at $T \ll T_c$. The

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ACC NR: AP6036981

results show that the line width is proportional to T^4, whereas the frequency shift of the absorption line is proportional to $T^{5/2}$. Orig. art. has: 34 formulas.

SUB CODE: 20/ SUBM DATE: 06Mar66/ ORIG REF: 003

Card 2/2

17.4312 26994 S/191/61/000/009/004/007
15 8460 also 2209 B110/B218

AUTHORS: Popov, V. A., Nikolayev, I. N., Smirnov, R. N., Kondrat'yeva, V. A.

TITLE: Production of heat-resistant polymers by pyrolysis. Foam cokes

PERIODICAL: Plasticheskiye massy, no. 9, 1961, 26-28

TEXT: The authors produced heat-resistant foamed materials by coking various gas-filled plastics. Initial foamed-material specimens were placed in a special mixture, [Abstracter's note: not indentified.] and uniformly heated to a temperature exceeding that of their pyrolysis; then they were again uniformly cooled to room temperature. The material did not come in contact with air, and the volatile products were removed. The authors found that the original configuration of the initial specimen may be preserved with uniform reduction of all dimensions in an oriented position with respect to the thermal field. The relations between chemical structure, behavior in pyrolysis, and properties of foam cokes were determined. Foamed materials of linear thermoplastic (polystyrene, polyvinyl chloride) and linear, weakly thermosetting polymers (polyurethane, epoxy resins) were

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Production of heat-resistant...

destroyed. Foam cokes were produced from foamed, hardened high-molecular plastics with rigid trimeric structure and numerous crosslinks: foamed phenoplastics, organosilicon foamed materials and their modifications, and foamed materials produced on epoxy resin basis, the bisphenol of which was substituted by a multifunctional complex on the basis of bivalent phenols (foamed material ЭФ(ЕР)). The number of crosslinks affects the heat resistance decisively. Aromatic nuclei do not affect it in linear, only in steric polymers. The volume weights of the initial foamed plastics and the foam cokes obtained from them lie very close to each other, a slight increase (7-10 %) in the weight of the latter is explained by the removal of volatile pyrolysis products. As compared with the initial foamed plastics, the foam cokes have higher rigidity, heat resistance, and compressive strength both at room and at high temperatures. This holds true especially for foam cokes from initial foamed materials consisting of trimeric polycondensates and linear-structure polymers. The yield in volatile products in coking is not additive but depends on the interaction between polymers and radicals formed in their pyrolytic cleavage. In contrast to non-conducting foamed plastics, foam cokes are weakly conductive. The change in weight and linear dimensions of ФК-20 (FK-20) foamed plastics with different amounts of fillers show that the

PLASTIC I BOOK EXPLOITATION SOV/4507

Penoplastmassy; sbornik statey (Foam Plastics; Collection of Articles) Moscow, Oborongiz, 1960. 182 p. Errata slip inserted. 5,000 copies printed.

Ed.: A.A. Kolesyev, Candidate of Technical Sciences, V.V. Pavlov, and M.Ya. Borodin; Managing Ed.: A.S. Zayevskaya, Engineer; Ed. of Publishing House: I.A. Shvarova; Tech. Ed.: V.I. Ovechkina.

PURPOSE: This book is intended for engineers and technicians planning and manufacturing products and structures using lightweight fillers, and for workers of the foam plastic industry.

COVERAGE: The volume contains 13 studies on foam plastics and foaming agents. Some of the studies provide data on the technology of producing foam plastics from polystyrene and polyvinyl chloride, and data on thermosetting polymers (phenol rubber compositions, polyurethane foam, polyepoxy foam, and foam plastic sheets based on organic silicon resins). Other studies contain data on the composition of foam plastics, the effect of technological factors and volumetric weight on the physical, mechanical, and dielectric properties of foam plastics, and on the fields of application of foam plastics. Several studies deal with the production technology of radomes and reflectors for antenna installations in aircraft units. It is stated in the foreword that the Soviet Union produces and uses foam plastic sheets based on thermoplastic and thermosetting polymers of rigid, elastic, foamy, and porous structure. Fifteen such plastics including some of their specifications and applications are listed. There are no bibliographies but the authors cite Soviet and other authorities including A.A. Berlin, the author of Osnovy proizvodstva stekloplastikov i elastomerov (Principles of Production of Glass Filled Plastics and Elastomers) published by Goskhimizdat in 1958.

Rogov, L.V., and V.V. Pavlov. Production of Polystyrene Foam Based on Different Foaming Agents 45
This study presents experimental data on the physical and mechanical properties of polystyrene foam produced using four different foaming agents. It describes the properties of the foaming agents, the composition of the foam plastic sheets, and pressing conditions for different compositions.

Sukhareva, V.Ye. Hollow Foam Plastic Sheets 50
This study presents experimental data on hollow and compact foam plastic sheets. It is concluded that either type of foam can be used as filler for various structures and that the use of such fillers will reduce the weight and cost of the product.

Shikina, T.V., and V.V. Pavlov. Making Products From Polystyrene Foam Using Polymer and Monomer Pastes 53
The following conclusions were reached: 1) polystyrene foam with polymer and monomer paste is suitable for products of various depth and diameter requiring no mechanical processing of the inner contour 2) the physical and mechanical properties of this foam do not differ from those of foam plastic sheet PS-1, except in specific impact strength which is approximately two times lower than in the foam plastic sheet PS-1 3) the high fluidity of polymer and monomer pastes permits pressing and polymerization at low specific pressure and consequently eliminates the use of heavy hydraulic presses 4) polymer and monomer paste contains 50 percent cheaper styrene consequently lowering the cost of the finished product.

Bulidor, V.M. Industrial Experience Producing Foam Plastic Sheets by the Pressing Method 81
The author lists the advantages and disadvantages of the pressing method and describes the steps in manufacturing foam plastic sheets by this method. He concludes that the use of foam plastic sheets under industrial conditions has shown that the pressing method is suitable for the production of materials of high physical and mechanical properties. Furthermore, the output of finished products can be increased by installing several molding presses at each story of a multistory press and by feeding the intermediate products in multistory conditions and molds.

Pavlov, V.V. and V.A. Kontratyeva. Foam Plastic Sheets Based on Phenol Formaldehyde Resin and Its Combinations With Rubber and Fillers 91
This is a detailed study of foam plastic sheet production based on phenol formaldehyde lacquer resin (foam plastic sheet FF) and on combinations of this resin with asbestolite (foam plastic sheet of the FK type). In the Soviet Union these foam plastics are produced by the non-pressure method and are among the most commonly used products.

S/191/60/000/010/007/017
B004/B060

AUTHOR: Popov, V. A.

TITLE: Gas-filled Plastics on the Basis of Phenol Aldehyde Resins, and Their Composition With High Polymers

PERIODICAL: Plasticheskiye massy, 1960, No. 10, pp. 20-25

TEXT: The author reports on experiments conducted for the production of heat-resistant gas-filled plastics and their compositions with high polymers which may adopt any arbitrary form. The base product was phenol-formaldehyde novolak resin No. 18, or phenol-furfurole novolak resin No. 118-3Ф (118-ZF). Their composition was brought about with the following polymers. Polyvinyl chloride: foam plastic and pressed material of the type ФХ (FKh); Soviden (a copolymer of vinyl chloride with vinylidene chloride): foam plastic and pressed material of the type ФС (FS); polymethacrylate: foam plastic and pressed material of the type ФПМ (FPM); polychloro trifluoro ethylene or Ftoroplast-3; foam plastic type Ф (F) or ФП -3 (FP-3); with a fluorine-containing copolymer: foam plastic type Ф (F) or ФП -Х (FP-Kh); polyacrylonitrile : foam plastic

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Gas-filled Plastics on the Basis of Phenol Aldehyde Resins, and Their Composition With High Polymers

