OSTROUKHOV, I.V.; IL'IN, V.G.

Roof caving at the No.1 K.Libkneht salt mine of the "Artemsol'" Mining Administration. Sbor.nauch.trud.UkrNIISol' no.6:18-25 '62. (MIRA 17:3)

OSTROUKHOV, I.V., gornyy inzh.

Rupture of irregular and regular shape rock samples. Sbor.nauch. trud.UkrNIISol' no.6:33-40 '62.

Cutting rock salt with the DKS-3M machine. Effect of the stressed state of the massif on the cutting process. Ibid.:41-52
(MIRA 17:3)

OSTROUKHOV, I.V.; SIDOROV, S.I.

Prospects of using self-propelled equipment in salt mines. Gor. zhur. no.4:22-25 Ap '64. (MIRA 17:4)

1. Ukrainskiy nauchno-issledovatel'skiy institut solyanoy promyshlennosti, g. Artemovsk.

ZHEREBIN, B.N.; MISHIN, P.P.; KUDOYAROV, M.S.; SUKHENKO, S.I.; RASKIN, V.Z.; OSTROUKHOV, M.Ya.; RAKOV, V.V.

Experimental blast furnace smelting using coke from large-capacity coke ovens. Koks i khim. no.2:23-29 '64. (MIRA 17:4)

1. Kuznetskiy metallurgicheskiy kombinat (for Raskin). 2. Chelyabinskiy institut stali (for Ostroukhov). 3. Kuznetskiy filial Vostochnogo uglekhimicheskogo instituta (for Rakov).

KHOLZAKOV, V.I.; BRATCHENKO, V.P.; OSTROUKHOV, M.Ya.; LUKIN, P.G.; GAVRILYUK, L.Ya.

Effect of the shape of a blast furnace working area on the distribution of the gas flow. Metallurg 8 no.8:6-9 Ag '63. (MIRA 16:10)

BRATCHENKO, V.P.; KHOLZAKOV, V.I.; OSTROUKHOV, M.Ya.

Reduction and slag formation processes in blast furnaces during the smelting of Bakal and Sokolovka Sarbay ores. Izv. vys. ucheb. zav.; chern. met. 7 no.2:34-41 '64. (MIRA 17:3)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.

GORDINA, R.V.; OSTROUKHOVA, D.I.

Use of medicinals (pyramidon) to reduce the degree of reaction to the pertussis-diphtheria-tetanus vaccine; author's abstract. Zhur. milkrobiol. epid. i immun. 31 no. 4:135 Ap '60. (MIRA 13:10)

1. Iz Instituta epidemiologii i mikrobiologii imeni Gamalei AMN SSSR i Krasnodarskoy krayevoy sanitarno-epidemiologicheskoy stantsii.
(AMINOPURINE) (VACCINES)

OSTROUKHOVA, T.N., kand.biol.nauk

Structural and colloidal changes in blood plasma following nervous system injuries. Akt.vop.perel.krovi no.6:264-267 '58.
(MIRA 13:1)

(BLOOD PLASMA) (SHOCK)

OSTROUKHOVA, T.M., kand.biol.nauk

Change in the iron content of the blood serum in radiation sickness. Akt.vop.perel.krovi no.6:70-74 '58. (MIRA 13:1)

1. Radiobiologicheskaya laboratoriya Leningradskogo instituta pereli-vaniya krovi (zav. laboratoriyey - starshiy nauchnyy sotrudnik G.M. Murav'yev).
(RADIATION SICKNESS) (IRON IN THE BODY) (BLOOD)

OSTROMYSLENSKIY, I.

RT-1162 (New methods of preparing divinyl, isoprene, piperylene and dimethylerythrene)
Novye sposoby poluchenila divinila, izoprena, pipirilena i dimetileritrena.
ZHURNAL RUSSKOGO FIZIKO-KHIMICHESKOGO OBSHCHESTVA, 47(8): 1947-1978, 1915.

AZOS, S.; ARKF'YEV, A.; ARTAMONOV, I.; BABINA, I.; BEREGOVSKIY, V.; BLOZHKO, V.; BRAVERMAN, A.; BYKHOVSKIY, Yu.; VINOGRADOVA, M.; GALANKINA, Ye.; GIL'DENGERSH, F.; GLOBA, T.; GREYVER, E.; GORDON, G.; GUL'DIN, I.; GULYAYEVA, Ye.; GUSHCHINA, I.; DAVYDOVSKAYA, Ye.; DAMSKAYA, G.; DEKKACHEV, D.; YEVDOKIMOVA, A.; YEGUNOV, V.; ZABELYSHINSKIY, I.; ZAYDENBERG, B.; AZMOSHNIKOV, I.; ITKINA, S.; KARCHEVSKIY, V.; KLUSHIN, D.; KUVINOV, Ye.; KUZNETSOVA, G.; KURSHAKOV, I.; LAKERNIK, M.; LEYZEROVICH, G.; LISOVSKIY, D.; LOSKUTOV, F.; MALEVSKIY, Yu.; MASLYANITSKIY, I.; MAYANTS, A.; MILLER, L.; MITROFANOV, S.; MIKHAYLOV, A.; MYAKINENKOV, I.; NIKITINA, I.; NOVIN, R.; OGNEV, D.; OL'KHOV, N.; OSIPOVA, T.; OSTRONOV, M.; PAKHOMOVA, G.; PETKER, S.; PLAKSIN, I.; PLETENEVA, N.; POPOV, V.; PRESS, Yu.; PROKOF'YEVA, Ye.; PUCHKOV, S.; REZKOVA, F.; RUMYANTSEV, M.; SAKHAROV, I.; SOBOL', S.; SPIVAKOV, Ya.; STRIGIN, I.; SPIRIDONOVA, V.; TIMKO, Ya.; TITOV, S.; TROITSKIY, A.; TOLOKONNIKOV, K.; TROFIMOVA, A.; FEDOROV, V.; CHIZHIKOV, D.; SHEYN, Ya.; YUKHTANOV, D.

