Plastic deformation and ...

carried out at sliding rates of 0.005-9 m/sec under normal loads of 10 - 55 kg/cm^2 in air, argon, oxygen, oil, water, dilute sulphuric, nitric and hydrochloric acids, and in alcohol. The main work was carried out on Armco iron; some tests were made on the formation of brass by diffusion between zinc and copper plates in contact. Rates of diffusion and of chemical reactions were found to rise sharply on plastic deformation due to formation of crystal defects. Metal surfaces became saturated with oxygen from air and with carbon from lubricants. "White" surface layers which could not be etched away were formed. Below these layers there were strongly deformed regions which were very easy to etch. Plastic deformation intensified formation of brass between zinc and copper, aided formation of pearlite in Armco iron due to diffusion of carbon from lubricants, and increased penetration of S^{35} into Armco iron. The results were used to develop mechano-chemical methods of cementation of iron and steel in liquids and hardening of iron and steel surfaces using saturation with oxygen in liquids. [Abstractor's note: These treatments are not described.] There are 10

Card 2/3

33713

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D207/D303

Plastic deformation and ...

figures and 9 Soviet-bloc references.

ASSOCIATION: Kiyevskiy institut grazhdanskogo vozdushnogo flota (Kiyev Civil Air Fleet Institute)

Card 3/3

SMELOV, N.S.; YEGOROV, G.I.; KOKOLIN, A.I.; KSANFOPULO, P.I.; RAKHMANOVA, N.V.; KRYLOVA, Ye.Ye.; RYKOVA, L.K.; PER, M.I.; PETRUSHEVSKIY, S.I.; PUSTOVAYA, A.I.; TUNGSKOVA, A.I.; VELICHKO, Ye.V.; PLAVIT, P.Ya.; GOL'DENBERG, M.M.

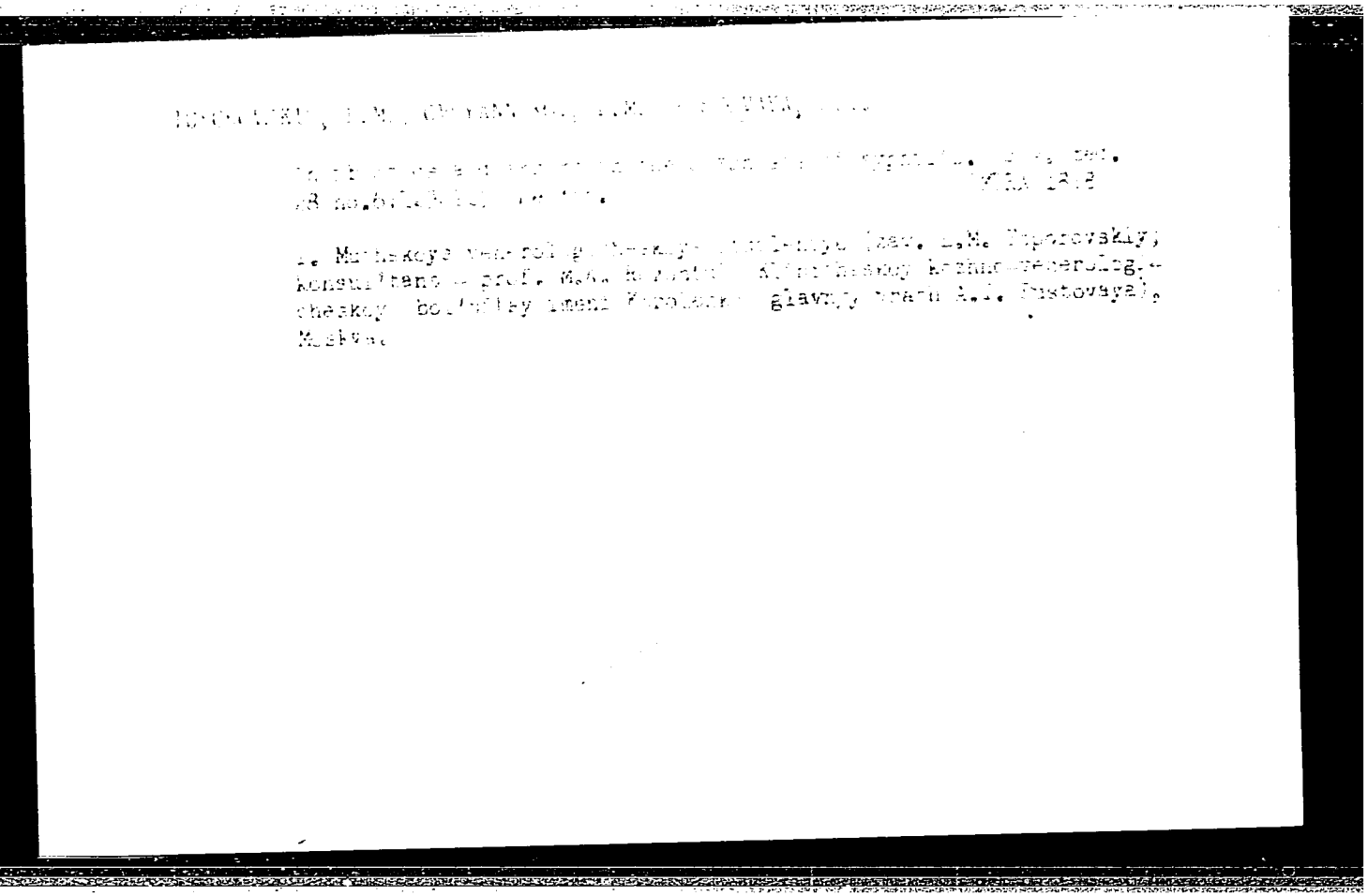
Evaluation of results of the treatment of early syphilis according to 1949 scheme. Vest. vener., Moskva No.1:29-33 Jan-Feb 52. (CIML 21:4)

1. Professor for Smelov and Per. 2. Central Skin-Venerelogical Institute (Director--N.M. Turanov) for Smelov, Yegorov, Sokolin, Ksanfopulo, Rakhmanova, Krylova and Rykov; Hospital imeni Korolenko (Head Physician Docent V.P. Volkov) for Per, Petrushevskiy; First Venereological Dispensary (Head Physician--K.A. Vinogradova) for Pustovaya and Tunguskova); Second Venereological Dispensary (Head Physician--V.G. Bronshteyn) for Velichko, Plavit and Gol'denberg.

TOPOROVSKIY, L.M.; OVSYANNIKOV, L.M.; PUSTOVAYA, A.I.

Late diagnosis of infective forms of syphilis and its causes.
Vest. derm. i ven. no.5:75-78 '65.
(MIRA 18:11)

1. Muzhskoye venerologicheskoye otdeleniye (zav. - L.M. Toporovskiy; konsul'tant - prof. M.A.Rozentul) klinicheskoy kozhno-venerologicheskoy bol'nitsy imeni V.G.Korolenko (glavnyy vrach A.I.Pustovaya), Moskva. Submitted March 28, 1964.



VASYUNINA, N.[illegible], [illegible], A.A.; [illegible]MA[illegible]V, Y[illegible]; [illegible], [illegible]

Quant[illegible]ative determining of polyatom[illegible] alcohols in their mixtures. Gidroliz. i l[illegible]okhim.prom. 15 no.[illegible] [illegible]62. (MIRA [illegible])

1. Institut organicheskoy kh[illegible] AN SSSR (for Vasyunina, Balandin, Mam[illegible]). 2. [illegible]sudarstvennyy nauchno-issledovatel'skiy institut gidroliznoy i sul'fitno-spirtovoy promyshlennosti (for [illegible]stovaya).

3

L 41913-65 EWT(l)/EEC(m)/EWT(m)/EWG(v)/FCC/EEC-4/EEC(t)/T/EWA(h) Po-4/Pe-5/
Pa-4/Pae-2/Peb/Pi-4 IJP(c) GW
ACCESSION NR: AP5009640 UR/0293/65/003/002/0237/0243

AUTHOR: Babichenko, S. I.; Karpinskiy, I. P.; Kaplan, S. A.; Katyushina, V. V.; Krylov, L. N.; Kurt, V. G.; Pustovayt, R. M.; Shifrin, A. V.

TITLE: Investigation of scattered ultraviolet radiation in the upper atmosphere. 1. Equipment

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 2, 1965, 237-243

TOPIC TAGS: UV radiation, radiation counter, photon counter, Geiger counter/SFM-1 radiation counter

ABSTRACT: Photon counters used in investigations of scattered UV radiation in the upper atmosphere are described. The two counters, of the SFM-1-type, are filled with NO and have LiF radiation windows for measurements within 1050—1340 Å. The counters were selected for their narrow sensitivity band and comparatively high quantum yield (0.01—0.1). Pulses from a counter are recorded by a two-channel logarithmic rate meter within the interval from 2 to 2 x 10^3 pps. However, slot width and brightness were selected so that the counting rate does not exceed 1000 pps, which keeps it within the linear portion of the counting characteristic.

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L 41818-65
ACCESSION NR: AP5009640

The operating voltage of the counters is 1000 v. The counter circuitry includes a preamplifier, trigger, pulse normalizer, storage circuit, transistorized d-c amplifier, supply-voltage regulator, and high-voltage converter for power supply. The modular design of the system provides a high degree of miniaturization and reliability. Orig. art. has: 5 figures. [KM]

ASSOCIATION: none

SUBMITTED: 23Jul64 ENCL: 00 SUB CODE: OP, AA

NO REF SOV: 005 OTHER: 002 ATD PRESS: 3235

Card 2/2

PUSTOVIT, A.

"Let Us Study Well and Work Successfully." p.141
(GORSKO STOPANSTVO Vol. 9, no. 3, Mar. 1953 Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, Library of Congress, Vol. 2, No. 9, Oct. 1953, Uncl.

USSR/Weeds and Weed Control N

Abs Jour : Ref Zhur - Biol., No 10, 1958, No 44439

Author : Chernenko Ye.G., Pustovit L.V., Vinnikova T.T., Garayeva A.A.
Inst : Stavropol Agricultural Institute
Title : The Number and Botanical Composition of Weeds Which Choke up the Land Used in Crop Rotation by Brigade No 3, Stalin Kolkhoz in the City of Stavropol'.

Orig Pub : Sb. nauchno-issled. rabot stud. Stavropol'sk. s.-kh. in-t, 1956, vyp. 4, 56-58

Abstract : No abstract

Card : 1/1

KRIVOSHEYEV, Ya.S.; PLATOVIT, V.T.

Safety measures in the manufacture of caustic soda by the mercury electrolysis method. Khim. prom. no. 4:299-301 Ap '64. (MIRA 17:7)

L 1267-66 EED-2/EWT(d)/EWP(1) IJP(c) GG/BB
ACCESSION NR: AR5008451 UR/0271/65/000/002/B007/B007
681.142.2

40
B

SOURCE: Ref. zh. Avtomatika, telemekhanika i vychislitel'naya tekhnika. Svodnyy tom, Abs. 2B41

AUTHOR: Rybak, A. I.; Pustovit, N. I.

TITLE: Conversion of numerical material from a binary-decimal system into a decimal system in the "Ural-1" computer

CITED SOURCE: Sb. Tekhn. kibernetika. Kiyev, Gostekhizdat USSR, 1963, 104-111

TOPIC TAGS: binary decimal binary conversion / Ural-1 computer

TRANSLATION: It is noted that the conversion of numerical material introduced into the internal storage of an "Ural-1" computer from a binary-decimal into a decimal system is usually performed by a special subroutine. The conversion subroutine occupies over 100 cells in the internal storage; the conversion time for one number takes over 100 work cycles. A single-cycle conversion operation into the binary numbers with a fixed point is suggested which uses the method of summation of binary equivalents of one-tenth, one-hundredth, etc. This method permits using the multiplication operation and does not require essential remodeling of computer units (only a unit for controlling the equivalents is built).

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ACCESSION NR: AR5008451

This formula is used for conversion:

$$A_{\text{дв}} = \sum_{r=1}^{m} \ni_{10-r} (a_{r_1} \cdot 2^3 + a_{r_2} \cdot 2^2 + a_{r_3} \cdot 2^1 + a_{r_4} \cdot 2^0),$$

where a_{r_1}, a_{r_2}, a_{r_3} and a_{r_4} are the coefficients taken on 0 and 1 values; m is the number of decimal digits; $\ni_{10-r}$ is the binary equivalent of the unit of r-th decimal order. The conversion algorithm is realized by a specially developed equivalent control unit which controls the arithmetic-unit elements. A principal circuit of the unit and the circuits of individual elements are presented. The unit operation is described; a time diagram is supplied, as is a table of digit distribution $P_r \cdot AY$. Bibl. 3, figs. 4, tab. 1.