S/191/60/000/010/007/017
B004/B060

type "ФПак" ("FPak"); Lavsan (polymer of ethyl terephthalate): foam plastic type "ФЛав" ("FLav"); ethyl cellulose: foam plastic type "ФЭц" ("FEts"); natural rubber: foam plastic type "ФК$_{нк}$" ("FK$_{nk}$"); sodium butadiene rubber type СКБ (SKB): foam plastic type "ФК$_{скб}$" ("FK$_{skb}$"); nitrile rubber types СКН-26(SKN-26) and СКН-40 (SKN-40): foam plastics and pressed materials type "ФК" ("FK"); carboxylated nitrile rubbers of types СКН-26-3 (SKN-26-3), СКН-26-5 (SKN-26-5), СКН-40-3 (SKN-40-3), and СКН-40-5 (SKN-40-5): foam plastics types ФМК(26-3) (FMK(26-3)) and ФМК(40-5) (FMK(40-5)); chlorine-containing elastomers of types a$_{14}$ and a$_{16}$: foam plastics of type "Фа" ("Fa"). The investigation was extended to methods of the composition of phenol formaldehyde resin with polymers, conditions of foaming, effect of hardeners, accelerators, and other admixtures. In the case of FF, FPM, and FS the composition was brought about by mixing the powder in a ball mill; in the case of FKh, FEts, FPak, FLav in the molten state, in fluorine-containing and rubber compositions by rolling or extruding. The bulky numerical material concerning

Card 2/3

PANSHIN, B.I.; POPOV, V.A.; FEDORENKO, A.G.; BUYANOV, G.I.; YEFIMOVA, V.S.; GORSKIY, K.P.

Mechanical properties of plastic foams determining their efficiency as reinforcing fillers; efficiency of plastic foams in structures under static load conditions. Plast.massy no.12:31-35 '63. (MIRA 17:2)

KESSENIKH, R.M.; PETROV, A.V.; POPOV, V.A.; LOPATINSKIY, V.P.; SIROTKINA, Ye.Ye.

Dielectric losses of polar polymers based on carbazole. Vysokom. soed. 7 no.2:328-332 F '65. (MIRA 18:3)

POPOV, V.A.; DRUYAN, I.S.; VARSHAL, B.G.

Using the thermal analysis method in the study of processes taking place during the heating of polymers. Plast.massy no.6:52-53 '64. (MIRA 18:4)

POPOV, V.A.; MOISEYEV, A.A.; BORODIN, M.Ya.; KONDRAT'YEVA, V.A.; GORSKIY, K.P.; KAZAKOVA, Z.I.; TROYAN, G.V.; DURASOVA, T.F.;

[Foam plastics and porous plastics] Penoplasty i poroplasty. Moskva, Goskhimizdat, 1962. 30 p. (MIRA 16:8)

1. Moscow. Vystavka dostizheniy narodnogo khozyaystva SSSR. (Plastics)

3833. **Excess pressure evaluation method in the foaming process during the preparation of foamed plastics** V. A. Popov [illegible] and [illegible] *Khim* [illegible] 50 [illegible]

The conditions are discussed during the [illegible] autofoaming of thermo- [illegible] [illegible] the opposing gas pressure during the process. Excess pressure increases with an increase in the blowing agent and the bulk weight of the plastic.

3S626X1.1

BIKKULOV, A.Z.; GROSHEV, B.M.; POPOV, V.A.

Comparison of selective solvents. Izv. vys. ucheb. zav.; neft' i gaz 8 no.6:67-72 '65. (MIRA 18:7)

BIKKULOV, A.Z.; POPOV, V.A.; GROSHEV, B.M.

Selective solvents for extracting aromatic hydrocarbons from gasoline fractions. Nefteper. i neftekhim. no.6:33-34 '65. (MIRA 18:7)

1. Ufimskiy neftyanoy institut.

L 53785-65

ACCESSION NR: AP5014946

UR/0065/65/000/006/0013/0018
665.52.061.5

AUTHORS: Bikkulov, A. Z.; Groshev, B. M.; Popov, V. A.

TITLE: Selective solvents for hydrocarbon extraction

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 6, 1965, 13-18

TOPIC TAGS: solvent, solvent action, solvent extraction, hydrocarbon, furfurole, dimethylformamine/ DEG selective solvent

ABSTRACT: A new procedure is recommended for hydrocarbon extractions according to which the selective and dissolving capacities of 27 solvents were compared. Several extractions were made with each solvent at the temperature interval limited by the critical temperature of solution at the maximum and that of the phasal state variation at the minimum point. The results are presented graphically as curves showing the relation of the extraction temperature to the quantity of extract and of the extract yield to the selectivity index. Three types of crude were used in the experiments: 1) deparaffined oil fraction 400-500C; 2) a mixture of 30% alpha-methylnaphthalene and 70% cetane; 3) equal quantities of o-xylene and n-nonane. The separation selectivity of the 2 and 3 crudes was

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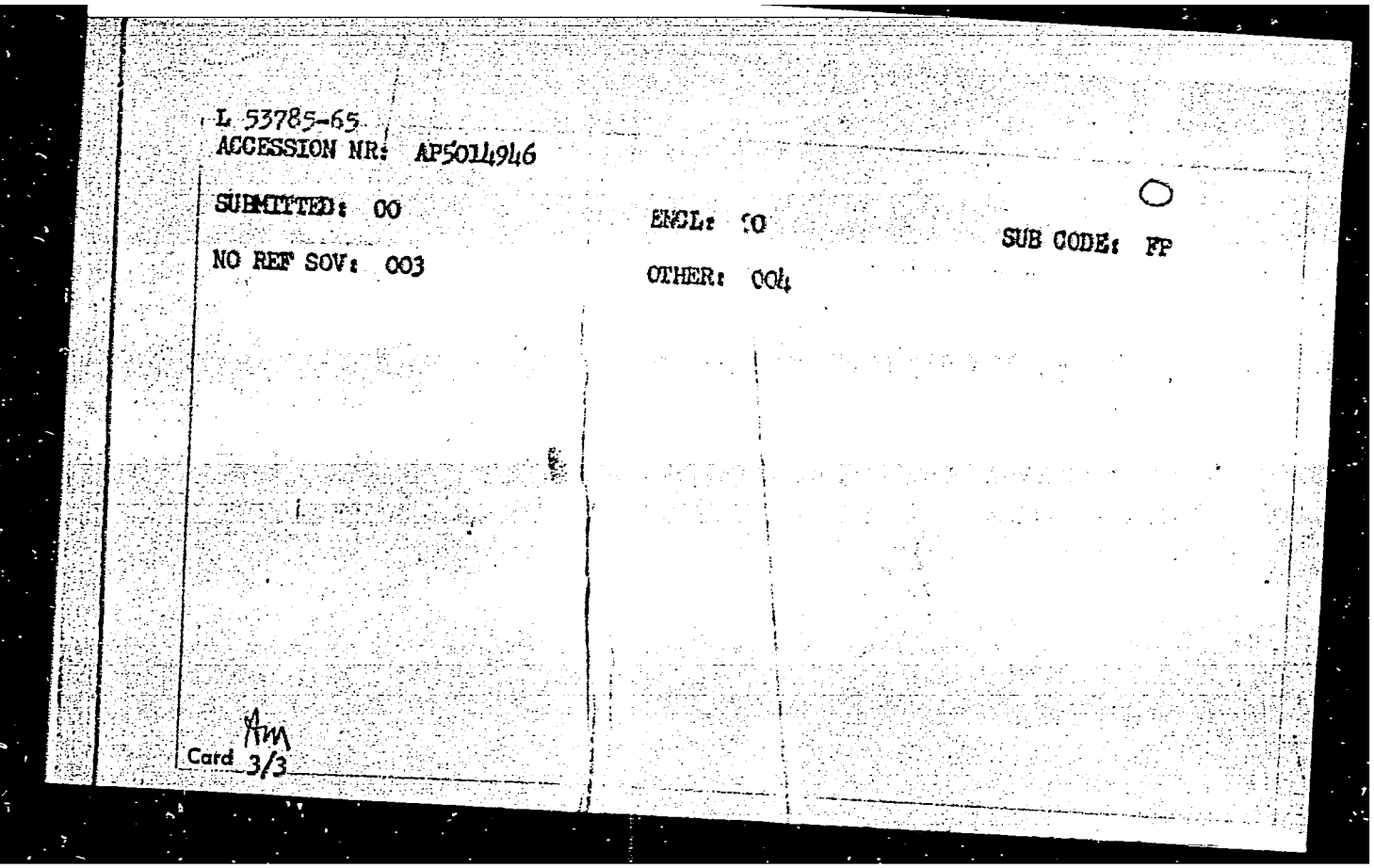
...for the extraction of low-molecular aromatics from ... propylene carbonate, and ... best ... solvents and crudes, they are regenerated easily by distillation. Their properties are superior to those of the popular selective solvent DEG. Orig. art. has: 1 table and 6 figures.