Roman Lazarevich Veller; an obituary. TSvet. met. 31 no.5:78-79 My '58. (MIRA 11:6)

(Veller, Roman Lazarevich, 1897-1958)

OSTROUMOV, B.A. (Leningrad)

The V.I. Lenin Radio Laboratory in Nizhniy Novgorod. Vop.ist. est. i tekh. no.11:105-107 '61. (MIRA 14:11)
(Gorkiy—Radio research)

S/075/63/018/001/004/010
E071/E452

AUTHORS: Ostroumov, E.A., Volkov, I.I.

TITLE: The use of cinnamic acid in analytical chemistry Communication 3. The separation of indium and gallium from manganese, nickel, cobalt and zinc

PERIODICAL: Zhurnal analiticheskoy khimii, v.18, no.1, 1963, 52-57

TEXT: A new method for quantitative precipitation of indium and gallium by cinnamic acid which permits their separation from manganese, nickel, cobalt and zinc was developed. Ammonium cinnamate quantitatively precipitates indium and gallium from weak acid solutions on heating, while manganese, nickel, cobalt and zinc remain in the solution. The precipitate formed, consisting of a mixture of two basic salts of gallium and indium, is easily filtered and washed. Sorption of manganese, nickel, cobalt and zinc (remaining in the solution) by the precipitate of basic salts is small, so that the separation can be done by a single precipitation. Sulphates and nitrates do not interfere. The experimental procedure is described in detail. There are 2 figures and 4 tables.

Card 1/2

S/075/63/018/001/004/010
The use of cinnamic acid ... E071/E452

ASSOCIATION: Institut okeanologii AN SSSR, Moskva
(Institute of Oceanology AS USSR, Moscow)

SUBMITTED: May 16, 1962

✓

Card 2/2

S/169/62/000/005/059/093
D228/D307

AUTHORS: Ostroumov, E. A. and Volkov, I. I.

TITLE: Separation of iron, aluminum and chromium from manganese, nickel, cobalt and zinc by means of cinnamic acid

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 5, 1962, 7, abstract 5V50 (Tr. In-ta okeanol. AN SSSR, 47, 1961, 150-158)

TEXT: A new method has been developed for the separation of iron, aluminum, and chromium from manganese, nickel, cobalt and zinc by means of cinnamic acid. On heating ammonium cinnamate iron, aluminum and chromium precipitate quantitatively from a weakly acid solution, while manganese, nickel, cobalt and zinc remain in solution. The composition of compounds, formed by cinnamic acid with trivalent iron, aluminum, and trivalent chromium under precipitation conditions, has been determined. Iron is deposited as a mixture of two basic salts, and the precipitate has a variable composition. Aluminum and chromium precipitate as basic salts of constant com-

Card 1/2

S/046/62/008/002/008/016
B104/B138

AUTHOR: Ostroumov, G. A.

TITLE: A spherical emitter, almost equivalent to a point-shaped explosion in air

PERIODICAL: Akusticheskiy zhurnal, v. 8, no. 2, 1962, 204 - 209

TEXT: Published solutions of nonlinear gas dynamics and numerical computations are used to study the properties of an acoustic emitter which, at a sufficient distance, will produce the same "weak" shock wave as a point explosion. In the initial stages the acoustic emitter expands according to the same power law (exponent 6/5) as the shock wave, although at a rate which is about 13.5 per cent that of a "strong" shock wave. The rate of volume expansion of the acoustic emitter gradually diminishes as its dimensions increase, becoming stabilized at a certain level. Hence the emitted wave has two phases: a leading phase with positive, and a lagging phase with negative, acoustic velocities. The absence of phases in the initial stages of a shock wave with negative acoustic velocities, is attributed to unilateral displacement of substance in the region of strong shock waves, due to thermal expansion of the central region round

Card 1/2

OSTROUMOV, G.A.

Some characteristics of the propagation of solitary waves of moderate intensity. Akust.zhur. 8 no.3:344-349 '62. (MIRA 15:11)

1. Leningradskiy gosudarstvennyy universitet.
(Shock waves)

S/054/62/000/002/012/012
B117/B101

AUTHORS: Kel'nikov, N. P., Ostroumov, G. A., Shteynberg, A. A.