SUB CODE: DP ENCL: 00

Card 2/2

PUSTOVIT, V.T.; GRATSIANSKIY, N.N., kand.tekhn.nauk

Studying the polarization of electrodes during the electrolytic forming of Pb-Tl alloys. Met.i gornorud.prom. no.5:70-72 S-O '62. (MIRA 16:1)

(Lead-thallium alloys--Electrometallurgy)
(Polarization (Electricity))

KONONCHUK, T.I.; RED'KO, L.P.; KORCHEV, M.A.; PUSTOVIT, V.I.; BONDARENKO, N.V.

Effect of the addition of polyacrylamide to the brine on the electrolysis process with a mercury cathode. Khim. prom. 41 no.8:599-600 Ag '65. (MIRA 18:9)

PUSTOVIT, Yu.A.

Physicochemical principles of the separation of thiophene in the course of the production of benzene for synthesis by washing with sulfuric acid. Koks i khim. no.10:38-41 '60. (MIRA 13:10)

1. Ukrainskiy uglekhimicheskiy institut.
(Thiophene) (Benzene) (Sulfuric acid)

L 14344-65 EWT(l)/EWA(h) Peb SSD/AFWL/AFETR/ESD(t) GW
ACCESSION NR: AP4041179 S/0049/64/000/006/0839/0846

AUTHORS: Solov'yev, S. L.; Pustovitenko, A. N.

TITLE: Possible reduction of the period of longitudinal waves from deep focus earthquakes

SOURCE: AN SSSR. Izv. Seriya geofizicheskaya, no. 6, 1964, 839-846

TOPIC TAGS: seismic wave, earthquake

ABSTRACT: In view of the lack of detailed investigations of the spectra of the direct P and S volume waves from earthquakes, an attempt was made to determine and compare the spectra of the P waves from earthquakes having different energies and different focal depths. The material employed were the seismic station data of the Kuriles-Kamchatka earthquakes from 1952 through 1962. The analysis was limited to the abscissa of the maximum of the spectrum. To increase the range of earthquakes covered, data obtained with two

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ACCESSION NR: AP4041179

types of seismographs (SVK and VEGIK) were used. The spectra were calculated by the approximate method of F. M. Gol'tsman and A. P. Volin (Vestn. LGU, no. 16, 1956) (sb. Voprosy* dinamicheskoy teorii rasprostraneniya seysmicheskikh voln, no. 2, L., 1959). It is concluded that the period of the P wave has a tendency to decrease with increasing depth of the earthquake, but more definite deductions must await the accumulation of more experimental data. Orig. art. has: 4 figures.

ASSOCIATION: Akademiya nauk SSSR, Sakhalinskiy kompleksny*y nauchno-issledovatel'skiy Institut (Academy of Sciences SSSR, Sakhalin Scientific Research Institute for Comprehensive Studies)

SUBMITTED: 22Jun63 ENCL: 00

SUB CODE: ES NR REF SOV: 004 OTHER: 003

Card 2/2

PUSTOVITH, L.T., inzh.

Seminar on the study of advanced practice in mining. Shakht. stroi. 9 no.7:31-32 Jl '65. (MIRA 18:10)

PUSTOVOY, I.F., kand. veterin. nauk

Prophylaxis of Bunostomum infection in sheep. Veterinariia 41 no.2:60-61 F '64. (MIRA 17:12)

1. Tadzhikskiy nauchno-issledovatel'skiy institut.

PUSTOVOY, I.F., kand. veter. nauk; IL'YASOV, I.N., aspirant

Piperazine hydrochloride against ascariasis in hens. Veterinariia 41 no.7:54-55 Jl '64. (MIRA 18:11)

1. Tadzhikskiy nauchno-issledovatel'skiy veterinarnyy institut.

PUSTOVOY, Ivan Vasil'yevich, dots.; DEVOCHKIN, N., red.

[Fertilizers and crop yields] Udobrenie i urozhai. Volgograd, Nizhne-Volzhskoe knizhnoe izd-vo, 1964. 40 p. (MIRA 18:3)

1. Volgogradskiy sel'skokhozyaystvennyy institut (for Pustovoy).

RADOV, A.S., prof.; PUSTOVOY, I.V., dots.; KOROL'KOV, A.V., dots. ASKINAZI, D.L., prof., retsenzent; ZHEZHEL', N.G., prof., retsenzent; KOREYSHO, Ye.G., red.

[Laboratory manual of agricultural chemistry] Praktikum po agrokhimii. Moskva, Kolos, 1965. 374 p. (MIRA 18:7)

PUSTOVOY, G.T.

NOVIKOV, F.I., assistent; PUSTOVOY, G.T., student V kursa.

Effective method for preparing salep mucilage. Apt.delo 7 no.2:46-48 Mr-Ap '58. (MIRA 11:4)

1. Iz kafedry tekhnologii lekarstv i galenovykh preparatov (zav.-dots. A.S. Prozorovskiy) Moskovskogo farmatsevticheskogo instituta.
(MUCILAGE)

BUKSHAUM, B.I.; PUSTOVOY, I.G.

Decreasing crater length in welding large-diameter straight-seamed pipe. Avtom. svar. 18 no.8:56-57 Ag '65.
(MIRA 18:11)

1. Chelyabinskiy truboprokatnyy zavod. Submitted June 11, 1964.

PUSTOVOY, I.V.

[Study of the therapeutic and prophylactic requirements of workers and employees in an industrial enterprise] Opyt izucheniia potrebnosti rabochikh i sluzhashchikh promyshlennogo predpriiatiia v lechebno-profilakticheskom obsluzhivanii. Moskva, Medgiz, 1959. 81 p. (MIRA 13:8)

(MEDICINE, INDUSTRIAL)

PUSTOVOY, I.V

Name	:	PUSTOVOY, I. V.
Dissertation	:	Studying the necessity for therapeutic and prophylactic services among industrial workers
Degree	:	Cand Med Sci
Defended At	:	Min Health USSR, Central Inst of Advanced Training for Physicians
Publication Date, Place	:	1956, Moscow
Source	:	Knizhnaya Letopis' No 6, 1957

PUSTOVOY, I.V., kand.med.nauk

"Study of the requirements of an urban population for infirmary care" (materials on the Fourth Session of the N.A.Semashko Institute for the Organization of the Public Health System and the History of Medicine, edited by A.B.Shevelev) by F.M.Ilupina, V.D. Dubrovina, L.I.Gribkova. Reviewed by I.V.Pustovoi. Sov.zdrav. 21 no.8:81-82 '62. (MIRA 15:11)

(HOSPITAL CARE) (ILUPINA, F.M.)
(DUBROVINA,V.D.) (GRIBKOVA, L.I.)

PUSTOVOY, I.V. (Moskva)

Determining the requirement of workers for prophylactic services in an industrial enterprise. Sov.zdrav. 17 no.1:21-25 Ja '58. (MIRA 11:2)
(INDUSTRIAL HYGIENE
prev.med. serv. (Rus))

BARKMAN, E.M.; PUSTOVOY, I.V.

Ten-day courses for local organizers of public health. Zdrav. Ros. Feder. 6 no.4:43 Ap '62. (MIRA 15:4)
(PUBLIC HEALTH--STUDY AND TEACHING)

MAKARENKO, G.N.; PUSTOVOY, L.T.; YUPKO, V.L.; RUD', B.M.

Nature of chemical bonds in rare-earth dicarbides. Izv.AN SSSR. Neorg.mat. 1 no.10:1787-1790 O '65.

(MIRA 18:12)

1. Institut problem materialovedeniya AN UkrSSR, Kiyev. Submitted July 5, 1965.

PUSTOVOY, P., inzh.; BURSKIN, M.

Merchant marine on the eve of the second year of the seven-year plan period. Mor.flot 19 no.12:6-8 D '59.
(MIRA 13:3)

1. Ministerstvo morskogo flota (for Pustovoy). 2. Nachal'nik otdela Planovo-ekonomicheskogo upravleniya Ministerstva morskogo flota (for Bruskin).
(Merchant marine)

Epp
.R93379

PUSTOVOY,PAVEL VAMIFATIYEVICH

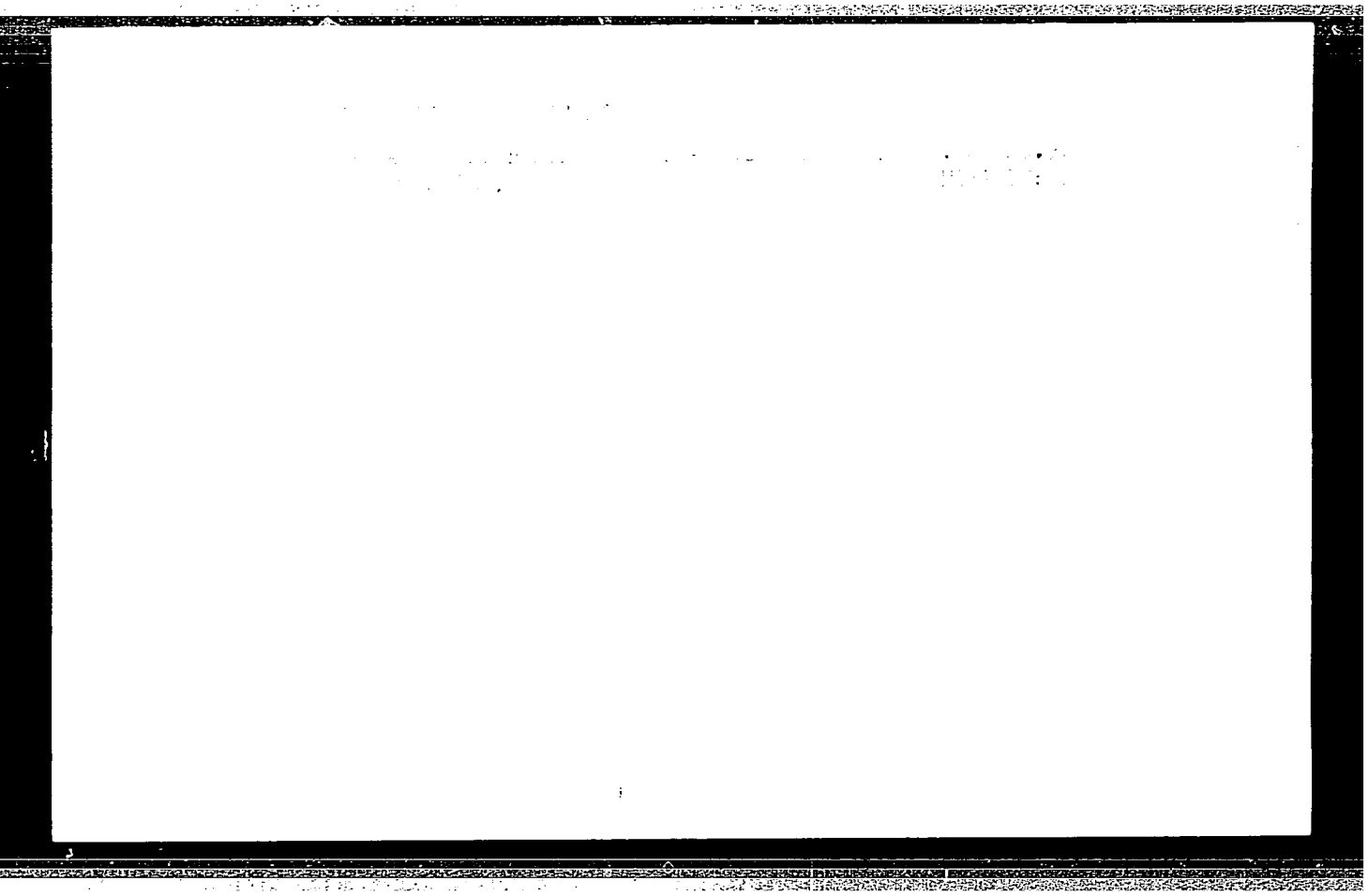
Opyt Raboty Gruzovykh Sudov po raspisaniyu Work ŝchedules of freighter, ty P.V. Pustovoy I Yu. V. Medvedev. Moskiva, "Mosrskoy Transport", 1956.