ASSOCIATION: UNI

Card 2/3



L 53785-65
ACCESSION NR: AP5011946

SUBMITTED: 00 ENCL: 00 SUB CODE: FP

NO REF SOV: 003 OTHER: 004

Card 3/3

POPOV, V.A.; SMIRNOV, R.N.; KULYAY, Z.T.; KONDRAT'YEVA, V.A.

Preparation of heat-resistant polymer materials by pyrolysis methods. Foam graphites. Plast. massy no.12:18-21 '62. (MIRA 16:1)

(Polymers--Thermal properties) (Pyrolysis)

ACC NR: AP5026029 SOURCE CODE: UR/0405/65/000/001/0076/0079

AUTHOR: Popov, V. A. (Moscow); Sheklein, A. V. (Moscow)

ORG: None

TITLE: Spectroscopic investigation of a plane methane-air flame in an electric field

SOURCE: Nauchno-tekhnicheskiye problemy goreniya i vzryva, no. 1, 1965, 76-79

TOPIC TAGS: air, methane, electric field, flame, flame photometry, combustion mechanism, gas spectroscopy

ABSTRACT: This is a continuation of an earlier layer-by-layer spectroscopic study of C_2 and CH radical radiations within a methane-air flame. Theoretical investigations of the chemical reaction in electric and magnetic fields indicated the possibility that the reaction equilibria may be shifted and that the yield of the final products may be altered. The present authors studied the influence of a longitudinal electric field on the redistribution of the emitting particles within the combustion front. Measurements were carried out at atmospheric pressure on C_2 (5165 A) and CH (4312 A) radicals. The burner, 80 mm in diameter, was mounted on a 100 kv insulator as shown in Fig. 1. Tests were carried out using nine different high voltage connections. All the resulting macroscopic changes and perturbations in the combustion zone can be fully explained by gas-dynamic considerations ("electric wind") in agreement with

Card 1/2

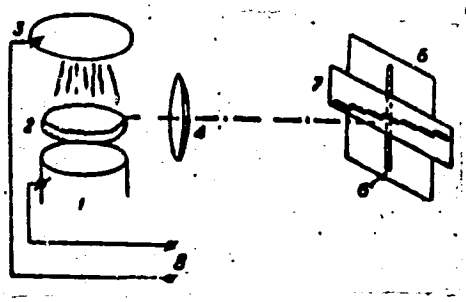


Fig. 1 Optical diagram of the spectroscopic investigation of the plane front of a methane-air flame within an electric field.

1 - burner - first electrode; 2 - flame front plane; 3 - stabilizer - second electrode; 4 - Yupiter-3 projecting objective, 1:1.5, f = 50 mm; 5 - plane of the flame front image; 6 - entrance slit of the ISP-51 spectrograph; 7 - Hartman diaphragm with horizontal slits; 8 - clamps connected to a Tesla rectifier

the views of B. Lewis and G. von Elbe (Combustion, Flames and Explosions of Gases, 2nd Edition, Academic Press, ch. IX, New York-London, 1961. This is true up to the 5 kv/cm field above which value the breakdown begins. Orig. art. has: 1 figure.

SUB CODE: FP, ME / SUBM DATE: 02Nov64 / ORIG REF: 009 / OTH REF: 005

ABIBOV, A.L., inzh.; POPOV, V.A., kand.tekhn.nauk

Method for producing gas-entrained plastics of light-weight fillers for components of airplane structures without pressing. Trudy MAI no.93:64-80 '57. (MIRA 10:12)

(Plastics)

POPOV, V.A.; NIKOLAYEV, I.N.; SMIRNOV, R.N.; KONDRAT'YEVA, V.A.

Problems involved in the production of heat-resistant polymer materials by pyrolysis. Plast.massy no.9:26-29 '61. (MIRA 15:1)
(Polymers--Thermal properties)

15.8460
15.8092

39836
S/081/62/000/011/049/057
E202/E192

AUTHORS: Popov, V.A., and Kondrat'yeva, V.A.

TITLE: Foam plastics based on phenol-formaldehyde resins and their compatibility with rubbers and fillers

PERIODICAL: Referativnyy zhurnal, Khimiya, no.11, 1962, 592-593, abstract 11 P 79. (In the Symposium: "Penoplastmassy" ("Foam Plastics"), Moscow, Oborongiz, 1960, 91-108).

TEXT: Foam plastics of types ФФ (FF) and ФК (FK) are prepared on the basis of phenol-formaldehyde resin no.18 of the novolac type, acrilonitrile rubber СКН-40 (SKN-40), hexamethylenetetramine (hardener for the novolac type resins), S (vulcanising agent for the rubber) and product no.57 (foaming agent). All these components, with the exception of rubber, are mixed in a ball mill for 2-3 hours and the mixture is used as an intermediate for the preparation of FF. In order to prepare intermediate product FK the composition is rolled with rubber for 20-25 minutes at a temperature $\leq$ 60-70 °C. The intermediate FK comes out in the form of film or powder or thread-like material. The foaming (90-110 °C), hardening (150-200 °C) and

Card 1/2

POPOV, V.A.

POPOV, V.A.

VLADISLAVEV, V.S.

25(1) PHASE I BOOK EXPLOITATION SOV/1439

Spravochnik metallista v pyati tomakh, t. 3, kn. 1 (Metals Engineering Handbook in Five Volumes, Vol. 3, Bk. 1) Moscow, Mashgiz, 1958. 560 p. 30,000 copies printed.

Ed. (Title page): V.S. Vladislavlev, Professor (Deceased); Ed. (Inside book): V.I. Krylov, Engineer; Tech. Ed.: T.F. Sokolova; Editorial Board: N.S. Acherkan (Chairman and Chief Ed.), Doctor of Technical Sciences, Professor, V.S. Vladislavlev, Professor (Deceased), A.N. Malov, Candidate of Technical Sciences, S.N. Pozdnyakov, A.Ya. Rostovykh, O.B. Stolbin, and S.A. Chernavskiy; Managing Ed. for Reference Literature: V.I. Krylov, Engineer.

PURPOSE: The book is a reference book for technicians and engineers working in the field of machinery design and in production.

COVERAGE: The book covers the following: engineering specifications, treatment and use of cast iron, steel and carbides, heat treatment of steel and cast iron, specifications, treatment and use of nonferrous metals and nonmetallic materials. I.E. Yanzhogorskiy, V.P. Vologdin, N.V. Gevaling are mentioned as having contributed in this field.

Card 1/14

Plastics (V.A. Popov, Candidate of Technical Sciences)	465
Basic engineering characteristics of plastics	509
Rubber and Hard Rubber Materials and Products (V.A. Loyetov, Candidate of Technical Sciences)	526
Hard rubber	527
Rubber products	528
Graphite (V.S. Veselovskiy, Doctor of Technical Sciences)	535
Index (S.L. Khas'minskiy)	559

AVAILABLE: Library of Congress

00/pw
5-28-59

Card 14/14

PANSHIN, B.I.; KUPOV, V.A.; FEDORENKO, A.G.; BUYANOV, G.I.; YEFIMOVA, V.S.; GORSKIY, K.P.

Mechanical properties of plastic foams determining their efficiency as reinforcing fillers. Report No.2: Efficiency of plastic foams in structures under cyclic loads. Plast. massy no.2:39-43 '64. (MIRA 17:8)

POPOV, V. A.; DRUYAN, I. S.; VARSHAL, B. G.

Using the thermal analysis method for studying the processes taking place in the heating of polymers; phenol-aldehyde resins. Plast. massy no. 5:15-19 '64. (MIRA 17:5)

ACCESSION NR: AP4035100 S/0191/64/000/005/0015/0019

AUTHOR: Popov, V. A.; Druyan, I. S.; Varshal, B. G.

TITLE: Investigation of the processes occuring during heating polymers by the method of thermal analysis of phenol-aldehyde resin.