TITLE: Method of stabilizing spark discharges in water

PERIODICAL: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, no. 2, 1962, 157 - 158

TEXT: The delay of breakdown in water or salt solutions, which follows statistical laws, was investigated, as well as its avoidance applying an electrolyte solution. Shock waves were excited by capacitor discharge in water, and the delays of the breakdown was recorded with an oscillograph. Experiments in tap water ($\sigma = 6 \cdot 10^{-5}$ $ohm^{-1} \cdot cm^{-1}$; spark gap 1 mm) showed delays of about 1 - 5 μsec referred to the breakdown of air. Instead of using metal wire ("Exploding Wires". New York, 1959), rinsing of the lower electrode with a concentrated electrolyte solution, flowing out from the tubular upper electrode is proposed. Experiments with saturated sodium chloride solution revealed no delays in breakdown of the discharge space. Delays (shorter than those in fresh water) occurred in a 3.5% solution of sodium chloride solution in tap water without rinsing electrolyte. These

Card 1/2

S/035/62/000/005/095/098
A055/A101

AUTHOR: Ostroumov, G. A.

TITLE: Processing of the results of observations (a methodical remark)

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 5, 1962, 46, abstract 5G221 ("Uch. zap. Permsk. un-t", 1961, 19, no. 3, 3 - 8)

TEXT: This article is a summary of some problems concerning the theory of errors. It is pointed out that the theory of errors can be applied to the processing of measurements of physical and chemical quantities to which the term "true value" cannot be applied in its usual sense (for instance, the atomic weight of chlorine, equal to 35.457).

O. Sh.

[Abstracter's note: Complete translation]

Card 1/1

SHAKHNOVSKIY, M.A., kand.tekhn.nauk; OSTROKOV, M.Kh., inshener.

Some problems in reverberatory furnace smelting of copper. (MIRA 10:10)
TSvet.met. 27 no.5:40-46 S-O '54.

1. Giprotsvetmet.

(Copper--Metallurgy)

OSTROPOLETS, [illegible]

Ostropolets, [illegible] "[illegible] of treatment of [illegible] joints in [illegible] fones after [illegible]," [illegible] issle[illegible]. In-t ortope[illegible] traumatologii [illegible]

So: U-3566, 1[illegible] March [illegible], [illegible]

OSTROPOL'SKIY, A.N.

Organization of over-all planning departments at planning institutes. Neft. khoz. 35 no.5:51-52 My '57. (MLRA 10:6)
(Petroleum industry)

93-5-13/19

AUTHOR: Ostropol'skiy, A. N.

TITLE: How to Organize Departments of Over-all Designing in the Designing Institutes (K voprosu organizatsii otdelov kompleksnogo proyektirovaniya v proyektnykh institutakh)

PERIODICAL: Neftyanoye Khozyaystvo, 1957, Nr 5, pp. 47-52 (USSR)

ABSTRACT: Brief reference is made to articles written by Ye. N. Nasanov, I. Ye. Mindlin and S. K. Lalabekov in the 1956 issues of Neftyanoye Khozyaystvo on the subject of organization of departments of over-all planning in the designing institutes. On the basis of experience with an Ukrgiprogaz (Ukrainian State Institute for the Design and Planning of Synthetic Liquid Fuel and Gas Plants) department of over-all design, the following organizational structure is proposed. In the departments of over-all designing the chief engineer is a specialist. This department should consist of various groups of specialized designers. The institute should also have a technical - economic department of general estimates, a department of records, an engineering department,

Card 1/3

How to Organize Departments of Over-all Designing (Cont.)

a department of engineering research, a planning department and sometimes a department of over-all design of trunk pipelines. Complex requirements of modern technology call for concentration of specialists in one place and not for their dispersal in various specialized departments. Such reorganization can be made provided the designers are highly qualified and experienced men. The chief engineer participates actively only in the department of over-all designing where his influence can be felt, whereas the present setup does away with personal responsibility for the course of designing. The department of the over-all designing has an organizational advantage since there is no longer a need for issuing assignments and for intra-departmental coordination. As a result, this department effects great economy in manpower and man hours. The basic designing decisions made by the department are a result of collective deliberations. Should the project be large, it may be handled by two departments of over-all designing, the chief engineer of one of them being appointed as the director of the project, the other chief being his assistant. The department of engineering research organizes

How to Organize Departments of Over-all Designing (Cont.)

the basic data and turns them over to the department of over-all design. The records department handles all work connected with the transmittal of letters, blueprints, revisions, etc. The planning department prepares all plans, graphs, estimates, and accounts. The above proposals are based on four years of experience of several organizations in the Ukraine. The existing institutes of designing are hesitant to reorganize their organizational set-up for fear that it might reflect adversely on the work tempo and that they might be unable to fulfill their annual plans. This however, should not deter the designing institutes from reorganizing and every support should be given them in this endeavor. There are four Slavic references.

AVAILABLE: Library of Congress

Card 3/3

GOLOVACHIK, I.P.; OSTROPOL'SKIY, A.N.; KRIVOKHIZHA, M.T.

Graphic method for designing and selecting regulating valves. Gaz. prom. no.4:31-33 Ap '57. (MLRA 10:5)
(Valves)

OSTROPOL'SKIY, M. P.

USSR (60)

Electric Currents - Grounding; Dynamos

Operation of protecrive devices against ground short circuit of generators. Elek. Sta. No. 1, 1952. Inzh. Kharkovenergo

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

GORLOV, G.V.; GOKHBERG, B.M.; MOROZOV, V.M.; OSTROSHCHENKO, G.A.

Measurements of the effective cross section for the reaction $Li^6(n,t)He^4$ in the neutron energy range of 9 to 700 Kev. Dokl. AN SSSR 111 no.4:791-794 D '56. (MIRA 10:2)

1. Predstavleno akademikom A.P.Aleksandrovym.
(Nuclear reactions) (Neutrons)

OSTROUKH, N.P.