85 p. illus.diagrs. , tables. Biblioteka Obmena Opytom na Morskom Transporte)

BAYEV, Stepan Mikhaylovich; BRUSKIN, Mikhail Il'ich; PUSTOVOY, Pavel Vanifat'yevich; LYAM, L.M., red.; TIKHONOVA, Ye.A., tekhn. red.

[Merchant marine at the time of the 22d party congress] Morskoi transport k XXII s"ezdu partii. n.p. Izd-vo "Morskoi transport," 1961. 30 p. (MIRA 15:5)

(Merchant marine)



[illegible], L.A., KUSTOSHINOVA, N.M., TEPLOVA, N.M., SHAMOVSKIY, G.N.

Production of transfer RNA acetylated by 2'-oxy groups.
Biokhimiia 30 no.6:1218-1224 N-D '65.

(MIRA 19:1)

1. Institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk. Submitted March 15, 1965.

PUSTOVOYT, B.V., kand.tekhn.nauk, dotsent

Speed of the transformation of a laminar to a turbulent motion of a liquid. Izv. vys. ucheb. zav.; energ. 7 no.3:90-94 Mr '64. (MIRA 17:4)

1. Severo-Zapadnyy zaochnyy politekhnicheskiy institut. Predstavlena kafedroy gidravliki i gidromashin.

39962

S/181/62/004/008/005/041
B125/B104

7,3120

AUTHORS: Makedonskiy, V. L., and Pustovoyt, A. K.

TITLE: Secondary electron emission from antimony chalcogenides

PERIODICAL: Fizika tverdogo tela, v. 4, no. 8, 1962, 2031-2036

TEXT: A device with a spherical collector was used to investigate the coefficient σ of secondary electron emission and the coefficient η of elastic reflection of electrons from thin layers of antimony chalcogenides (Sb_2S_3, Sb_2Se_3, and Sb_2Te_3), condensed on molybdenum disks or polished glass, as functions of the electron energy E_p. The secondary electron spectrum was also examined. The resistivity ρ_1 of the Sb_2S_3 and Sb_2Se_3 layers was 10^{12} ohm·cm, and that of the Sb_2Te_3 layers was 10 ohm·cm. Under the action of visible light of 200-400 lux, the resistivity of the Sb_2Se_3 layers decreased to 1/5 - 1/10, and that of the Sb_2S_3 layers to 1/20 - 1/50. Fig. 2 shows the energy dependences of σ and η. Variations in σ are due to

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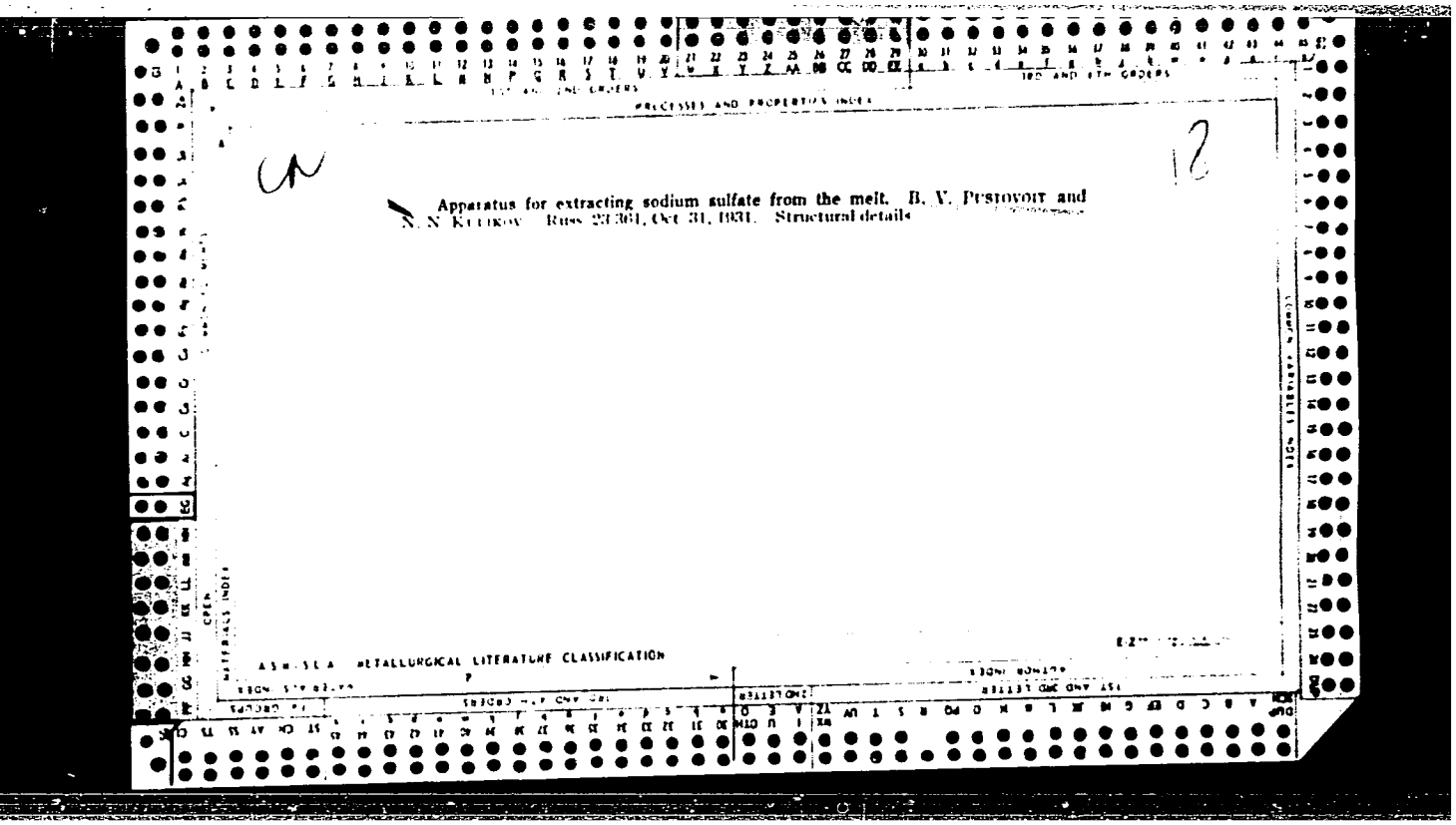
Secondary electron emission from...

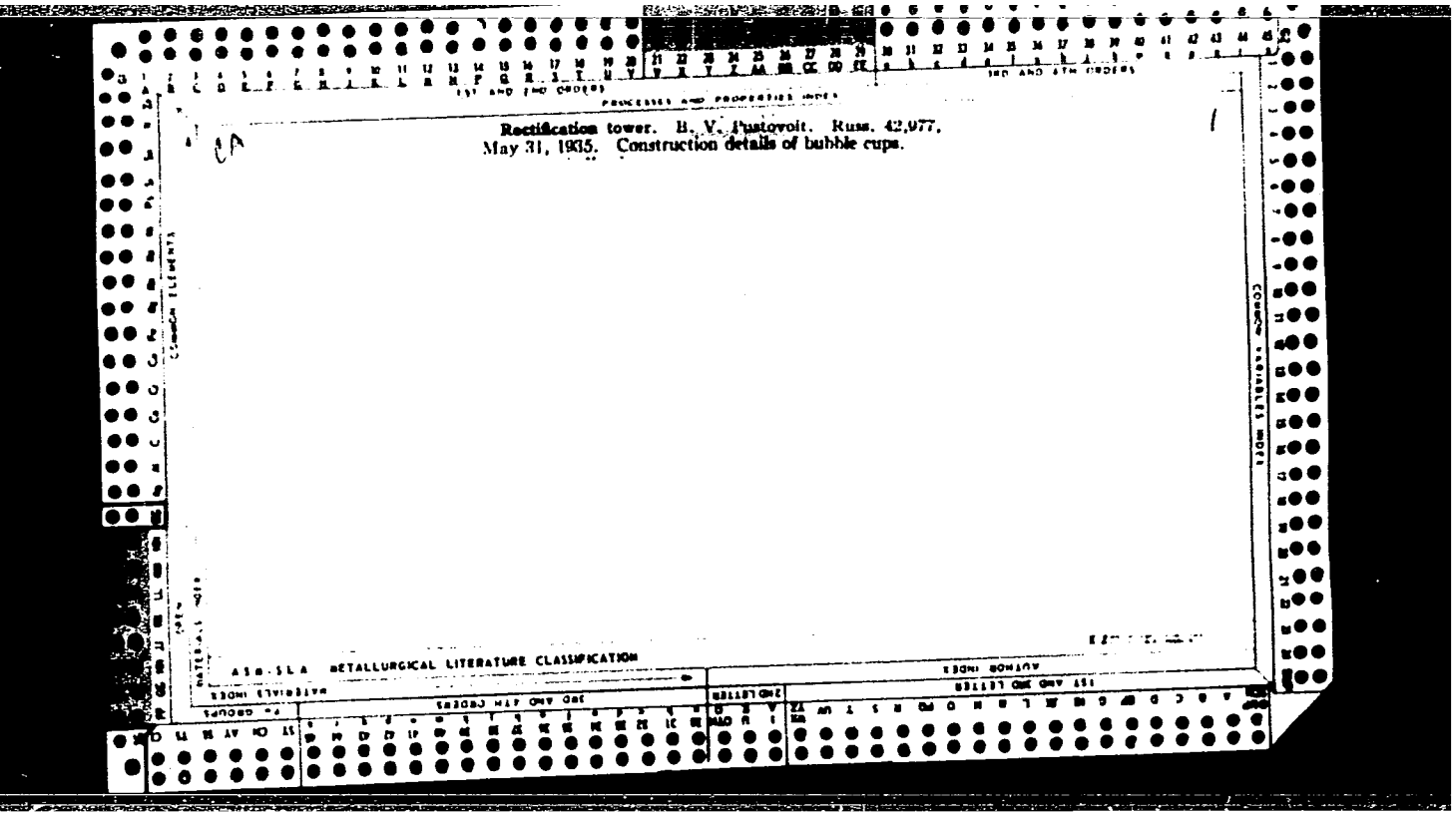
the microrelief of the sample surface. During crystallization, ϱ_T of Sb_2S_3 dropped to 10^{10} ohm·cm, and ϱ_T of Sb_2Se_3 dropped to 10^9-10^{10} ohm·cm. Crystallization changed the energy dependence of Sb_2S_3 and Sb_2Se_3 by 10-15 % at most. The temperature dependence of σ of all the compounds under consideration is hardly larger than the error in measurement ($\sim$2 %). The temperature coefficient of secondary electron emission is 10^{-4} deg^{-1} at most. The secondary electron spectrum shows a maximum at 3 ev, dropping sharply toward lower energies and smoothly toward higher energies. The relatively small values of σ are due to the unfavorable conditions of secondary electron emission. These results are attributed to the dominant role played by the interaction of secondary electrons with valency electrons. There are 4 figures and 1 table.