SOURCE: Plasticheskiye massy*, no. 5, 1964, 15-19

TOPIC TAGS: thermal analysis, thermogram, weight loss curve, thermal effect, polymer, thermal oxidation, thermooxidative destruction, phenol formaldehyde resin, Novolac 113, Bakelite, Resol 300, Resol 214, Resol 211, Resol 236, linear polymer, combustion, aniline phenol formaldehyde resin

ABSTRACT: The thermo-oxidative destruction of phenol-formaldehyde resins (novolac 113, pulverized Bakelite, resol 300, resol 214, resol 211, resol 236) was investigated. Thermograms and weight loss curves were drawn and a detailed discussion is given of the thermal effects observed. A linear polymer, such as novolac without a hardener, burns completely, but with hexamethylenediamine the weight loss is slower and combustion is not complete. Resol 300 has weight losses similar to hardened novolac, but combustion is slower. The presence of analine or rosin

Card 1/2

ACCESSION NR: AP4012191 S/0191/64/000/002/0039/0043

AUTHORS: Panshin, B. I.; Popov, V. A.; Fedorenko, A. G.; Buyanov, G. I.; Yefimova, V. S.; Gorskiy, K. P.

TITLE: Mechanical properties of foam plastics which determine their efficiency as pressure fillers; 2. Efficiency of foam plastics in constructions during cyclic load operation

SOURCE: Plasticheskiye massy*, no. 2, 1964, 39-43

TOPIC TAGS: pressure filler, mechanical properties, foam plastic, construction, cyclic load, internal friction, fatigue strength, vibration damping, noise control, vibration insulation, glass textolite

ABSTRACT: The vibration proof and internal friction characteristics play an important role in the use of foam plastic in constructions which were subjected to the effect of variable loads. The first group of characteristics is particularly important during use of foam plastic as a pressure filler, for example in three-layered panels and films. The characteristics of the second group determine the fatigue strength during damping of vibration of construction elements.

Card 1/2

ACCESSION NR: AP4012191

Good damping properties are also needed to provide noise control and vibration insulation for apparatus and conveying devices where accuracy and comfort are important factors. It was established experimentally that the heat aging factor of foam plastic affects the vibrational stability of three-layered panels (with glass textolite facings) at increased temperatures (up to 300C). It is not the fatigue of foam plastic which is limiting at high temperatures during cyclic deformation but the change of its stability due to thermal destruction. In comparing amounts of logarithmic decrement of oscillation of foam plastic of various brands, the effect of the chemical nature of the original polymers was established. Formulas are given and experimental data is obtained for coefficients of mechanical losses of panels of a different construction with foam plastic filler. Comparison between foam plastics and vibration absorption materials of the "isol" type showed the competitive nature of foam plastic with respect to weight and damping properties. Orig. art. has: 5 Figures, 7 Equations.

ASSOCIATION: None

Card 2/2

POPOV, V.A.; BRUTAN, I.S.; LIPATOV, Yu.S.

Thermomechanical properties of phenol-rubber compositions in monolithic and foamed states. Plast. masey. no.9:30-35 '65. (MIRA 18:9)

ACC NR: AP6029100

coupling affects the position and width of the corresponding absorption band. In the present paper the author calculates the temperature dependence of the activation energy of an orbiton (the energy of a localized orbiton) in a ferromagnetic or antiferromagnetic dielectric at temperatures far below the Curie or Neel point. The calculations (employing results of the earlier paper) are actually performed for p electrons, but the results are approximately valid also for d electrons. The final result is a formula for the temperature shift of the absorption band. The theoretical shift is of the same order of magnitude as the observed shifts in antiferromagnetic crystals; from this it is concluded that the shifts of the absorption bands may actually be due to spin-orbit exchange interaction. The theoretical shift is proportional to the fourth power of the temperature; this is consistent with the available experimental data on absorption band shifts in CoF_2, but the experimental data are not sufficiently accurate to determine whether the actual temperature dependence of the band shift is of the theoretical form. More accurate experimental determinations of the temperature dependence of the absorption band shifts at low temperatures in ferromagnetic and antiferromagnetic dielectrics would be of interest. The author thanks V. G. Bar'yakhtar for discussing the results and for valuable advice. Orig. art. has: 27 formulas.

SUB CODE: 20 SUBM DATE: 00 ORIG. REF: 008 OTH REF: 004

Card 2/2

L 2268-66 EWT(m)/EPF(c)/EWP(j)/T/ETC(m) WW/RM

ACCESSION NR: AP5022226 UR/0191/65/000/009/0030/0035
678.762.2-134.532:678.632.01:536.495

AUTHOR: Popov, V. A.; Druyan, I. S.; Lipatov, Yu. S.

TITLE: Thermomechanical properties of phenol-rubber compositions in the massive and foamed state

SOURCE: Plasticheskiye massy, no. 9, 1965, 30-35

TOPIC TAGS: thermomechanical property, foam plastic, thermosetting material, phenolformaldehyde, resin, nitrile rubber

ABSTRACT: Phenol-rubber compositions are used to prepare heat-stable foam plastics. In order to make a close study of the starting compositions and finished foam materials under various heating conditions, the authors used customary methods of evaluating the quality of thermosetting resins and thermomechanical methods of studying polymers. The curing rate and degree of curing of the phenol-rubber compositions are investigated. It is found that thermomechanical studies of such compositions can be used to justify and refine the experimentally determined parameters of their processing into foam plastics. Thermomechanical curves of various foam plastics show that all are in a vitreous state up to 120-130C, and that on further heating the properties change as a

Card 1/2

L 2268-66
ACCESSION NR: AP5022226

result of thermooxidative degradation. The experimental data describing the heat stability of the foam plastics by means of the change in their properties as a function of temperature are found to be in complete agreement with the thermomechanical data. The study confirms the usefulness of thermomechanical methods in studies of thermosetting polymer systems of complex composition. Orig. art. has: 9 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MT

NO REF SOV: 019 OTHER: 001

Card 2/2

L 01803-67 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6030605 (AN) SOURCE CODE: UR/0413/66/000/016/0093/0093

INVENTOR: Yeliseyeva, V. I.; Avetisyan, I. S.; Drezel's, S. S.; Zubov, P. I.; Popov, V. A.; Makarov, Yu. A.; Izmaylova, I. S.; Orlova, K. G.; Gerasimova, A. S.; Gordonov, M. D.; Il'chenko, G. I.; Shreyner, S. A.

ORG: none

TITLE: Method of obtaining alkyl acrylate copolymers. Class 39, No. 185057

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16, 1966, 93

TOPIC TAGS: copolymer, copolymerization, monomer, alkyl acrylate

ABSTRACT: An Author Certificate has been issued for a method of obtaining alkyl acrylate copolymers with a vinyl acetate by emulsion copolymerization of the proper monomers in the water phase in the presence of an anion emulsifier. To obtain stable dispersions, 1—5 mol % unsaturated carboxylic acid, such as methacrylic acid, is introduced into the initial monomer mixture. [Translation] [NT]

SUB CODE: 07/ SUBM DATE: 16Jan65/

UDC: 678.744.32-139

Card 1/1

L 07108-67 EWT(1) IJP(c)

ACC NR: AP6029100 SOURCE CODE: UR/0048/66/030/006/0927/0932 46 45 B

AUTHOR: Popov, V.A.

ORG: Physicotechnical Institute of Low Temperatures, Academy of Sciences, UkrSSR (Fiziko-tekhnicheskiy institut nizkikh temperatur Akademii nauk UkrSSR)

TITLE: Contribution to the theory of optical spectra of magnetically ordered dielectrics /Report, All-Union Conference on the Physics of Ferro- and Antiferromagnetism held 2-7 July in Sverdlovsk/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 6, 1966, 927-932

TOPIC TAGS: antiferromagnetism, ferromagnetism, dielectric crystal, light absorption, absorption band, theoretic physics

ABSTRACT: Results and methods presented in an earlier paper of the author (Fiz. tverdogo tela, 8, 467 (1966)) are employed to discuss the effect of magnetic order on the absorption spectra of crystals. Of particular interest is the 3d absorption band of antiferromagnetic crystals of transition elements. In the tightly bound electron approximation with intra-atomic spin-orbit coupling neglected the lowest energy excitations are associated with disturbance of the spin density distribution (magnons). There are also higher energy excitations associated with disturbance of the charge density distribution but with conservation of the orbital angular momentum quantum number (orbitons). Interaction between magnons and orbitons due to spin-orbit

Card 1/2

L 06979-67 EWT(m) JR
ACC NR: AP6018354 (N) SOURCE CODE: UR/0089/66/020/005/0424/0424

AUTHOR: Kazanskiy, Yu. A.; Kukhtevich, V. I.; Popov, V. I.; Tarasov, V. V.; Shemetenko, B. P.