Poisoning of ducks by belladonna seeds. Veterinariia 33 no.9:69 S '56.
(MLRA 9:10)

1.Starshiy veterinarnyy vrach Belogorskoy Mashinno-traktornoy stantsii no.2, Krymskoy oblasti.
(Belladonna--Toxicology) (Ducks--Diseases)

120-6-30/36

AUTHORS: Otroshchenko, V.A., Sviridov, V.A., Tolstov, K.D., and Shal'nikov, A.I.

TITLE: Solid Hydrogen Targets on the Surface of Photographic Emulsions (Tverdyye vodorodnyye misheni na poverkhnosti fotoemul'sii)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.6, pp. 110 - 111 (USSR).

ABSTRACT: It is difficult to study interactions between elementary particles and protons and deuterons which are included in nuclear emulsions because their number is small compared with the total number of nucleons bound in the nuclei of the emulsion. This is still true even when the emulsion is specially loaded with deuterium and hydrogen. To remove this difficulty, it is convenient to have a target of solid hydrogen or deuterium deposited directly on the surface of the emulsion. In this method of preparation of targets the temperature of the emulsion cannot be greater than 12 to 15 °K. Because of this, the temperature dependence of the sensitivity of NIKFI-R emulsions was investigated (Ref.1). Already at 20 °K, the sensitivity of emulsion is down by a factor of 2 and therefore it is difficult to use this emulsion with minimum ionisation particles. However, different types of