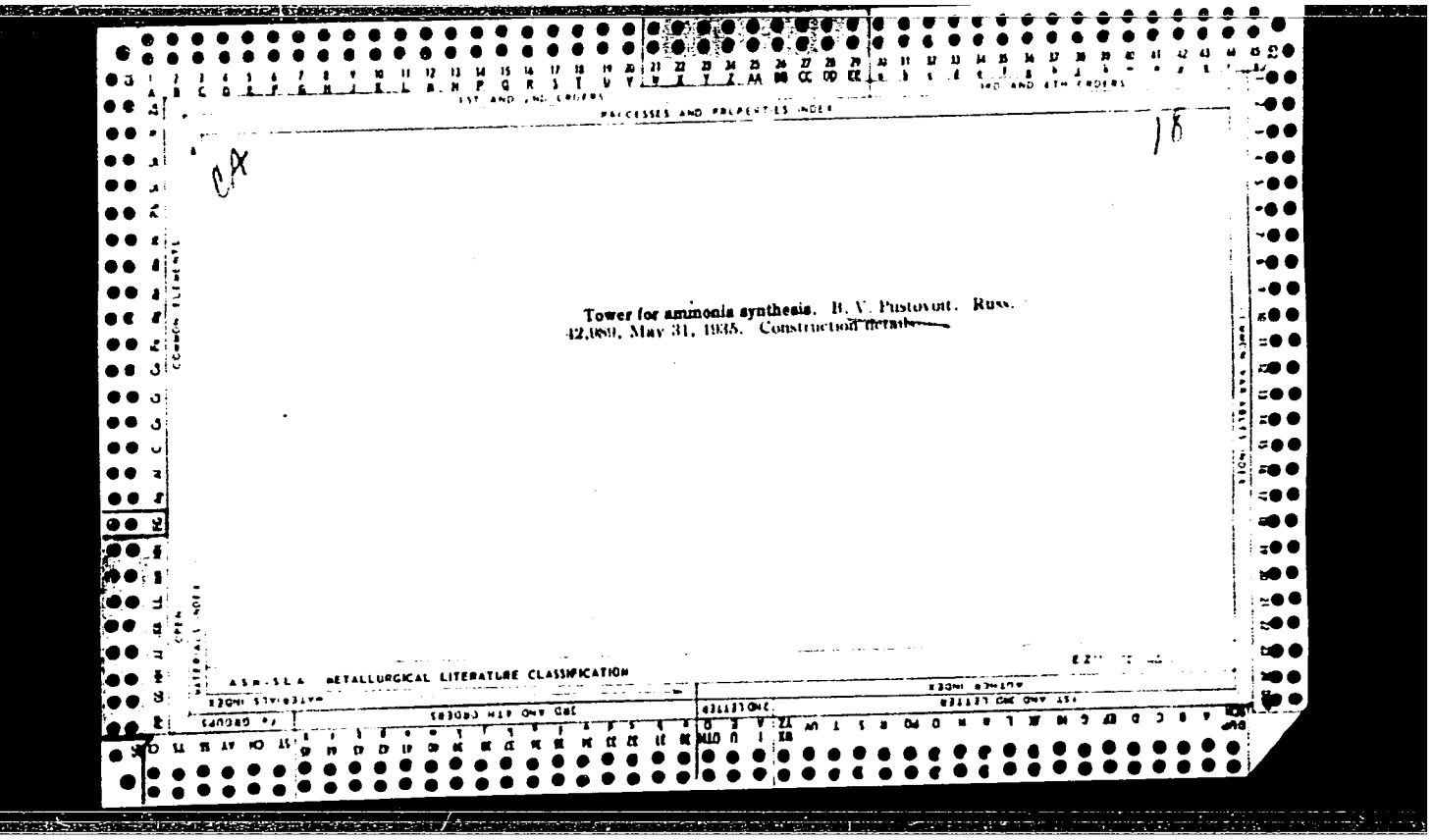
SUBMITTED: February 15, 1962

Fig. 2. $\sigma(E_p)$ of Sb_2S_3 (1), Sb_2Se_3 (2), Sb_2Te_3 (3), and $\eta(E_p)$ of Sb_2S_3 (1'), Sb_2Se_3(2'), and Sb_2Te_3 (3').

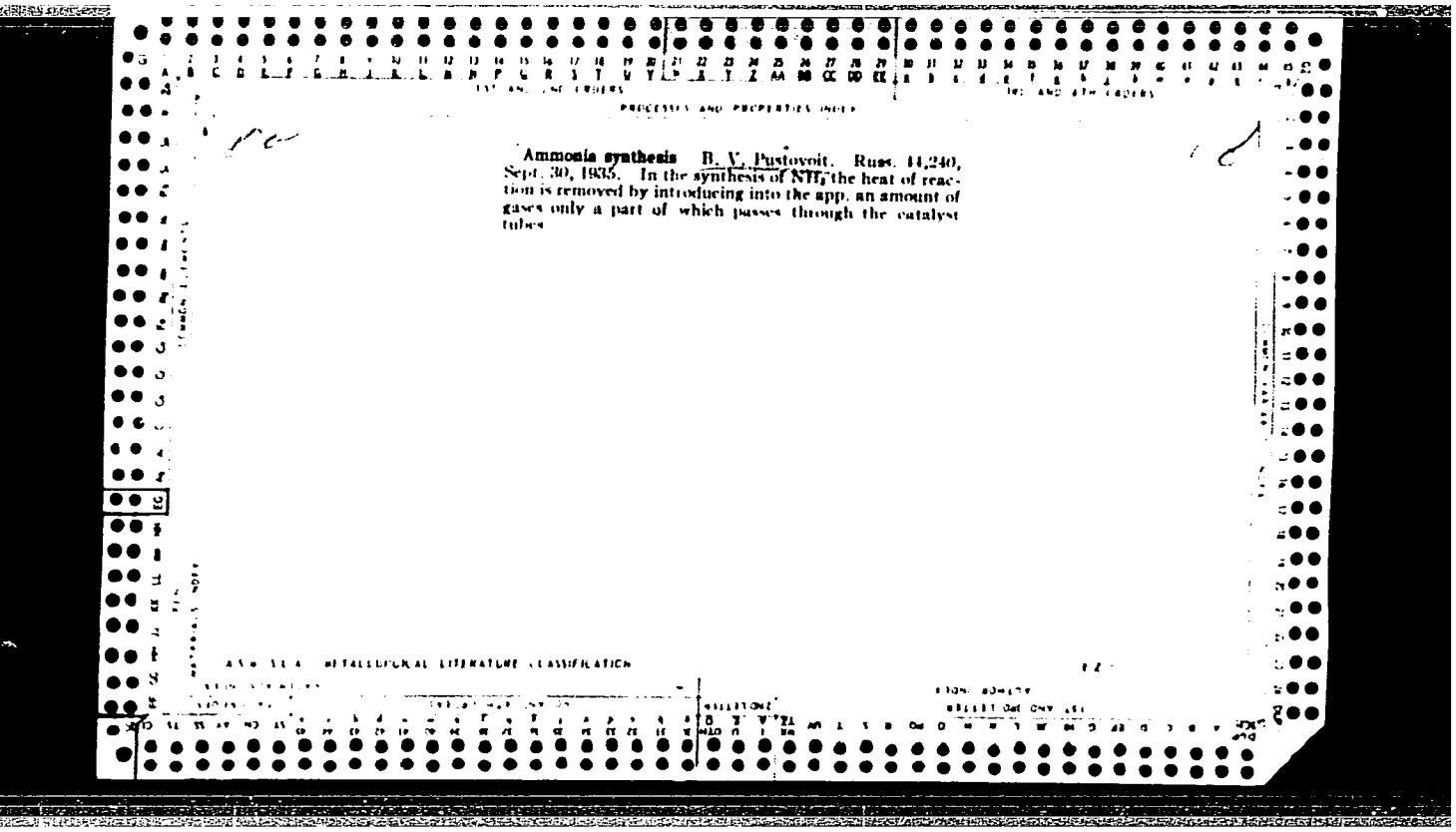


Apparatus for extracting sodium sulfate from the melt. B. V. Pestovoit and N. N. Kulikov. Russ 23,361, Oct 31, 1931. Structural details

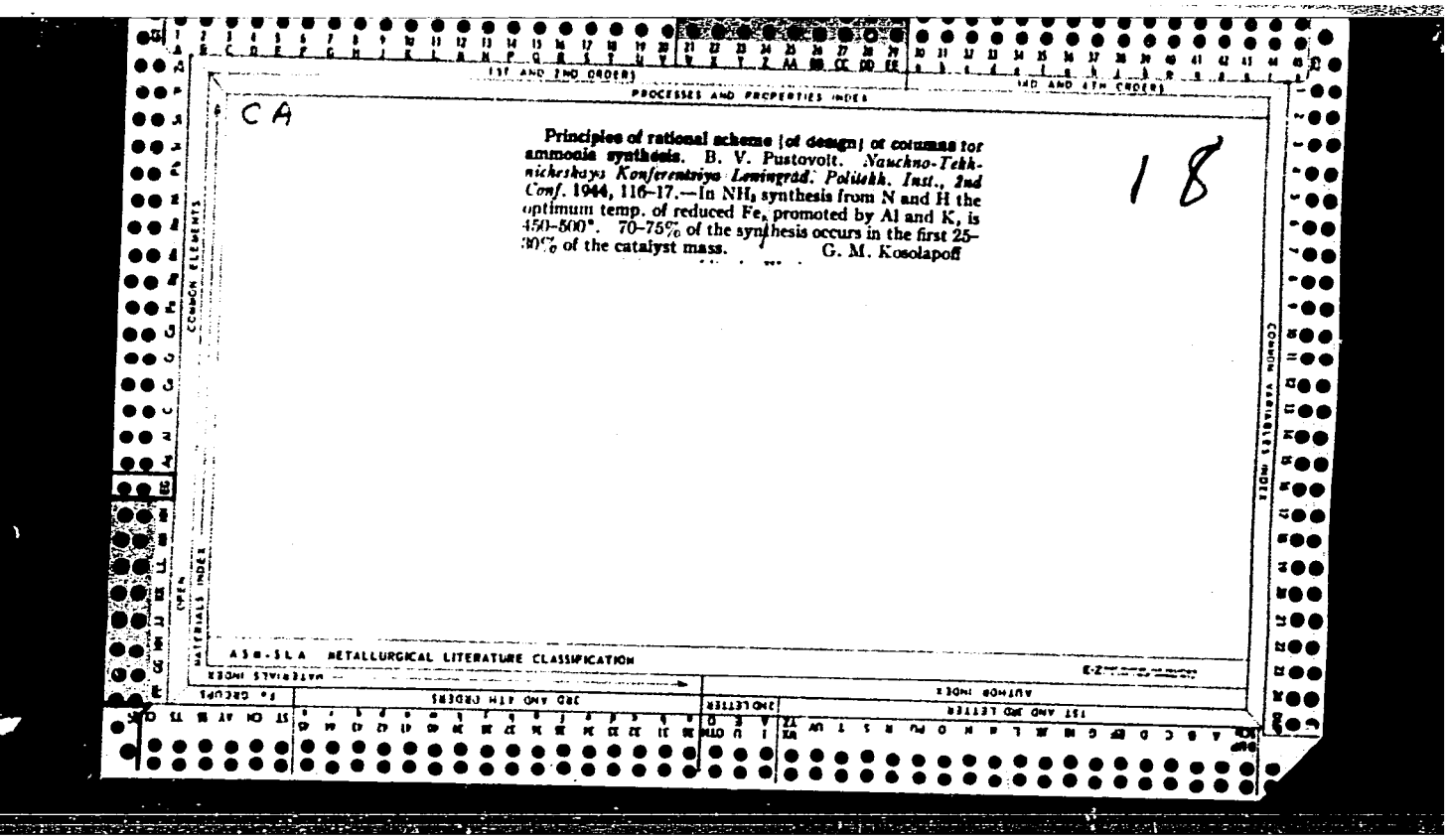




Tower for ammonia synthesis. B. V. Pustovoit. Russ. 42,089, May 31, 1935. Construction details