ORG: none

41
B

TITLE: Dependence of the buildup factor on the location of the detector behind the shield

SOURCE: Atomnaya energiya, v. 20, no. 5, 1966, 424

TOPIC TAGS: reactor shielding, gamma scattering, gamma detection, scintillation detector

ABSTRACT: This is an abstract of article No. 76/3559, submitted to the editor and filed, but not published in full. Inasmuch as earlier investigations of the buildup factors, with the aid of which account is taken of the scattered gamma radiation, were made for observation points situated either inside or on the surface of the shield, the authors measured the accumulation factors with a radioactive source of gamma radiation (Cs^{137}) at different positions of the detector and the source behind an aluminum barrier of thickness equal to 2.8 mean free paths and of diameter

Card 1/2 UDC: 539.122:539.121.72

L 06979-67

ACC NR: AP6018354

40 cm. The measurements were made with a scintillation detector (stilbene crystal). The distance from the source to the shield surface facing the detector ranged from 18 to 150 cm. For each value of this distance, the distance from the surface of the shield to the detector was varied from 0 to 500 cm. The results show that the decrease of the accumulation factor with increasing distance R has the form $(1/\sin\theta)\exp(-k_T\theta)$ for a point-like isotropic source on the surface of the shield, and the form $\exp(-k_p\theta)$ for a plane parallel beam. The test results were compared with values calculated in accordance with a semiempirical procedure described by the authors earlier (Byulleten' Informatsionnogo tsentra po yadernym dannym [Bull. of Information Center on Nuclear Data] no. 2, Atomizdat, 1965, p. 305. Orig. art. has: 1 figure.

SUB CODE: 18 SUBM DATE: 30Dec65/ ORIG REF: 002 OTH REF: 002

Card 2/2

ACC NR: AT6036561 SOURCE CODE: UR/0000/66/000/000/0169/0170

AUTHOR: Zharov, S. G.; Kuzminov, A. P.; Kas'yan, I. I.; Maksimov, D. G.; Onishchenko, V. F.; Popov, V. A.

ORG: none

TITLE: The problem of investigating pilot work capacity during long sojourns in spaceship mockups [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 169-170

TOPIC TAGS: isolation test, human physiology, hypodynamia, respiratory system, space physiology

ABSTRACT: On prolonged spaceflights, cosmonaut work activity will take place during the exposure of the organism to a whole group of unusual factors (weightlessness, prolonged isolation, hypodynamia, altered gas medium, and so forth). Study of the effect on man of these factors is of great practical importance.

The purpose of the present investigation is to study the condition and work capacity of man during a prolonged sojourn in a spaceship mockup.

Card 1/3

For this purpose, four 3-day experiments and one 12-day experiment were conducted (the latter was a control experiment without special countermeasures against hypodynamia). The volunteer subjects wore ventilated suits. They remained seated in a space cabin couch throughout the whole time of the experiment. The couch was fully isolated from the external environment. The work activity of the subjects was carried out according to a schedule approximating spaceflight conditions. At scheduled times they performed test tasks in the operation of a manual attitude control system, information transmission, correction tests, and so forth. During the experiment complex recordings were made of physiological functions (EEG, EKG, PG, EMG, and galvanic skin response).

Analysis of the experimental data showed that during a three-day stay in a spaceship mockup, the general condition of the subjects was practically unchanged. The investigated physiological indices remained within normal limits. The work activity of the subjects dropped off a bit in the first day, but returned to initial levels on the second and third days of the experiment.

In the 12-day experiment, the tendency toward lowered work capacity

ACC NR: AT6036561

was more pronounced. Thus, on the first, fifth, seventh, and eleventh days, a one and one-half to two-fold decrease in the accuracy of ship attitude control from angular coordinates was recorded. The time required for information transmission increased toward the end of the experiment by an average of 10%. In the correction tests, the information capacity of the visual analyzer dropped from 1.7 to 1.3—1.5 bits/sec. The red and blue light contrast sensitivity of the eyes decreased 35% and 40%, respectively, from L. N. Meyer's data.

Numerous changes in physiological indices were also noted toward the end of the experiment. Thus, for example the EEG's showed a stagnant exaltation of alpha rhythms. Tests with sudden random signals requiring a response reaction from the subject showed a decrease in electromyogram amplitude from 300—200μv and a galvanic skin response amplitude decrease from 650—480μv.

The observed functional shifts in the state of the subject during a 12-day stay in a spaceship mockup indicate that further study of pilot work capacity under analogous conditions is necessary, as is an effort to find optimal work-rest schedules for cosmonauts on prolonged spaceflights. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 3/3

L 24077-66 EWT(l)/EWP(m)/EWT(m)/EWA(d)/T/EWA(h)/EWA(l) JKT/WW/JW/JWD/WE/JT

ACC NR: AP6011966 SOURCE CODE: UR/0281/65/000/002/0158/0159

AUTHOR: Alad'yev, I. T.; Aleksandrov, B. K.; Baun, V. A.; Golovina, Ye. S.; Gol'denberg, S. A.; Zhimerin, D. G.; Zakharin, A. G.; Ivovlev, V. N.; Knorre, V. G.; Kozlov, G. I.; Leont'yeva, Z. I.; Markovich, I. M.; Meyerovich, E. A.; Nikhnovich, G.V.; Popkov, V. I.; Popov, V. A.; Prodvoditelev, A. S.; Pyatnitskiy, L. N.; Styrikovich, M. A.; Tolstoy, Yu. G.; Tsukhanova, O. A.; Chukhanov, Z. F.; Sheyndlin, A. Ye.

ORG: none

TITLE: Lev Nikolayevich Khitrin

SOURCE: AN SSSR. Izvestiya. Energetika i transport, no. 2, 1965, 158-159

TOPIC TAGS: academic personnel, physics personnel, combustion, carbon, high temperature research, plasma beam, fuel

ABSTRACT: Professor L. N. Khitrin, Corresponding Member, Academy of Sciences USSR, State Price Laureate, and Doctor of Engineering Sciences, died after a short but severe illness at the age of 58. He was well known here and abroad as an outstanding scientist and specialist in the field of combustion theory and the development of methods for speeding up burning of fuel. He began his scientific work at the All-Union Heat Engineering Institute after graduating from the physics department of Moscow University in 1930. His early work was on the propagation of flames in gases, and on heterogenous combustion. In 1948 he defended his Doctor's Dissertation on the theory of combustion of car-

Card 1/2 UDC: 621.036:92

L 24077-66

ACC NR: AP6014966

bon. His monograph "Combustion of Carbon" was awarded the State Prize in 1950. In 1951 he became the permanent director of the laboratory for the intensification of combustion processes of the G. M. Krzhizhanovskiy Power Institute. He was elected a corresponding member of the Academy of Sciences USSR in 1953. He headed the All Union Advisory Board on combustion, represented Soviet science at International Symposia, and was a member of the International Institute of combustion. For a number of years, he directed the Moscow general seminar on combustion, and took an active part in the work of the Scientific Council of the Academy of Sciences USSR, on high temperature heat physics, and of the scientific council on the comprehensive utilization of fuel. He devoted a large amount of attention to teaching work. He directed the Combustion Division of the Physics Department of Moscow State University. His monograph "Physics of Combustion and Explosion" (1957) is a basic text for students in this field. Three Doctor's Dissertations and fifteen Candidate Dissertations were defended under his direction. In the last years of his life he directed work on methods for comprehensive utilization of fuel at power stations so as to obtain valuable products from the mineral part of the fuel, as well as work on the physical chemical processes in a plasma stream, and the mechanism of interaction between carbon and gases. He was the author of more than 60 scientific works, for which he was awarded the Order of the Red Banner of Labor and medals. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 21, 20 / SUBM DATE: none

Card 2/2

POPOV, Vasiliy Alekseyevich; ASTREIN, Avenir Arkad'yevich; UZDIN, David Konstantinovich; GURVICH, Natan Borisovich; SOKOLOV, V.G., red.; OTOCHEVA, M.A., red. izd-va; LELYUKHIN, A.A., tekhn. red.