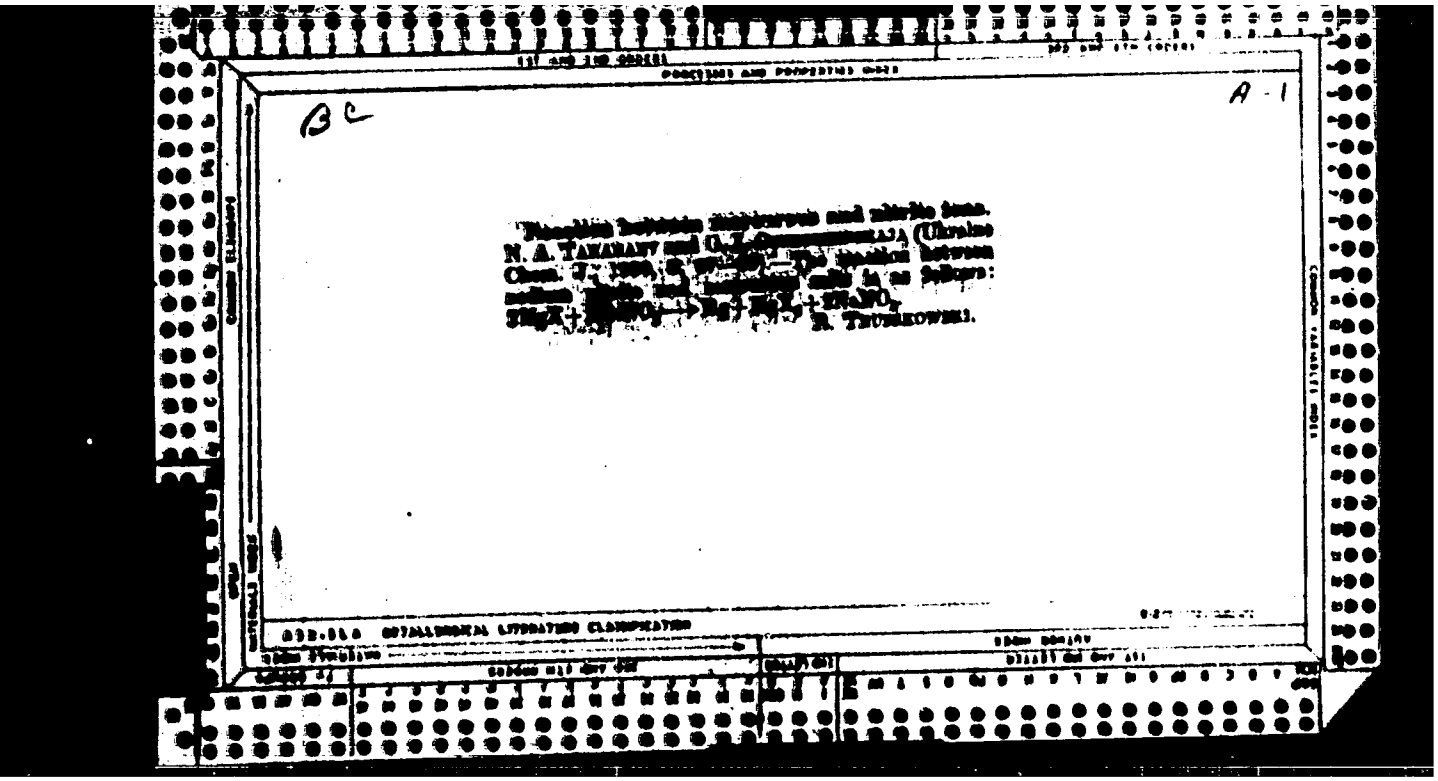
Card1/2

BL

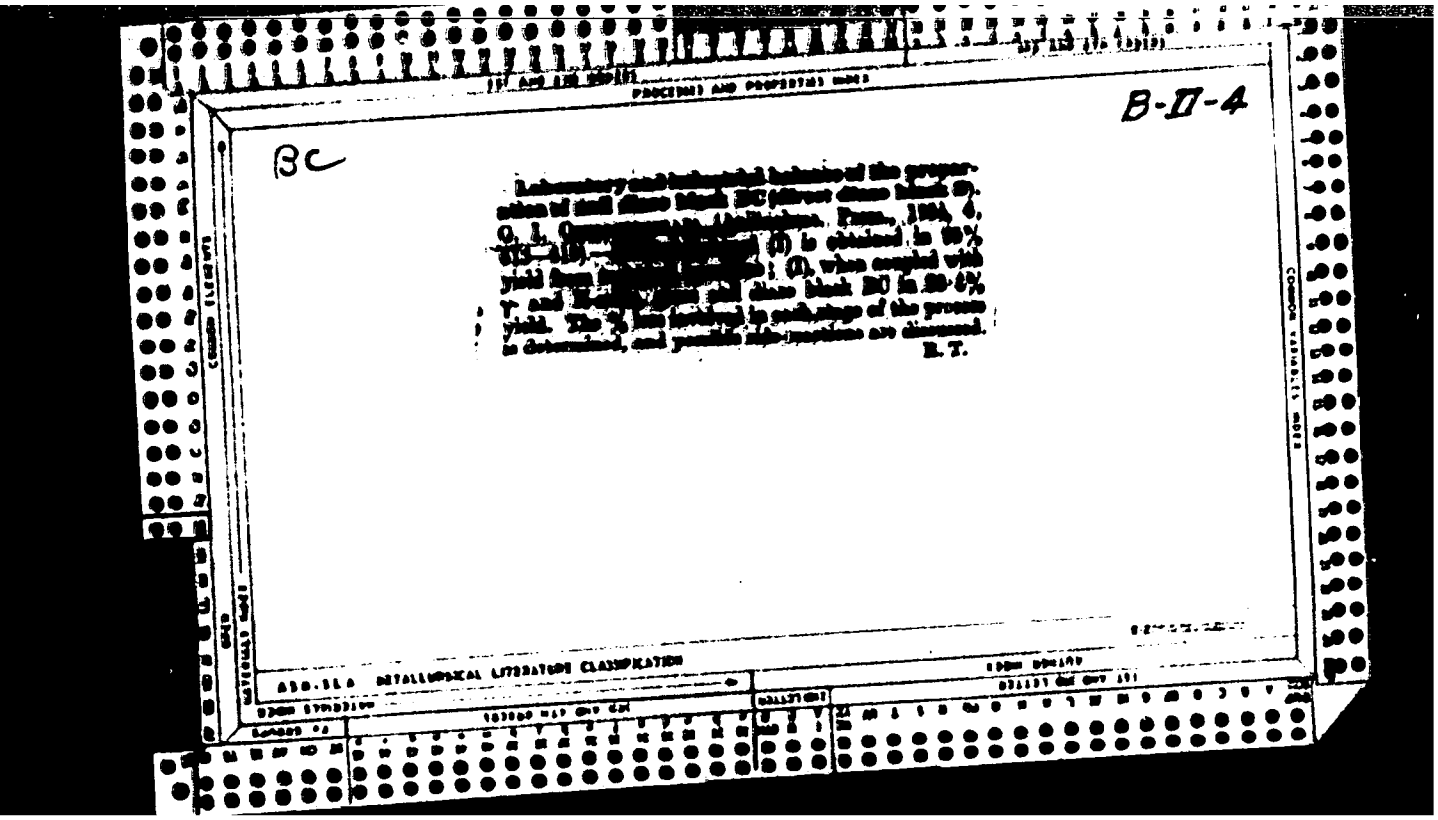
B-2-5

Selection of dyes for viscose silk. D. K[illegible] and G. [illegible] (Prom. Org. Chim., 1937, 3, [illegible]—400).—The results given by a series of dyes are presented. B. T.

METALLURGICAL LITERATURE CLASSIFICATION



APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238



PROCESSES AND PROPERTIES INDEX

Hydrolysis of the urea of J-acid. G. I. Ovse[illegible] and N. A. Kozlova (Anilinokras. Prom., 1932, 2, No. 10, 21—24).—The hydrolysis of the urea of J-acid to J-acid by warm aq. Na_2CO_3, which diminishes the yields of Benzo Fast Orange S and Aniline Scarlet 4BS obtainable from it, has been followed quantitatively by measuring the CO_2 evolved. No hydrolysis occurs at room temp.; the dry acid is stable at 100°.

G. A. R. K.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

BC

C-1

Preparation of Freund's acid from α-naphthylamine-3:6:8-trisulphonic acid. (U. I. Ostromislenskii.) (Anilinokras. Prom., 1935, 5, 138—143).—1:3:6-$NH_2·C_{10}H_5(SO_3H)_2$ (I) is obtained in 93% yield by boiling a mixture of 1:3:6:8-$NH_2·C_{10}H_4(SO_3H)_3$, aq. NaOH, and Zn dust for 7 hr. The dichloride of (I) has m.p. 169° (lit. 157°).