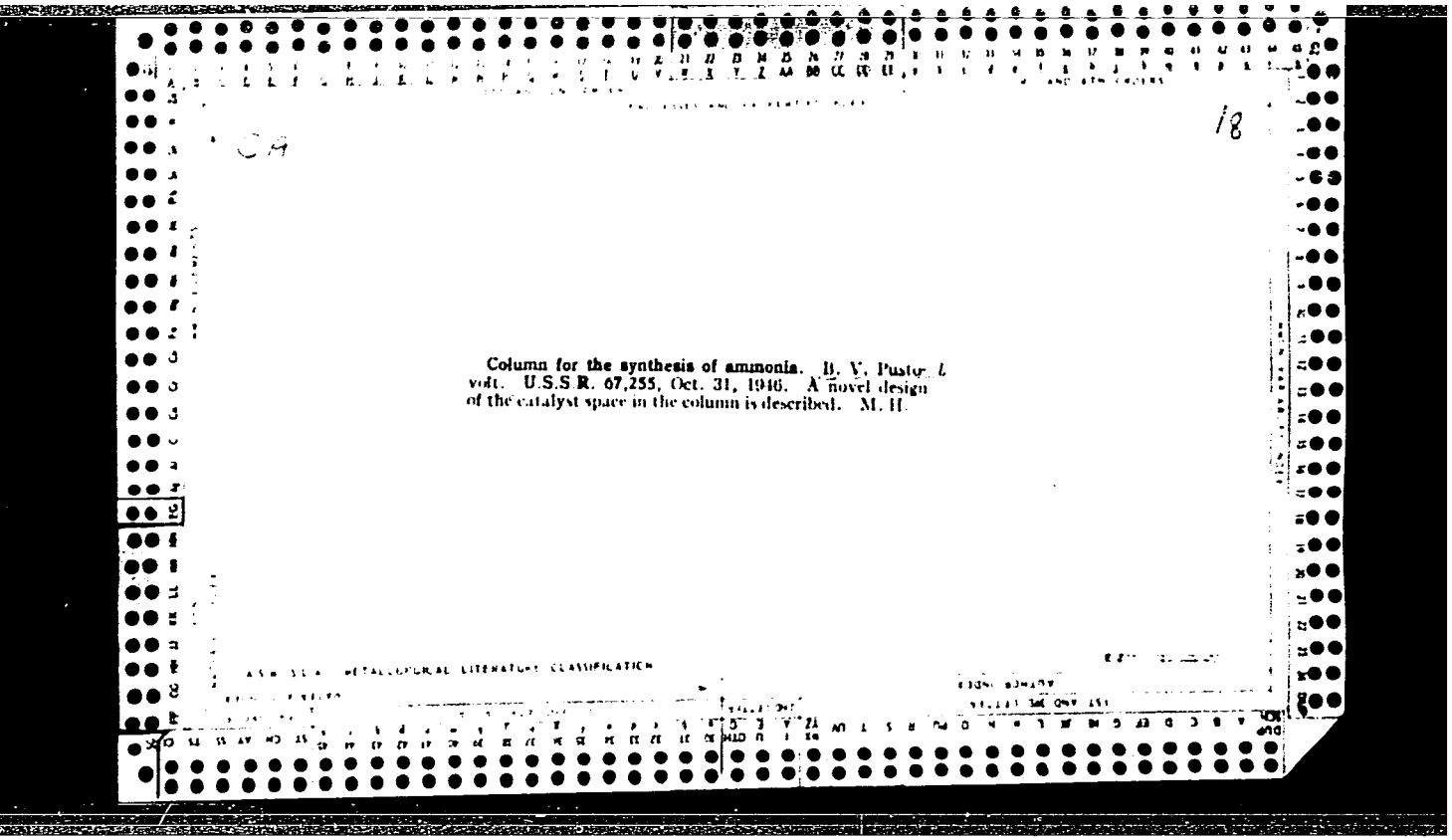
Ammonia synthesis B. V. Pustovoit. Russ. 44,240, Sept. 30, 1935. In the synthesis of NH_3 the heat of reaction is removed by introducing into the app. an amount of gases only a part of which passes through the catalyst tubes



CA

18

Principles of rational scheme [of design] of columns for ammonia synthesis. B. V. Pustovoit. *Nauchno-Tekhnicheskaya Konferentsiya Leningrad. Politekh. Inst., 2nd Conf.* 1944, 116–17.—In NH_3 synthesis from N and H the optimum temp. of reduced Fe, promoted by Al and K, is 450–500°. 70–75% of the synthesis occurs in the first 25–30% of the catalyst mass. G. M. Kosolapoff



Column for the synthesis of ammonia. B. V. Pustovalov. U.S.S.R. 67,255, Oct. 31, 1946. A novel design of the catalyst space in the column is described. M. H.

PUSTOVOYT, B.V., [illegible]

Pressure [illegible] in transient [illegible]
in circular [illegible]-s. Izv.vys.ucheb. zav.;neft' i gaz 7 no.3:83-89.
Je '64

1. Severo-Zapadnyy zaochnyy politekhnicheskiy [illegible]. Rekomendovana kafedroy gidravliki i gidravlicheskikh [illegible].

PUSTOVOYT, B.V., kand. tekhn. nauk

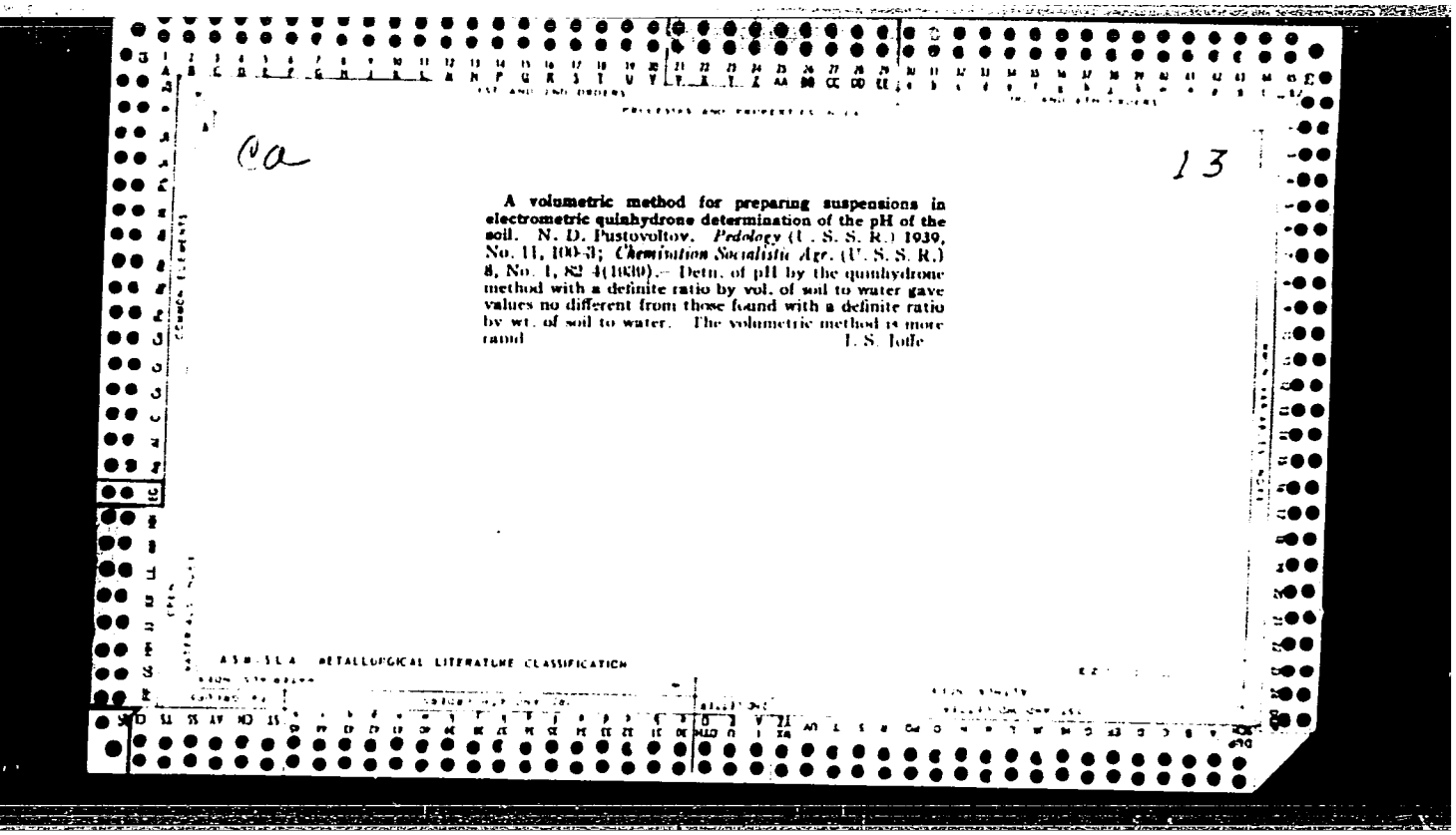
Pressure losses during the flow of a liquid through rough pipes and channels. Izv. vys. ucheb. zav.; energ. 8 no.8:112-118 Ag '65. (MIRA 18:9)

1. Severo-Zapadnyy zaochnyy politekhnicheskiy institut. Predstavlena kafedroy gidravliki i gidromashin.

PUSTOVOYT, G.V., nauchnyy sotrudnik

Breeding sunflower for resistance to rust. Zashch. rast. ot vred. i bol. 8 no.9:10-11 S '63. (MIRA 16:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut maslichnykh i efiromaslichnykh kul'tur.

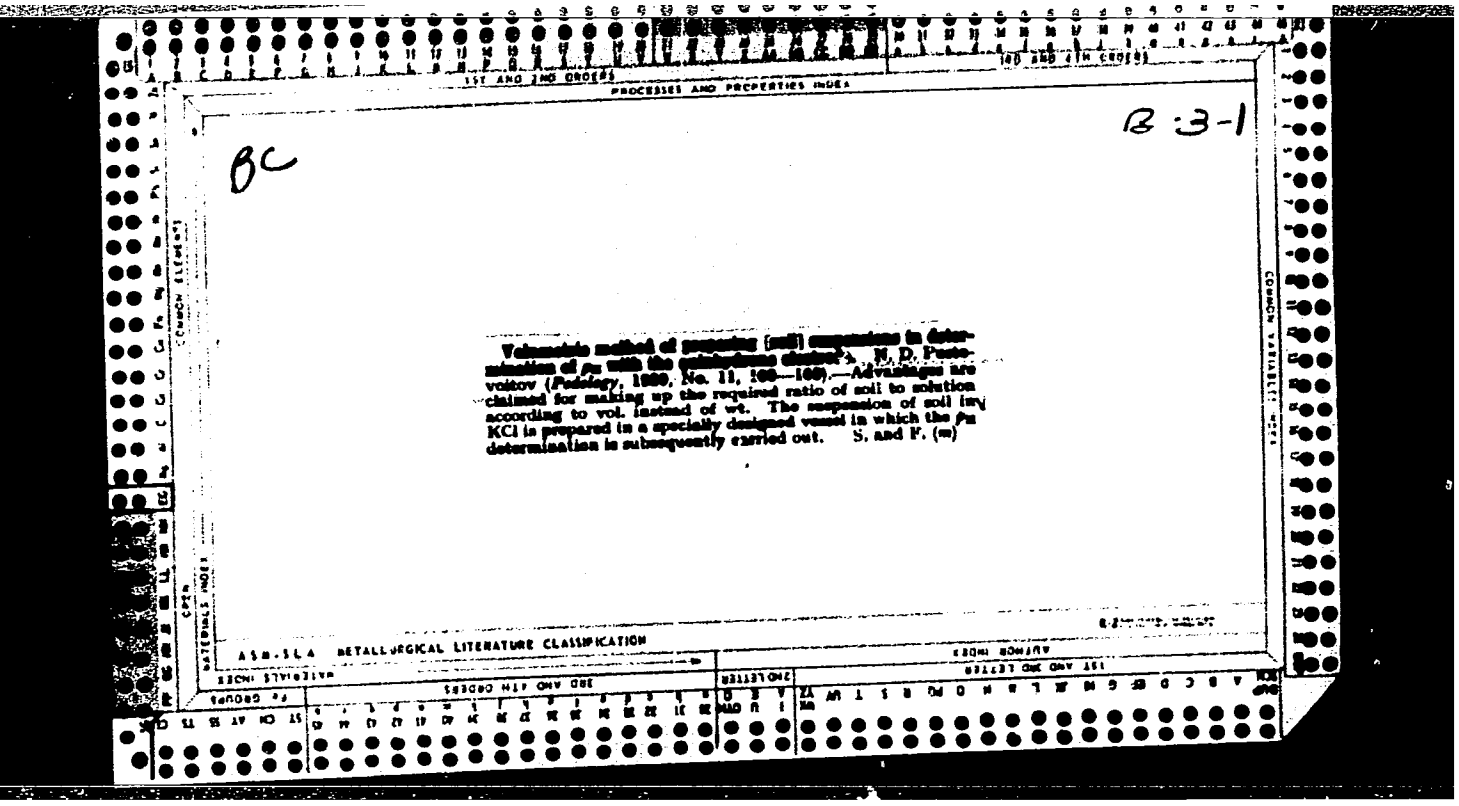


Ca

13

A volumetric method for preparing suspensions in electrometric quinhydrone determination of the pH of the soil. N. D. Pustovoltov. *Pedology* (U. S. S. R.) 1939, No. 11, 100-3; *Chemistion Socialistic Agr.* (U. S. S. R.) 8, No. 1, 82-4(1939).— Detn. of pH by the quinhydrone method with a definite ratio by vol. of soil to water gave values no different from those found with a definite ratio by wt. of soil to water. The volumetric method is more rapid. I. S. Joffe

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



ACCESSION NR: AP4029012 S/0143/64/000/003/0090/0094

AUTHOR: Pustovoyt, B. V. (Candidate of technical sciences, Docent)

TITLE: Rate of change from laminar to turbulent conditions in a liquid flow

SOURCE: IVUZ. Energetika, no. 3, 1964, 90-94

TOPIC TAGS: laminar liquid flow, turbulent liquid flow, intermittence factor, laminar to turbulent change, laminar flow turbulization, turbulization, turbulization rate

ABSTRACT: Conditions of transition from laminar to turbulent flow are theoretically considered, J. Rotta's experimental data (Ing.-Arch., v. 24, no. 4, 1956) being used as a source material. A differential equation is set up for the "intermittence factor" which represents the turbulent share of the total laminar-turbulent-flow time. These conclusions are offered: (1) Turbulization of a laminar flow develops in time in the direction of flow; the rate of turbulization

Card 1/2

ACCESSION NR: AP4029012

existing at the first critical Reynolds number grows a thousandfold or more at the second critical Reynolds number; (2) The equations developed in the article describe a kinematic pattern of transition conditions and permit estimating the turbulization rates within Re = 2,300-3,000. Orig. art. has: 3 figures, 13 formulas, and 1 table.