[Operation, maintenance and repair of trolley bus rolling stock] Ekspluatatsiia i remont podvizhnogo sostava trolleibusa. Pod obshchei red. V.A.Popova. Moskva, Izd-vo M-va kommun.khoz. RSFSR, 1961. 471 p. (MIRA 15:3)

(Trolley buses)

GANKIN, N.B. (Leningrad); POPOV, V.A., inzh. (Leningrad)

High-speed train traffic on the Oktiabr' Railroad. Zhel. dor. transp. 45 no.6:69-73 Je '63. (MIRA 16:7)

1. Nachal'nik tekhnicheskogo otdela Oktyabr'skoy dorogi (for Gankin).

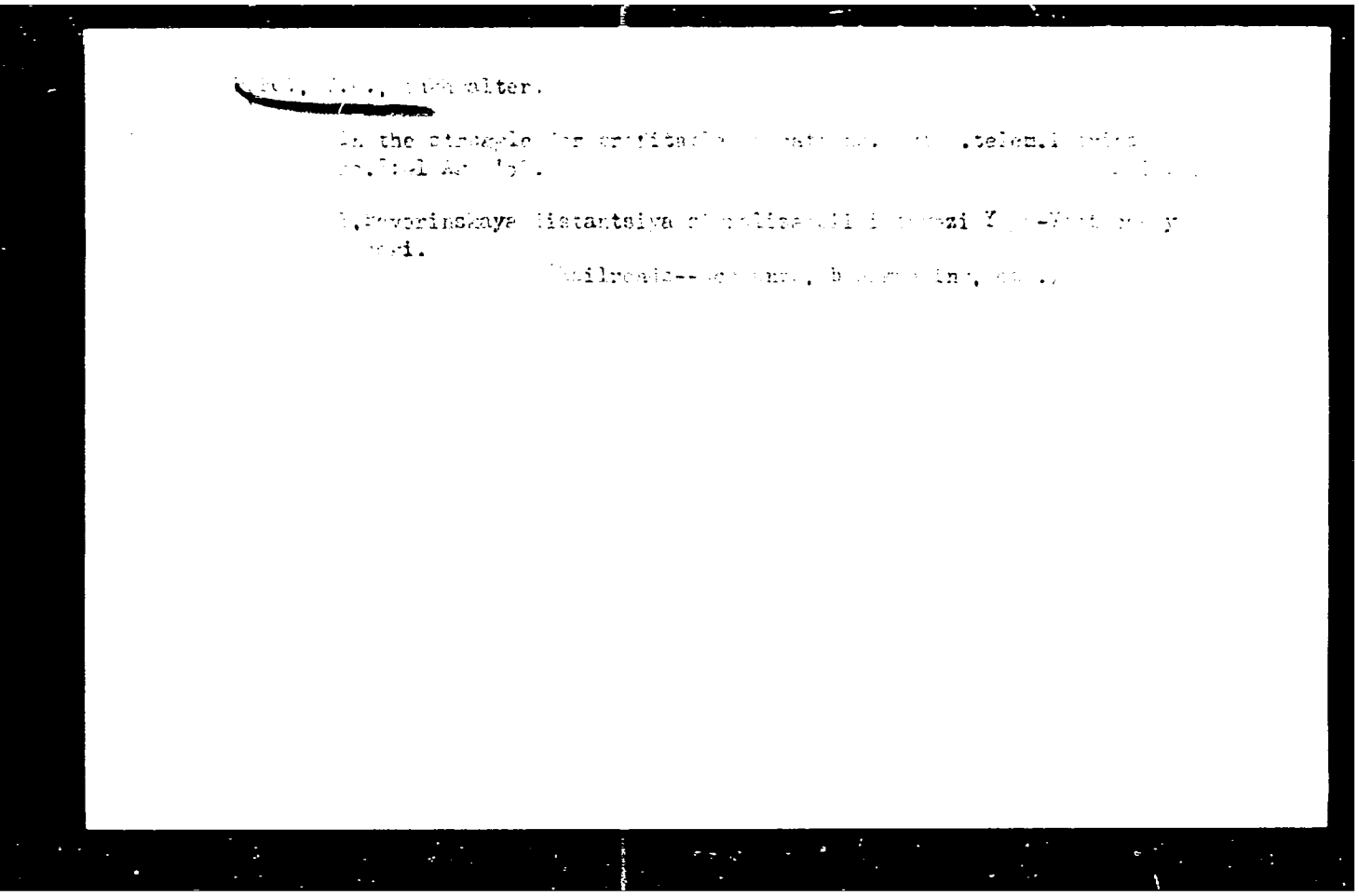
(Railroads--Train speed)

PoPoV, V.A.

KNEREL', G.M.; LERNER, Ya.N.; POZDEYEV, V.I.; POPOV, V.A.; REZNIK, M.Ya.; REYFER, Ya.A.; SKACHKOV, A.I.; STEPANOV, M.N.; KHAL'TUNEN, V.V.; KHRAPOVA, Ye.I.; SHREDER, B.L.; STERTSER, O.N.; AVRUSHCHENKO, B.A., red.; KONYASHINA, A.D., tekhn.red.

[Fifty years of the Leningrad tramway] 50 let leningradskogo tramvaia. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1957. 231 p. (MIRA 11:1)

(Leningrad--Street railways)



SHTEYMBOK, B.I.; POPOV, V.A., red.; ARNOL DOVA, K.S., red. izd-va; BACHURINA, A.M., tekhn.red.

[Lumber industry in the U.S.S.R.; a statistical manual] Lesnaia promyshlennost' SSSR; statisticheskii sbornik. Moskva, Goslesbumizdat, 1957. 294 p. (MIRA 11:3)

1. Russia (1923- U.S.S.R.) Planovo-ekonomicheskoye upravleniye. (Lumbering--Statistics) (Lumber trade--Statistics)

POPOV, V.A., kand. tekhn. nauk.

Technological requirements for the automation and specialization of hardware manufacture. Stal' 17 no.12:1128-1130 D '57. (MIRA 11:1)

1. Nauchno-issledovatel'skiy institut avtopromyshlennosti.
(Hardware)

AUTHOR: Popov, V.A., Candidate of Technical Sciences. 133-12-21/26

TITLE: Technological Requirements for Automation and Specialization of the Industrial-hardware Production (Tekhnologicheskiye trebovaniya k avtomatizatsii i spetsializatsii metiznogo proizvodstva)

PERIODICAL: Stal', 1957, No.12, pp. 1128-1130 (USSR)

ABSTRACT: The directions in the development of the wire-drawing and related industries are discussed. It is pointed out that the industry should proceed towards the formation of specialized works with the wide incorporation of automation of production. Some changes in standard specifications, facilitating mass production should be introduced.

ASSOCIATION: Niitavtoprom

AVAILABLE: Library of Congress

Card 1/1

POPOV, V.A., assistent; SOLOPOVA, K.Ye., assistent; YUSHKOV, P., kand.fiz.-matem.nauk, prof.

Determining natural frequencies of a shaft with a disk. Izv.vys. ucheb.zav.; mashinostr. no.6:71-77 '62. (MIRA 15:11)

1. Leningradskiy tekhnologicheskiy institut kholodil'noy promyshlennosti.

(Shafting--Vibration)

POPOV, V.A.

Transistor modulator with a single-polarity control. Priborostroenie no.3:10-11 Mr '61. (MIRA 14:3)
(Modulation(Electronics))

POPOV, V.A.

Courses in standardization. Standartizatsiia 28 no.
53-54 Mr'64. (MIRA 17:5)

POPOV, V.A.

Technical information. Standartizatsiia 27 no.3:47-48 Mr '63.
(MIRA 16:4)
(Technology--Information services)

POPOV, V.A.