R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

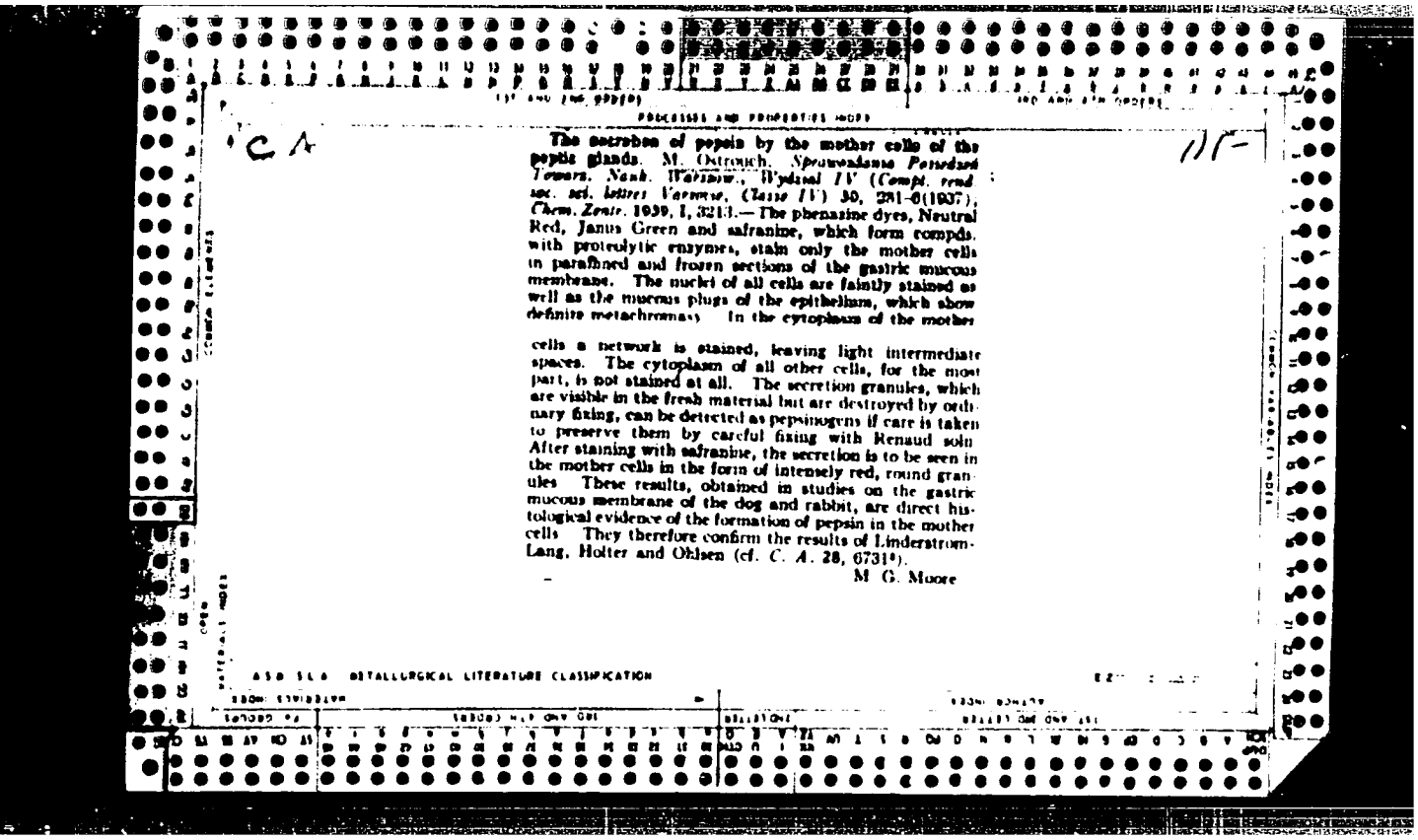
3RD AND 4TH ORDERS

βc

B-II-1

Rapid determination of 1:2:4-diazonaphthol-sulphonic acid and of certain of its derivatives. G. I. [illegible] (Anilinokras. Prom., 1934, 4, 368—371).—A modification of Gutmann's method (A., 1912, i, 307) is described. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