ASSOCIATION: Severo-zapadny*y politekhnicheskiy institut (North-Western Polytechnic Institute)

SUBMITTED: 13Apr63 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: ME NO REF SOV: 000 OTHER: 001

Card 2/2

PUSTOVOY, I.F.; KHABURZANIYA, K.F.

Abstracts of Soviet medical literature. Reviewed by I.F.Pustovoi, K.F.Khaburzaniia. Sov.zdrav. 16 no.4:61-62 Ap '57. (MIRA 10:8)
(MEDICINE--PERIODICALS)

PUSTOVOY, I.V., kand.med.nauk (Moskva)

Public health planning in the light of resolutions adopted by the 22d Congress of the CPSU. Zdrav. Ros. Feder. 6 no.1:3-6 Ja '62. (MIRA 15:3)

(PUBLIC HEALTH)

PUSTOVOYT, V.S., akademik; PUSTOVOYT, G.V., nauchnyy sotrudnik

Breeding sunflower for resistance to broomrape. Zashch. rast. ot vred. i bol. 8 no.4:15-17 Ap '63. (MIRA 16:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut maslichnykh i efiromaslichnykh kul'tur, Krasnodar. 2. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni Lenina (for V.S. Pustovoyt).
(Broomrate) (Sunflower breeding)

Pustovoyt, G. V.

USSR/Cultivated Plants.- Technical Oleaceae, Sugar Plants M-7

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1659

Author : G.V. Pustovoyt
Inst : Not Given
Title : A Preliminary Appraisal of Sunflower Varieties According to Their Susceptibility to the Pseudo-Parasitic Fungus.

Orig Pub : V sb.: Kratkiy otchet o nauch.-issled. rabote Vses. n.-i. in-ta maslich. i efiromaslich. kul'tur VASKhNIL, za 1955, Krasnodar, 1956, 32-36

Abstract : The appraisal of 2040 numbers and varieties (almost the entire assortment in the Union) of the sunflower, carried out during the years 1954-1955, depending on susceptibility to the pseudo-parasitic fungus, failed to expose a single variety resistant to this disease. Interesting material for selection as a means of resisting this disease is offered by the inter-variety hybrid "Helianthus tuberosus", having cultured varieties. Families were selected among these hybrid, resistant to this disease and at the same time, possessing first rate productivity

Card : 1/2

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001343630005-6

USSR/Cultivated Plants.- Technical Oleaceae, Sugar Plants M-7

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1659

and oiliness. It is noted that H. tuberosus has absolute immunity against all diseases of the cultivated sunflower under the conditions prevailing in the Krasnodarskiy area (kray).

Card : 2/2

PUSTOVOYT, I.M.

Result of application of tissue therapy at a rural medical center.
Khirurgiia, Moskva no.9:57-59 Sept 1953. (CIML 25:5)

1. Rubansk Rural Medical Sector of Dmitrovskiy Rayon, Chernigov Oblast.

L 7929-66 EWP(e)/EWT(m)/EWP(i)/ETC/EWG(m)/EWP(t)/EWP(b) IJP(c) JD/JG/AT/WH

ACC NR: AP5027935 SOURCE CODE: UR/0363/65/001/010/1787/1790

AUTHOR: Makarenko, G. N.; Pustovoyt, L. T.; Yupko, V. L.; Rud', B. M.

ORG: Institute of Materials Science Problems, Academy of Sciences, UkrSSR, Kiev (Institut problem materialovedeniya Adademii nauk UkrSSR)

TITLE: Nature of chemical bonding in rare earth dicarbides

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 10, 1965, 1787-1790

TOPIC TAGS: yttrium compound, lanthanum compound, cerium compound, praseodymium compound, neodymium compound, gadolinium compound, chemical bonding

ABSTRACT: In order to study the chemical bonding in rare earth carbides, the composition of gaseous hydrolysis products of yttrium, lanthanum, cerium, praseodymium, neodymium, and gadolinium dicarbides is investigated chromatographically. The evolution of acetylene as the main hydrolysis product indicates that in the dicarbides the carbon-carbon bonds are much stronger than the carbon-metal bonds, which are broken during hydrolysis. The amount of acetylene increases from La to Gd and then to Pr and Nd; this is explained in terms of the electronic structure of the rare earths. Physical properties (melting points, Hall effect, electrical resistivity, thermoemf, and thermal expansion coefficient) of the

Card 1/2 UDC: 546.65'261+541.57

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ACC NR: AP5027935

dicarbides were measured and plotted against the elements and temperature. A structural model is proposed for LaC_2, PrC_2, NdC_2, and CeC_2: in a tetragonal face-centered cell containing four metal atoms and four C_2 groups, ten of the twelve valence electrons of the four metal atoms participate in the C-C bond, and the remaining two (0.5 electron per metal atom) are free and participate in the conduction. It is concluded that the covalent bond is the strongest one in rare earth dicarbides, and that it is combined with an ionic-metallic bond. Orig. art. has: 2 figures and 2 tables.

SUB CODE: IC, GC / SUBM DATE: 05Jul65 / ORIG REF: 007 / OTH REF: 006

Card 2/2

KOSOLAPOVA, T.Ya.; KAMINSKAYA, O.V.; KOVALENKO, N.A.; PUSTOVOYT, L.T.

Hydrolysis of rare-earth metal dicarbides. Zhur.neorg.khim. 10 no.11:2453-2456 N '65. (MIRA 18:12)

1. Submitted May 5, 1964.

L 8144-66 EWT(m)/EWP(j)/EWP(t)/EWP(b) IJP(c) JD/JG/RM

ACC NR: AP5027205 SOURCE CODE: UR/0078/65/010/011/2453/2456

AUTHOR: Kosolapova, T. Ya, Kaminskaya, O.V., Kovalenko, N.A., Pustovoyt, L.T. 44, 55 44, 55 44, 55 44, 55

ORG: None

TITLE: Hydrolysis of dicarbides of the rare earth metals 27 27,55

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 11, 1965, 2453-2456

TOPIC TAGS: carbide, yttrium compound, lanthanum compound, cerium compound, praseodymium compound, neodymium compound, gadolinium compound, hydrolysis

ABSTRACT: A study was made of the composition of the gaseous products of the hydrolysis of the dicarbides of yttrium, lanthanum, cerium, praseodymium, neodymium, and gadolinium. Weighed portions of the carbides in quartz reactors, purged with carbon dioxide gas, were treated with water at room temperature. The gaseous products evolved during this process were analyzed chromatographically. The article shows a schematic of the chromatographic apparatus. The composition of the hydrolysis products is shown in tabular and in graphic form. The evolution of acetylene as the principal product is evidence that in rare earth metal dicarbides the bond between the atoms and the

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ACC NR: AP5027205

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carbon is considerably weaker than the bonds between the carbon atoms, and that during hydrolysis the metal carbon bonds are broken. Passing from lanthanum to cerium, and then to praseodymium and neodymium, the acetylene content in the hydrolysis products increases; this is connected with the characteristics of the electronic structure of the rare earth metal carbides. The evolution of ethylene and ethane is the result of the catalytic activity of the lower oxides of the rare earth metals. "The authors thank G. V. Samsonov for his valuable advice and help, and G. N. Makarenko for preparation of the rare earth metal carbides by powder metallurgy technology." Orig. art. has: 4 formulas, 3 figures, and 4 tables.

SUB CODE: GC, IC/ SUBM DATE: 05May64/ ORIG REF: 007/ OTH REF: 005

Card 2/2

YEREM..., Dotsent; ... V, V.G.

V[illegible]rational arc build[illegible] up of worn locomotive parts. [illegible]
[illegible] tyag. tiaga 5 no.[illegible] [illegible] '61. (MIRA 14:7)

1. [illegible]skovskiy i[illegible] inzhenerov zheleznodorozhnogo tr[illegible]orta (for [illegible]). 2. Nachal'nik depo Pererva [illegible] dorogi (for [illegible]ustovoy[illegible]).
(Railroads--Repair shops--Equipment and supplies)
(Locomotives)

ACC NR: AM5026680 Monograph UR/

Antomonov, YUriy, Gur'yevich; Kotova, Alina Borisovna; Ponomareva, Inna Dmitriyevna; Pustovoyt, Oksana Gavrilovna; Reshod'ko, Leonid Vasil'yevich; Tsepkov, Gennadiy Vasil'yevich

Mathematical patterns of excitation (Matematicheskiye modeli vozbuzhdeniya) Kiev, Izd-vo "Naukova dumka," 65. 0146 p. illus., biblio. (At head of title: Akademiya nauk Ukrainskoy SSR. Institut kibernetiki) 2,000 copies printed.

TOPIC TAGS; cybernatics, mathematic model, tissue physiology, muscle physiology, myology, neurology, nervous system

PURPOSE AND COVERAGE: The book discusses the properties of elemtns of nervous and muscle tissue by constructing mathematical models. A simple mathematical apparatus is used for cinstructing the models. The book is intended for biologists, engineers, mathematicians, and doctors interested in using cybernetic methods for the analysis of living tissue.

16C

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Ch. I. Determination of the excitability --5
Ch. II. Threshold regularities --24
Ch. III. Models of the nerve --57

Card 1/2 UDC: 534 6P2.15

ACC NR: AM5026680

Ch. IV. Models of the muscle --75
Ch. V. Particular problems --108
Appeddix --122
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Litarature --144

SUB CODE: 06,12/ SUBM DATE: 05Mar65/ ORIG REF: 031/ OTH REF: 015

Card 2/2

ANTOMONOV, Yuriy Gur'yevich; KOTOVA, Alina Borisovna; PONOMAREVA, Irina Dmitriyevna; PUSTOVOYT, Oksana Gavrilovna; RESHOD'KO, Leonid Vasil'yevich; TSEPKOV, Gennadiy Vasil'yevich; SHABANOV-KUSHNARENKO, Yu.P., kand. tekhn. nauk, otv. red.

[Mathematical models of excitation] Matematicheskie modeli vozbuzhdeniia. Kiev, Naukova dumka, 1965. 146 p. (MIRA 18:5)

PUSTOVOYT, S.F.

The regime of river runoff in the Kiev Economic Region. Geog. abir. no.6:91-99 '62. (MIRA 15:9)
(Kiev Economic Region--Runoff)

PUSTOVOYT, G.I.

Physical properties of soils of the Meshkhed-Messerian Plain. Nauch. trudy TashGU no.241. Biol. nauki no.44:73-98 '64. (MIRA 18:7)

MARKTYNOV, R.A.; DOBROSKOK, B.Ye.; ZHDANOV, M.M.; KHALAMAN, B.S.; PUSTOVOYT, S.P.

Field testing of equipment designed for separate injection of water into two layers. Neftepromysl.delo no.10:10-13 '65. (MIRA 19:1)

1. Tatarskiy neftyanoy nauchno-issledovatel'skiy institut Ob"yedineniye neftyanoy promyshlennosti Tatarskoy ASSR Ministerstvo neftyanoy promyshlennosti SSSR.

32479
S/044/61/000/010/045/051
C111/C222

16.3500 24.5200

AUTHOR: Pustovoyt, S.P.