"Awakened" innovations. Izobr. i rats. no.8:22 Ag '62.
(MIRA 15:9)

1. Zamestitel' predsedatelya Komiteta po delam izobreteniy i otkrytiy pri Sovete Ministrov SSSR.
(Technological innovations)

GRAMASHEV, A.F.; GRITCHENKO, V.A.; IOYRYSH, A.I.; POPOV, V.A.; STEPANOV, V.N.; BLOKHIN, N.N., red.; ANDREYEVA, L.S., tekhn. red.

[Invention and efficiency promotion in the U.S.S.R.] Izobretatel'stvo i ratsionalizatsiia v SSSR. Moskva, Izd-vo VTsSPS Profizdat, 1962. 335 p. (MIRA 15:5)
(Technological innovations)

LOBOVIKOV, Timofey Sereeyevich; POPOV, V.A., red.; VALIAKH, T.G., red. izd-va; SHITS, V.P., tekhn. red.

[Economics of the lumbering industry in the U.S.S.R.] Ekonomika lesozagotovitel'noi promyshlennosti SSSR; ocherk. Moskva, Goslesbumizdat, 1958. 157 p. (MIRA 11:9)
(Lumbering)

CHERNOUDOV, Nikolay Nikolayevich; SUKHANOVSKIY, Aleksey Il'ich; GRIGOR'YEV, P.I., retsenzent; POPOV, V.A., red.; GORYUNOVA, L.K., red.izd-va; BRATISHKO, L.V., tekhn.red.

[Planning the unit cost in logging, floating, and timber transshipment] Planirovanie sebestoimosti produktsii lesoeksploatatsii i stoimosti splavnykh i lesoperevalochnykh rabot. Moskva, Goslesbumizdat, 1959. 260 p. (MIRA 13:11)
(Lumbering--Costs)

RODMAN, Zalaman Leybovich; POPOV, V.A., inzh., retsenzent; FAL'KO, O.S., inzh., red.; SMIRNOVA, G.V., tekhn.red.

[Flexible shafts for automobiles and motorcycles] Avtomobil'nye i mototsikletnye gibkie valy. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 75 p. (MIRA 14:4)
(Motor vehicles--Transmission devices)

POPOV, V.A.

Necrolytic treatments in deep burns. Voen.-med. zhur. no.3: 73-74 '65. (MIRA 18:11)

USHAKOV, V.B., doktor tekhn. nauk; PETROV, G.M., kand. tekhn. nauk; BASOV, Ye.P.; POPOV, V.A.; LAKUNIN, N.B.; MOSKALENKO, G.V.; SABAYEV, G.N.; ABIZOVA, T.V., inzh., red.

[The MN-14 nonlinear electronic analog computer] Elektronnaia nelineinaia analogovaia vychislitel'naia mashina. MN-14. Moskva, Mashinostroenie, 1965. 232 p. (MIRA 18:5)

1. Nauchno-issledovatel'skiy institut schetnogo mashinostroyeniya (for Ushakov, Petrov).

L 28958-66 EWT(m)/T WE

ACC NR: AP6019085 SOURCE CODE: UR/0152/65/000/007/0059/0061

AUTHOR: Bikkulov, A. Z.; Groshev, B. M.; Popov, V. A.

ORG: Ufa Petroleum Institute (Ufimskiy neftyanoy institut)

TITLE: Selective solvents for middle petroleum distillates

SOURCE: IVUZ. Neft' i gaz, no. 7, 1965, 59-61

TOPIC TAGS: fractional distillation, petroleum refining, nitromethane, solvent extraction

ABSTRACT: Fifteen compounds were studied as possible selective solvents for extractive separation of middle distillates. It was shown that the most suitable selective solvents for middle distillates include dimethylformamide and furfurol, exhibiting at operating temperatures quite high dissolving and selective capacity. They can also be regenerated fairly easily. Sulfolan, propylene carbonate, and ethylene carbonate can be used in the extraction of the middle distillates. However, in view of the high boiling points, these solvents require special regeneration methods. Use of nitromethane and acetonitrile with sufficient temperature coefficients and satisfactory dissolving and selective capacity, can be used to prevent boiling of solvents at elevated pressures in the extraction equipment. Orig. art. has: 2 figures and 1 table. [JPRS]

SUB CODE: 11, 07 / SUBM DATE: 01Aug64 / ORIG REF: 007

Card 1/1 BLG

POPOV, V.A.; KUPERMAN, M.Ye.; KRASIL'NIKOVA, Z.V.

Application of electron microscopy for the study of phenol-rubber compounds and of the starting components. Plast.massy no.7:33-36 '64. (MIRA 17:10)

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15.8170

S/661/61/000/006/071/081
D247/D302

AUTHORS: Borodin, M. Ya., Kazakov, Z. I., Koroleva, A. P. and Popov, V. A.

TITLE: Foam plastics based on silico-organic resins and their combination with organic polymers

SOURCE: Khimiya i prakticheskoye primeneniye kremneorganicheskikh soyedineniy; trudy konferentsii, no. 6: Doklady, diskussii, resheniye. II Vses. konfer. po khimii i prakt. prim. kremneorg. soyed., Len. 1958. Leningrad, Izd-vo AN SSSR, 1961, 304-306

TEXT: Two types of silico-organic resins were investigated: Resins for layer foams and resins from acetoxysilanes. The coefficient of contraction, mechanical durability and dielectric properties were considered. Some of the uses of the layer foams were mentioned. Aluminum powder as a filler was assessed (thermostability being obtained up to 400°C). In the discussion the minimum weight by volume and the water capacity for the silico-layer foams were given.

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SHEKLEIN, A.V.; POPOV, V.A.

Use of a xenone flashlamp as base of ultraviolet ray source in quantitative flame spectrum analysis with photographic spectrum recording. Zhur. nauch. i prikl. fot. i kin. 9 no.3:192-197 My-Je '64. (MIRA 18:11)

1. Energeticheskiy institut imeni Krzhizhanovskogo. Submitted June 28, 1963.

ALAD'YEV, I.T.; ALEKSANDROV, B.K.; BAUM, V.A.; GOLOVINA, Ye.S.; GOL'DENBERG, S.A.; ZHIMERIN, D.G.; ZAKHARIN, A.G.; IYEVLEV, V.N.; KHORRE, V.G.; KOZLOV, G.I.; LEONT'YEVA, Z.I.; MARKOVICH, I.M.; MEYEROVICH, E.A.; MIKHNEVICH, G.V.; POPKOV, Z.I.; POPOV, V.A.; PREDVODITELEV, A.S.; PYATNITSKIY, L.N.; STYRIKOVICH, M.A.; TOLSTOV, Yu.G.; TSUKHANOVA, O.A.; CHUKHANOV, Z.F.; SHEYNDLIN, A.Ye.

Lev Nikolaevich Khitrin, 1907-1965; obituary. Izv. AN SSSR. Energ. i transp. no.2:159-160 Mr-Ap '65. (MIRA 18:6)

BEZUGLYY, P.A.; YEREMENKO, V.V.; KUKUSHKIN, L.S.; KULIK, I.O.; MANZHELIY, V.G.; PERESADA, V.I.; PESCHANSKIY, V.G.; POPOV, V.A.; SHISHKIN, L.A.

Conference on the physics of the condensed state. Usp. fiz. nauk 88 no.2:387-393 F '66. (MIRA 19:2)

1. Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR.

POPOV, V.A.; GOLUBEV, T.I.

Use of proteolytin for the preparation of granulating wounds for plastic surgery. Vest. khir. no.10:125-126 '64.

(MIRA 19:1)

1. Iz 2-y khirurgicheskoy kliniki usovershenstvovaniya vrachey (nachal'nik - prof. I.D. Zhitnyuk) i kafedry termicheskikh porazheniy (nachal'nik - prof. T.Ya. Ar'yev) Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.

LUNEVA, Z.S., kand. sel'khoz. nauk; SUDAKOVA, Ye.A., ml. nauchn. sotr.; POPOV, V.A., st. nauchn. sotr.