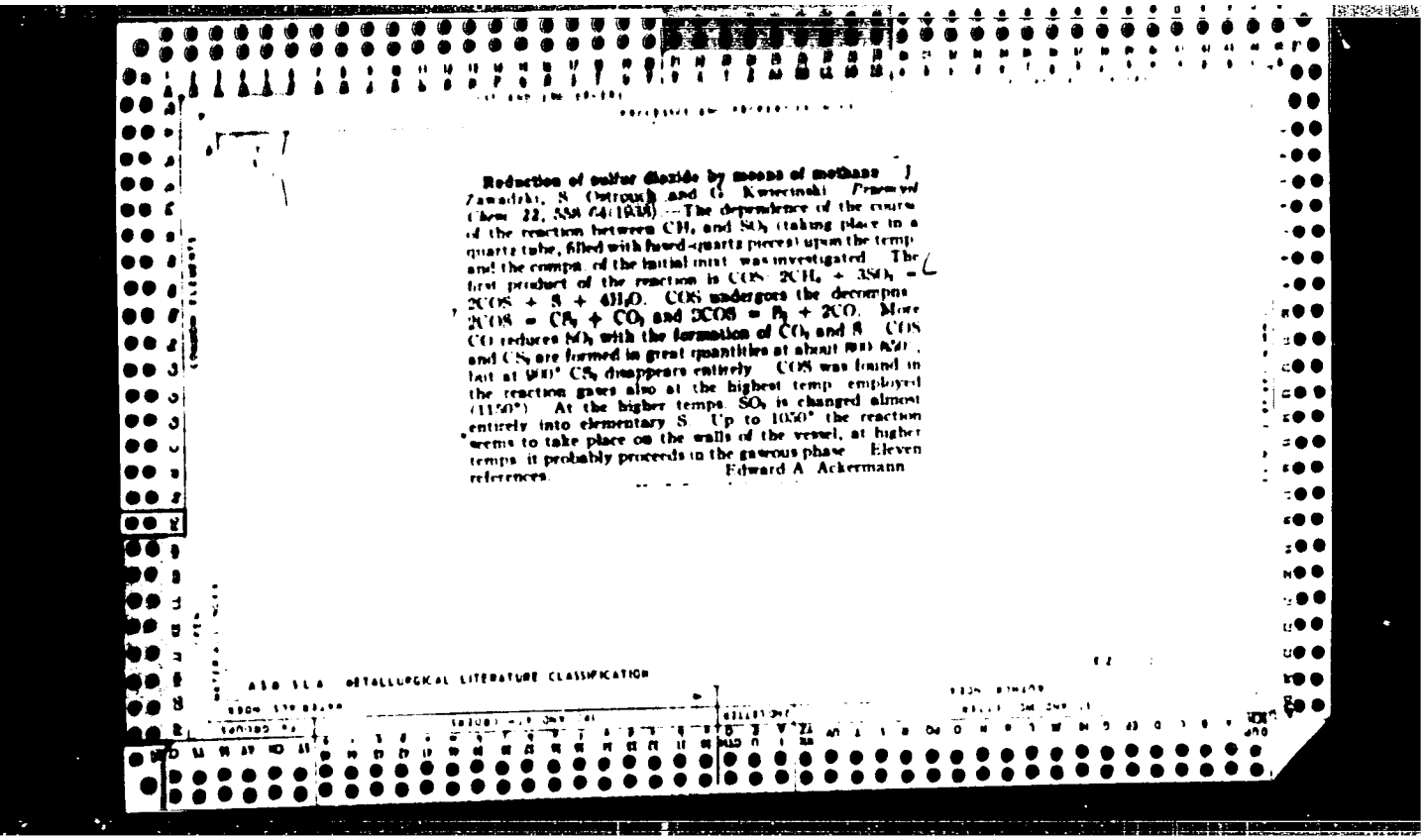


The secretion of pepsin by the mother cells of the peptic glands. M. Ostrouch. *Sprawozdania Posiedzeń Towarz. Nauk. Warszaw., Wydział IV (Compt. rend. séc. sci. lettres Varsovie, Classe IV)* 30, 281–6(1937); *Chem. Zentr.* 1939, I, 3211.— The phenazine dyes, Neutral Red, Janus Green and safranine, which form compds. with proteolytic enzymes, stain only the mother cells in paraffined and frozen sections of the gastric mucous membrane. The nuclei of all cells are faintly stained as well as the mucous plugs of the epithelium, which show definite metachromasy. In the cytoplasm of the mother cells a network is stained, leaving light intermediate spaces. The cytoplasm of all other cells, for the most part, is not stained at all. The secretion granules, which are visible in the fresh material but are destroyed by ordinary fixing, can be detected as pepsinogens if care is taken to preserve them by careful fixing with Renaud soln. After staining with safranine, the secretion is to be seen in the mother cells in the form of intensely red, round granules. These results, obtained in studies on the gastric mucous membrane of the dog and rabbit, are direct histological evidence of the formation of pepsin in the mother cells. They therefore confirm the results of Linderstrøm-Lang, Holter and Ohlsen (cf. *C. A.* 28, 6731⁹).

M. G. Moore

Reduction of sulphur dioxide by methane. J. ZAWADZKI, S. [illegible], and [illegible] KWIECIŃSKI (Przemysł Chem., 1938, 22, 558—564).—The following reactions take place when CH_4–SO_2 mixtures are passed through porcelain tubes packed with SiO_2:

$2CH_4 + 3SO_2 \rightarrow 2COS + S + 4H_2O$; $2COS \rightarrow 2S + 2CO$, $2COS \rightarrow CS_2 + CO_2$, $2CO + SO_2 \rightarrow S + 2CO_2$. CS_2 is not formed at >900°, and at >1000° only S is formed; small amounts of COS may be formed secondarily, by recombination of CO with S, in the cooler parts of the tube. R. T.



Reduction of sulfur dioxide by means of methane. J. Zawadzki, S. Ostrouch and G. Kwiecinski. *Przemysl Chem.* 22, 558-64 (1938). — The dependence of the course of the reaction between CH_4 and SO_2 (taking place in a quartz tube, filled with fused-quartz pieces) upon the temp. and the compn. of the initial mixt. was investigated. The first product of the reaction is COS: $2CH_4 + 3SO_2 = 2COS + S + 4H_2O$. COS undergoes the decompns. $2COS = CS_2 + CO_2$ and $3COS = P_2 + 2CO$. More CO reduces SO_2 with the formation of CO_2 and S. COS and CS_2 are formed in great quantities at about 900-50°, but at 950° CS_2 disappears entirely. COS was found in the reaction gases also at the highest temp. employed (1150°). At the higher temps. SO_2 is changed almost entirely into elementary S. Up to 1050° the reaction seems to take place on the walls of the vessel, at higher temps. it probably proceeds in the gaseous phase. Eleven references. Edward A. Ackermann

A 50 V L A METALLURGICAL LITERATURE CLASSIFICATION

Category: Serbo-Croatin (Jugoslavia)/General Physics
Congresses. Meetings. Conferences.