TITLE: On the application of the method of L V. Kantorovich for the solution of problems of the instationary heat convection in closed spaces

PERIODICAL: Referativnyy zhurnal. Matematika, no. 10, 1961, 40-41, abstract 10 V 241. ("Sb. nauchn. tr. Permsk. politekhn. in-t", 1960, no. 7, vyp 1, 77-86)

TEXT: The author solves the plane problem for the system of equations of the instationary heat convection

$$\frac{\partial \Delta \Psi}{\partial t} - \Delta\Delta\psi = \mathrm{Grot}(\theta\gamma) + \frac{\partial \psi}{\partial x} \cdot \frac{\partial \Delta \psi}{\partial y} - \frac{\partial \psi}{\partial y} \cdot \frac{\partial \Delta \psi}{\partial x} \quad (1)$$

$$\frac{\partial \theta}{\partial t} + (v\nabla)\theta = \frac{1}{P}\Delta\theta$$

for the initial and boundary conditions

Card 1/3

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On the application of the method . . .

$$\left.\frac{\partial \Psi}{\partial x}\right|_{t=0} = \left.\frac{\partial \Psi}{\partial y}\right|_{t=0} = 0 , \quad \left.\frac{\partial \Psi}{\partial x}\right|_{\Gamma} = \left.\frac{\partial \Psi}{\partial y}\right|_{\Gamma} = 0 ,$$

$$\theta|_{t=0} = \theta_0 , \quad \theta|_{\Gamma} = f_1(t,S)$$

(or $\left.\frac{\partial \psi}{\partial \quad}\right|_{\quad} = t_2(t,S)$) where Ψ -- flow function, ψ -- hydrodynamic velocity, $v_x = \frac{\partial \Psi}{\partial y}$, $v_y = \frac{\partial \Psi}{\partial x}$, θ -- temperature, Γ -- boundary of the space, γ -- unit vector directed in contrary to the acceleration due to gravity, G -- Grasshof number, P -- Prandtl number, f_1 and f_2 known functions. The author assumes that the Grasshof number is sufficiently small (in the case of a weak convection), and he seeks the solution of the problem in the form of power series in G for Ψ and θ, By substitution of this arrangement [illegible] being linear

Card 2/3

On the application of the method ...

equations for the successive approximations. The author writes the equations and conditions (initial and boundary conditions) obtained in the zero and first approximation, he assumes the solution of the equation of the zero approximation to be known and for the solution of the equations of the first approximations with the corresponding conditions he uses the method due to L.V. Kantorovich (L.V. Kantorovich, V.I. Krylov, Priblizhennyye metody vysshego analiza [Approximate methods of higher analysis] M.-L., G I T T L , 1949). An error estimation is missing.

[Abstracter's note : Complete translation.]

Card 3/3

S/124/61/000/012/024/038
D237/D304

26.5200

AUTHOR: Pustovoyt, S. P.

TITLE: On applying the method of L. V. Kantorovich to solving problems of non-stationary convection of heat in enclosed cavities

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 12, 1961, 93, abstract 12B644 (Sb. nauchn. tr. Permsk. politekhn. in-t, 1960, no. 7, 1, 77-86)

TEXT: Non-stationary equations of free convection of heat are considered. If velocity and temperature are expanded into series in Grashof No., then systems of linear equations of successive approximations are obtained. Velocity in zero approximation is equal to zero, while the equation for the zero approximation of the temperature can be solved by known methods. Systems of equations for 1st and higher approximations (a plane case is considered) are solved by the approximate method of

Card 1/2

S/124/61/000/012/024/038
D237/D304

On applying the method...

L. V. Kantorovich by approximating unknown functions by a part of the series of coordinate dependent functions, the coefficients of which are time-dependent. Galerkin's integral relations are constructed in order to determine the coefficients, and that leads to a system of ordinary differential equations of the 1st order for the unknown coefficients. As an example, the problem of the motion of a fluid is considered--stationary at the start of temperature T_0 and placed in a horizontal cylinder, the wall temperature of which is T_1. The problem is solved with an accuracy up to and including 1st order approximation. [Abstracter's note: Complete translation.]

/B

Card 2/2

KRUTIKOV, B.S.; PERTSOV, A.Yu.; PUSTOVOYT, S.P.

Developing and testing equipment for separate water injection into two beds through one injection well on the Romashkino oil field. Neftepром. delo no.7: 19-23 '64. (MIRA 17:8)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut i neftepromyslovoye upravleniye "Leninogorskneft'".

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S/139/60/000/03/010/045
E032/E314

AUTHOR: Pustovoyt, V.I.

TITLE: Linear Theories of Gravitation

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, Nr 3, pp 63 - 71 (USSR)

ABSTRACT: In spite of the fact that the general theory of relativity is widely accepted at the present time, attempts are still being made to approach the gravitation problem in a somewhat different way. This statement applies principally to all the possible linear theories of gravitation (Refs 1-4), which are based on the usual pseudoscalar space-time metric. The three so-called critical effects, namely, deflection of light in a gravitational field, the advance of the perihelion of planets and the red shift, are found to have the same values on the linear theories as in the general theory of relativity (Refs 1, 4-6). This "agreement" is due to the fact that the effects are very small so that first-order approximations are usually employed both in the general theory and in the linear theories The linear theories of gravitation meet with serious difficulties.

Card1/3

Linear Theories of Gravitation

one of which is that the energy of the gravitational field is not positively defined (Refs 7,8). However, attempts have been made to overcome these difficulties (Ref 9). It is therefore of interest to find differences between the general theory of relativity and the linear theories which could, at least in principle, be tested by experiment. The present paper is concerned with the latter problem. The Birkhoff (Ref 1) and the Belinfante and Swihart (Ref 4) theories are discussed. They are compared with the general theory on relativity due to Einstein and differences are found which at least in principle could be detected with the aid of artificial Earth satellites. In particular, a detailed discussion is given of the effect associated with the presence of rotation in the central body and it is shown that when this effect is taken into account the different theories lead to different results. In particular, the Belinfante theory gives $\Delta a \simeq 1$ cm, while on the general theory of relativity $\Delta a = 0$. Ginzburg (Refs 6,33) has in fact shown that the artificial Earth satellites can be used to verify rotational effects and hence it may be considered

Card2/3

38466

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D266/D308

24.7000

AUTHORS: Gertsenshteyn, M. Ye. and Pustovoyt, V. I.

TITLE: Propagation of space charge acoustic waves in semiconductors

PERIODICAL: Radiotekhnika i elektronika, v. 7 no. 6, 1962, 1009-1013

TEXT: Two approaches are presented: The first and simpler one takes no account of the microscopic properties of the crystal and only assumes the existence of a space charge wave. It is shown on this basis that the a.c. goes to infinity if the phase velocity of the electromagnetic wave agrees with the drift velocity of the carriers (only electrons are considered). The second approach starts with the hydrodynamical equations of charged media

$$\frac{\partial \rho}{\partial t} + \operatorname{div} v_p \rho = 0,$$

Card 1/4

$$\rho \frac{\partial v_p}{\partial t} + (v_p \nabla) v_p = - \nabla P + \tilde{q}\vec{E} - \rho_o \frac{m}{M} \nu_c (v_p - v_\sim) \qquad (10)$$

where v_p - velocity pertaining to lattice vibrations, ρ - the corresponding charge density, p - pressure, $\tilde{q}$ - charge in a volume element in the absence of carriers, α - 'coefficient of ionization', ratio of the carrier concentration to the concentration of atoms in the lattice, $\alpha \ll 1$, $\vec{E}$ - average value of the electric field in the crystal, ν - collision frequency, $v_\sim$ - a.c. velocity of the carriers, m, M - mass of the carriers and ions respectively. Neglecting the a.c. density component of lattice vibrations and assuming a plane electromagnetic wave Eqs. (10) are solved yielding the characteristic equation. Introducing

$$\omega = k v_s + \Delta\omega, \quad \Delta\omega \ll \omega \qquad (19)$$

Propagation of space ...

(ω - frequency of the electromagnetic wave, v_s - velocity of sound in the crystal in the absence of carriers) and assuming that ω_e [illegible] the following equation is obtained:

$$\mathrm{Im}\,\Delta\omega = \frac{\omega_m}{2M} v \frac{\omega^2}{\omega_e^2} \beta(1 - \beta) + \frac{\omega^2}{\omega_e^2} (1 - \beta)^2 \} \qquad (21)$$

where ω_e is the plasma frequency of the carriers, $\beta \equiv v_= / v_{ph}$, $v_=$ - drift velocity of electrons, v_{ph} - phase velocity of the electromagnetic wave. Growing waves arise if $\mathrm{Im}\,\Delta\omega < 0$, i.e. $\beta < 0$ or $\beta > 1$. The lower frequency limit is given by the condition

$$\omega \gg \tau_0^{-1} \qquad (8)$$

Card 3/4

where τ_0 - effective relaxation time of the zeroth harmonic of the distribution function determined by the inelastic scattering of the carriers on phonons. The upper frequency limit is

$$\omega = \omega_e \sqrt{\frac{\beta}{1-\beta}} \qquad (22)$$

It is conjectured that the excess noise found in semiconductor diodes is caused by this mechanism.

SUBMITTED: July 7, 1961

34007
S/056/62/042/001/025/048
B104/B102

9.9867
24.4500

AUTHORS: Pustovoyt, V. I., Gertsenshteyn, M. Ye.

TITLE: Gravitational radiation from a relativistic particle

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 1, 1962, 163-170

TEXT: A charged relativistic particle is examined traveling along a given curvilinear path in a magnetic field. As the gravitational interaction is weak, the trajectory is fully determined by electromagnetic interaction. The energy of gravitational radiation is computed. Not only the mass tensor of the particle itself, but also those electromagnetic stresses which are caused by the charge are the source of the gravitational waves, their contribution to the radiation being of the same order as that of the mass. The small additions to the metric tensor correspond to two processes of gravitational wave formation: the usual type of mass and charge emission, and the resonance emission of gravitational waves by the electromagnetic field in the presence of a constant external magnetic field. It is shown that the energy dependence of the intensity of

Card (1/2)

34007
S/056/62/042/001/025/048
B104/B102

Gravitational radiation from a...

radiation of gravitational waves in the ultrarelativistic case is the same as that of an electromagnetic field. Professor V. L. Ginzburg is thanked for assistance, and Professor L. E. Gurevich for comments. There are 12 references: 7 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: L. Infeld, A. E. Scheidegger Can. J. Math., 3, 195, 1951; J. N. Goldberg. Phys. Rev., 99, 1873, 1955; A. E. Scheidegger. Phys. Rev., 99, 1883, 1955; P. Havas, Phys. Rev., 108, 1351, 1957.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: June 16, 1961

Card 2/2

GERTSENSHTEYN, M.Ye.; PUSTOVOYT, V.I.

High-frequency conductivity of a plasma in the presence of a direct current. Zhur. eksp. i teor. fiz. 43 no.2:536-542 Ag '62. (MIRA 16:6)

1. Fizicheskiy institut imeni P.N.Lebedeva AN SSSR.
(Plasma (Ionized gases)) (Electric conductivity)

GERTSENSHTEYN, M.Ye.; PUSTOVOYT, V.I.

Detection of low-frequency gravitational waves. Zhur. eksp. i teor. fiz. 43 no.2:605-607 Ag '62. (MIRA 16:6)
(Gravity)

44243

S/056/62/043/006/053/067
B102/B186

AUTHOR: Pustovoyt, V. I.