[Growing ornamental tree and shrub seedings; for town landscaping in the central zone of the European Part of the R.S.F.S.R.] Vyrashchivanie sazhentsev dekorativnykh derev'ev i kustarnikov; dlia ozeleneniia gorodov srednei polosy Evropeiskoi chasti RSFSR. Moskva, Stroiizdat, 1965. 170 p. (MIRA 18:8)

1. Sektor ozeleneniya gorodov Akademii kommunal'nogo khozyaystva im. K.D.Pamfilova (for Luneva, Sudakova).

POPOV, V.A., kand. tekhn. nauk; MISOZHNIKOV, V.M., kand. tekhn. nauk, retsenzent; MAVROTSKIY, G.A., kand. tekhn. nauk, retsenzent; GUMENYUK, Ye.A., inzh., red.

[Equipment for automated cold upsetting processes] Osnastka avtomatizirovannogo kholodnovysadochnogo proizvodstva. Moskva, Mashinostroenie, 1965. 174 p. (MIRA 18:8)

ACC NR: AP6033262 SOURCE CODE: UR/0109/66/011/010/1878/1879

AUTHOR: Popov, V. A.

ORG: none

TITLE: Kinetic theory of reflection of electromagnetic waves by plasma

SOURCE: Radiotekhnika i elektronika, v. 11, no. 10, 1966, 1878-1879

TOPIC TAGS: plasma, electromagnetic wave

ABSTRACT: Formulas are developed for the plasma impedance and the surface charge at plasma boundary, for the case of diffuse electron reflection and p-polarization of incident electromagnetic wave. The plasma impedance is: $Z = E_y(0)/H_x(0) = (1-R)\left/\left[R\left(\frac{c}{\omega}I + is_+\right) + \left(\frac{c}{\omega}I - is_-\right)\right]\right.$ where $R = \frac{1}{s_+^2}\frac{X_t^+(+i|k_\perp|)}{X_t^-(-i|k_\perp|)}\frac{X_t^-(-i|k_\perp|)}{X_t^+(+i|k_\perp|)}$; $s_\pm = \frac{c}{\omega}(|k_\perp|) \pm \alpha$. With $v_T \to 0$, the longitudinal waves

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ACC NR: AP6033262

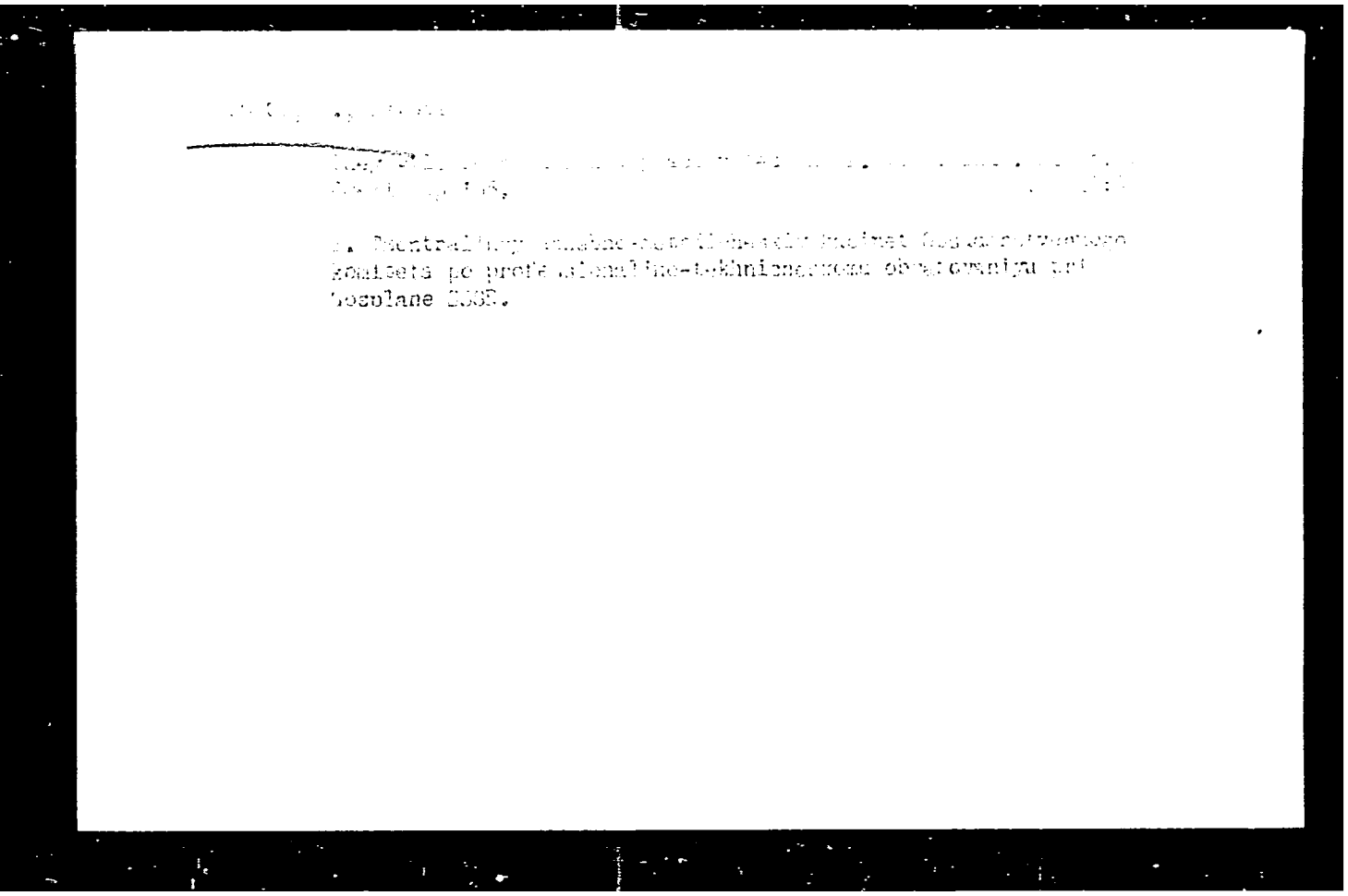
make the most substantial contribution to the plasma impedance and to the ratio of field normal components. The plasma impedance, in this case, does not differ from that in the case of specular reflection. "In conclusion, the author wishes to thank V. I. Kurilko for his attention to this work." Orig. art. has: 13 formulas.

SUB CODE: 20 / SUBM DATE: 25Oct65 / ORIG REF: 004

Card 2/2

POPOV, V. (Karaganda)

Mining machine operators and anticipatory planning. Prof.-tekh.obr. 22 no.5:8-9 My '65. (MIRA 18:5)



DULIN, I.L.; BOGDANOV, N.I., KICHAYEVA, G.K.; KOKOV, V., red.

[Long term planning of timber for coal mines; perspektivnoe planirovanie lesomaterialov na ugol'nykh shakhtakh. Syktyvkar, Komi knizhnoe izd-vo, 1964. 47 p. (MIRA 18:6)

POPOV, V., inzh.

New production-line techniques for the manufacture of parts for large-panel housing construction. Bud. mat. i konstr. 4 no.2: 14-18 Mr-Ap '62. (MIRA 15:9)
(Lightweight concrete) (Walls)

POPOV, V. (Bukharest); KHALANAY, A. [Halanay, A.] (Bukharest)

Concerning the stability of nonlinear automatic control systems with lag argument. Avtom. i telem. 23 no.7:849-851 Jl '62. (MIRA 15:9)

(Automatic control)

POPOV, V.

Accurate definitions and clearness are the most important factors. Avt.transp. 40 no.9:47-48 S '62. (MIRA 15:9)

1. Gosudarstvennyy avtomobil'nyy inspektor kvalifikatsionnoy komissii Moskovskogo gorodskogo ispolnitel'nogo komiteta Moskovskogo gorodskogo soveta deputatov trudyashchikhsya. (Traffic regulations)

POPOV, V., kand.ekonom.nauk

Main economic task of the party and the people. Nauka i zhyttia 11 no.2:7-10 F '62. (MIRA 15:3)
(Russia--Economic policy)

FOFCV, Viktor, inz.; SKALA, Karel, dr.

The heavy-liquid dressing of magnesite in Kosice plant. Rudy 10 no. 4: 111-115. Ap '62

1. Ustav pro vyzkum rud, Praha.