TITLE: Plasma conductivity in the presence of a drift

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 6(12), 1962, 2281-2289

TEXT: The author considers a plasma, e.g. the carrier plasma of a crystalline solid, that shows a drift in the direction $\vec{x} \parallel \vec{E}_=$, and calculates its a-c conductivity in the $\vec{x}$-direction. The calculations are based on the use of the electron kinetic equation

$$\frac{\partial f}{\partial t} + \mathbf{v}\nabla_{\mathbf{r}} f + \frac{e}{m}\left(\mathbf{E} + \frac{1}{c}[\mathbf{vH}]\right)\nabla_{\mathbf{v}} f + S = 0, \qquad (1)$$

where S is the collision integral, whose solution is

$$f(\mathbf{r}, \mathbf{v}, t) = \sum_{k=0}^{\infty} P_k(\cos\alpha)\, f_k(\mathbf{r}, v, t). \qquad (2)$$

Card 1/4

Plasma conductivity in the...

and

$$f = f_0 + \varphi_0 + (v/v)(f_1 + \varphi_1) + \ldots, \qquad (4)$$

the weak variable field $\vec{E}_{\sim} \parallel \vec{E}_{=}$ causes the presence of a nonsymmetric part $\vec{f}_1$ of the distribution function, $S_1 = \nu(v)\vec{\varphi}_1$, the Legendre transform of S. The conductivity $\sigma_x \equiv \sigma = \frac{e}{E_{\sim}} \int_0^{\infty} v^3 \varphi_{1x}(v)dv$ is given by

$$\sigma = \frac{3e^2E_{=}}{m\gamma E_{\sim}} \int_0^{\infty} v^2\varphi_0 dv + \frac{ise}{\gamma E_{\sim}} \int_0^{\infty} v^4\varphi_0 dv + \frac{3e^2}{m\gamma} \int_0^{\infty} v^2 f_0 dv. \qquad (12)$$

or by

$$\sigma = \frac{\sigma_0}{1+\omega_H^2\tau_p^2} \left\{ 1 - \frac{v_{=}}{v_\phi} \frac{\cos\theta}{1+\omega_H^2\tau_p^2} + \frac{v_{=}}{v_\phi} \frac{\omega_H\tau_p}{1+\omega_H^2\tau_p^2} \sin\theta \right\}^{-1}, \qquad (16)$$

$v_\phi = \omega/k$ is the phase velocity of the wave, θ the angle between $\vec{k}$ and $\vec{E}_{=}$, $v_{=} = eE_{=}/m\nu$ is the drift rate, $\sigma_0 = e^2 n_0/m\nu$ is the d-c conductivity,

Card 2/4

$\omega_H = eH/mc$, n_o is the number of particles per unit volume, for τ_p the inequality $v\tau_p v_t^2/v_\phi^2 \ll |1-v_= \cos\theta/v_\phi|$ holds. With $\vec{k} \parallel \vec{E}_=$ from (16) the well-known relation $\sigma = \sigma_o/(1-v_=/v_\phi)$ follows. In strong magnetic for which $\omega_H \gg \nu$

$$\sigma \approx \sigma_0 \omega_H^{-2} \tau_p^{-2} [1 + v_= \sin\theta/v_\phi]^{-1}. \qquad v_= = eE_=/m\omega_H = cE_=/H \quad (18);$$

$v_=$ is the drift rate in the magnetic field. The condition $\omega_H \gg \nu$ can be realized for a weakly ionized plasma where collision frequencies of $\nu \sim 10^9$-10^8 sec^{-1} arise. In a solid where $\nu \sim 10^{12}$ sec^{-1}, $\vec{H}$ would have to reach 10^5-10^6 oe. The fact that if the drift rate exceeds the phase velocity the conductivity becomes negative is attributed to the translation of the volume charge. An effect of the frequency dependence of σ arises only at low frequencies. If the velocity dependence of ν, $\nu(v) = \pi a^2 N_m v$, is taken into account, renormalization of the drift velocity results.

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Plasma conductivity in the...

$$\sigma = -\frac{e^2}{m}\int_0^\infty v^3 \frac{\partial f_0}{\partial v}\frac{1}{\nu(v)}dv - \frac{e^2 E_=}{mE_\sim}\int_0^\infty \frac{v^3}{\nu(v)}\frac{\partial \varphi_0}{\partial v}dv. \qquad (28)$$

$$\sigma = \bar{\sigma}_0 / (1 - \bar{v}_= \cos\theta / v_\phi), \qquad (30)$$

$$\bar{\sigma}_0 = -\frac{e^2}{3m}\int_0^\infty \frac{v^3}{\nu(v)}\frac{\partial f_0}{\partial v}dv; \qquad (31)$$

$\bar{v}_= = eE_=/m\nu_{eff}$, $\nu_{eff} = \alpha_1 \pi a^2 N_m v_t$; a is the molecule radius and N_m the molecule concentration, and N_i the ion concentration.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: July 14, 1962

Card 4/4

PUSTOVOYT, V.I.

Ultrasound propagation in semiconductors. Fiz. tver tela 5 no.9:2490-2500 S '63. (MIRA 16:10)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR, Moskva.

GERTSENSHTEYN, M.Ye.; PUSTOVOYT, V.I.; FILIPPOV, S.S.

Hypersound amplification in piezoelectric semiconductors. Radiotekh. i elektron. 8 no.9:1607-1614 S '63. (MIRA 16:9)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR.
(Piezoelectric substances)

ACCESSION NR: AP4019853 S/0181/64/006/003/0879/0887

AUTHORS: Pustovoyt, V. I.; Gertsenshteyn, M. Ye.

TITLE: On the possibility of amplifying flexural waves

SOURCE: Fizika tverdogo tela, v. 6, no. 3, 1964, 879-887

TOPIC TAGS: semiconductor film, phase velocity, dielectric permeability, wave amplification, piezo semiconductor

ABSTRACT: It is shown that in semiconductor films flexural waves could be amplified if the carrier drift speed surpasses the phase velocity of the flexural waves. The equation describing the flexural wave in a thin film is derived with the accompanying dispersion relation. The dielectric permeability tensor for the plasma carriers in a semiconductor is determined next, and the flexural wave amplification condition is stated by means of the inequality

$$\frac{1}{\nu}\frac{\bar{v}_{T}^{2}}{h^{2}} \ll \omega < \frac{c_{\perp}}{h},$$

where $C_{\perp}$ - transverse wave speed in infinite medium. For a CdS crystal this

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ACCESSION NR: AP4019853

yields $10^4 c \ll \omega \ll 10^7 c$. Expressions are derived for the growth and frequency dependence of amplification, and for CdS the maximum amplification is found to be 50 db/cm at 10 megacycles frequency. The effect of adding a magnetic field on the amplification of the flexural wave is studied. The transfer electron diffusion is shown to decrease under a strong longitudinal field. Numerical calculations show that the increment in intensification for electron-phonon interactions is significantly lower than in piezo-semiconductors. "The authors are grateful to V. L. Ginzburg and L. V. Keldy*sh." Orig. art. has: 42 equations and 1 figure.

ASSOCIATION: Vsesoyuzny*y nauchno-issledovatel'skiy institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy Moscow (All-Union Scientific Research Institute for Physical and Technical and Radio Technological Measurements)

SUBMITTED: 10Oct63 DATE ACQ: 31Mar64 ENCL: 00

SUB CODE: PH NO REF SOV: 007 OTHER: 002

Card 2/2

ACCESSION NR: AP4031161 S/0056/64/046/004/1386/1391

AUTHORS: Pustovoyt, V. I.; Bautin, A. V.

TITLE: Gyroscope motion in gravitation theories

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1386-1391

TOPIC TAGS: gyroscope, gyroscope motion, gravitation theory, gyroscope precession, satellite borne gyroscope, gravitational waves, general relativity, linear gravitation theory

ABSTRACT: Following up a suggestion made by L. J. Schiff (Proc. Nat. Acad. Sci. USA, v. 46, 871, 1960), the authors calculate the equations of motion of a satellite-borne gyroscope and show them to be different in general relativity theory from the equations obtained by the linear theories of gravitation. Whereas in the former only pure precession will be observed, in the latter the angular velocity vector will also increase in magnitude. Although the calculated pre-

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ACCESSION NR: AP4031161

cession rate (about 3×10^{-7} seconds of arc per second of time) is still quite difficult to observe, it still produces an effect which is one order of magnitude larger than that of gravitational waves [$(v/c)^4$ against $(v/c)^5$]. "In conclusion, we are deeply grateful to Prof. V. L. Ginzburg for proposing the topic and for guidance." Orig. art. has: 21 formulas.

ASSOCIATION: Vsesoyuzny*y institut fizikotekhnicheskikh i radiotekhnicheskikh izmereniy (All-union Institute of Physicotechnical and Radio Measurements)

SUBMITTED: 09Oct63 DATE ACQ: 07May64 ENCL: 00

SUB CODE: PH NO REF SOV: 004 OTHER: 015

Card 2/2

L 22186-65 EWA(h)/EWG(k)/EWT(l)/T/ Peb/Pz-6ASDA-5/AFWL/BSD/SSD/AFMDT/ESDC/ESDG(s)
IJP(c) AT

ACCESSION NR: AP5001848 S/0056/64/047/006/2251/2253

AUTHOR: Gulyayev, Yu. V.; Pustovoyt, V. I.

TITLE: Amplification of surface waves in semiconductors

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 6, 1964, 2251-2253

TOPIC TAGS: surface wave, wave amplification, semiconductor, carrier density, carrier mobility, sound speed, piezoelectricity

ABSTRACT: It is shown by a quasihydrodynamic analysis that surface waves can be amplified in a layered system consisting of a thin semiconducting layer and a semi-infinite piezoelectric (or vice versa), using the phenomenon whereby the electric field that accompanies an elastic wave in the piezoelectric penetrates into the semiconductor, in which the carriers move in a definite direction. This is analogous to the amplification of acoustic waves observed in semiconductors when the carrier drift velocity exceeds the phase velocity of the acoustic wave. In the case considered here amplification will take place when the directional velocity of the carriers in the superconductor exceeds the phase velocity of the

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surface waves. If amplification is effected, the power per unit volume of the semiconductor can be markedly reduced by using a semiconductor with large carrier mobility. For example, for pure InSb with approximate carrier density 10^{12} cm^{-3} and mobility 10^4 $cm^2/V \cdot sec$ the power dissipation is about 0.1 W/cm^3, which is much lower than in the case of CdS. It is pointed out in the conclusion that a similar analysis can be applied to other types of surface waves, particularly plasma waves. "We thank V. L. Ginzburg, S. G. Kalashnikov, V. L. Bonch-Bruyevich, and L. V. Keldy*sh for a discussion of the work." Orig. art. has: 4 figures.

ASSOCIATION: Institut radiotekhniki i elektroniki Akademii nauk SSSR (Institute of Radio Engineering and Electronics, Academy of Sciences SSSR); Institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy (Institute of Physicotechnical and Radio Measurements).

SUBMITTED: 20Jun64 ENCL: 00

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ACC NR: AP6018805 SOURCE CODE: UR/0056/66/050/005/1265/1278

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B

AUTHOR: Pustovoyt, V. I.; Poluektov, I. A.

ORG: Institute of Physicotechnical and Radiotechnical Measurements (Institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy); Physics Institute im. P. N. Lebedev (Fizicheskiy institut)

TITLE: Attenuation oscillations and the speed of acoustic waves [2] in semiconductors and metals in the presence of a strong magnetic field [2]

SOURCE: Zh eksper i teor fiz, v. 50, no. 5, 1966, 1265-1278

TOPIC TAGS: ultrasonic wave propagation, Coulomb field, permittivity, matrix element, semiconductor conductivity, metal conductivity, magnetic field

ABSTRACT: It has been shown that an important factor in the establishment of the amplitude of attenuation oscillations of ultrasonic waves in degeneration semiconductors and metals is the formation of a space charge by the wave and the Coulomb field connected with it. This circumstance has been taken into consideration in setting up

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ACC NR: AP6018805

a dispersion equation for the propagation of ultrasonic waves in semiconductors and metals. To investigate the nature of oscillations, a knowledge of the complex longitudinal conductivity of the medium is required. To find the complex permittivity of the medium under conditions of Landau quantization, the equation has been examined for the density matrix operator. It has been shown that for the calculation of the longitudinal permittivity of the medium, the equation of the density matrix in which collisions are taken into account can be reduced to a "kinetic equation" for a single matrix element. The possibility of oscillations of the imaginary and actual conductivity has been studied. It has been shown that the imaginary part of conductivity oscillates only under extremely rigid conditions. Oscillations of the attenuation and speed of sound, connected with oscillations of the actual part of conductivity, have been investigated and the results compared with experimental findings. The authors thank L. V. Keldysh for his criticism and valuable remarks. Orig. art. has: 1 figure and 41 formulas. [Based on authors' abstract] [NT]

SUB CODE: 20/ 11/ SUBM DATE: 10Jul65/ ORIG REF: 007/ OTH REF: 014/

Card 2/2 ULR

PUSTOVOYT, V.M.

We try to find ways to increase labor productivity. Transp. stroi. 15 no.5:33-34 My '65. (MIRA 18:7)

1. Nachal'nik otdela truda i zarabotnoy platy Moskovskogo stroitel'no-montazhnogo tresta transportnogo stroitel'stva.