Abs Jour: Referat Zh.-Biol., No 6, 25 March, 1957, 21367

Author : Stankovich, A. Ostroilch, M.
Inst : not given
Title : European Conference on Problems of Plant Protection in Luxembourg.

Orig Pub: Zashtita bilja, 1956, 33, 108-11[illegible]

Abstract: The conference was held from September 6 to 10, 1955; 350 people were present; 14 sections participated: on toxicology, Phytopharmaceutical production, terminology, standardization of biological methods, on fungicide investigation, insecticides, rodenticides, section on biometry, and others. Special attention was aroused by Professor Trakhaut's report on investigation of factors enabling plant cancer and on measures for combating them.

-22-

Card : 1/1

OSTROMENTSKIY, N.M.

Baku conference on the exchange of experience in detailed geological mapping and prospecting. Sov. geol. 3 no.10:161-164 0'60. (MIRA 13:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya.
(Prospecting)

OSTROMENETSKIY, [illegible]. Ya.: Master Tech Sci ([illegible]) -- "Calculation of [illegible] frame and beam systems made of thin-walled elements". Moscow, 195[illegible]. [illegible] pp (Moscow Inst of Municipal Construction Engineers of the Moscow City Executive Committee), [illegible]

OSTROPOL'SKAYA, Ye.A., kand.med.nauk (Leningrad, ul. S.Perovskoy, d.14, kv.16); BELYANINA, T.S., kand.med.nauk

Perforated gastric ulcer in newborn. Vest. khir. 80 no.2:102-104 F '58. (MIRA 11:3)

1. Iz Leningradskoy detskoy bol'nitsy im. Pastera (gl. vrach-A.N. Aksenova, zav. khir.otd.-I.Ya.Podoprigora)
(PEPTIC ULCER, in inf. & child
perf. in newborn (Rus)
(INFANT,NEWBORN, dis.
peptic ulcer perf. (Rus)

FIALKOV, Yu.; OSTROMOUKHOV, M.

Method of calculating technically based standards for unit-operation processes. Sots. trud 5 no.6:74-78 Je '60. (MIRA 13:11)
(Dyes and dyeing--Production standards)

L 7284-66 EWT(l)/EWP(m)/EWA(d)/FCS(k)/EWA(h)/EWA(c)/ETC(m)/EWA(l) WW
ACC NR: AP5028050 SOURCE CODE: UR/0046/65/011/004/0458/0462

AUTHOR: Korobeynikov, V.P.; Ostroumov, G.A. 44,55 44,55 44,55

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet); Institute of Mathematics, AN SSSR, Moscow (Matematicheskiy institut AN SSSR) 44,55

TITLE: More on cavitation disintegration

SOURCE: Akusticheskiy zhurnal, v. 11, no. 4, 1965, 458-462 1,44,55 1,44,55

TOPIC TAGS: cavitation, fluid flow, gas flow, shock wave propagation, shock wave

ABSTRACT: One of the main reasons for the cavitation disintegration of the surfaces of solids in contact with a moving fluid is the bursting of the gas bubbles which adhere to the boundary of separation. As a result of this phenomenon there is an explosion which is microscopic in dimension but huge in intensity on the boundary between the solid surface and the fluid. In this case the pressures and forces which cause disintegration are so high that the solids behave basically as fluids. This paper investigates the processes which accompany the propagation of a strong shock wave in two contiguous fluid semispaces. It is assumed that the source of the shock wave is an explosion at a point on the surface of separation of the two media. An example is presented of an approximate calculation of the distribution of energy between the media with adiabatic indexes $\gamma = 4$, $\gamma = 5$, and $\gamma = 7$. An investigation is also made, in the framework of the model used in the present study, of the kinematics of subsequent deformations of the substance of a solid wall. Orig. art. has: 1 figure, 11 formulas, and 3 tables.

Card 1/2 UDC: 534.29/532.528

L 7784-66

ACC NR: AP5028050

SUB CODE: GP, ME / SUBM DATE: 24May64 / ORIG REF: 012

nw

Card

KOROLEVA, S.N.; OSTROUMOV, G.A.

Application of electroosmosis for the imbibition of soils and grounds. Koll. zhur. 27 no.5:705-714 S-O '65. (MIRA 18:10)

1. Leningradskiy universitet, kafedra radiofiziki.

BAIROV, G.A., prof.; OSTROPOL'SKAYA, Ye.A., kand.med.nauk

Congenital absence of muscles of the anterior abdominal wall in children. Vest. khir. 93 no.12:83-88 D '64. (MIRA 18:5)

1. Iz kafedry detskoy khirurgii s ortopediyey (zav. - prof. G.A.Bairov) Leningradskogo pediatricheskogo meditsinskogo instituta (rektor - dotsent Ye.I.Semenova).

S/273/63/000/002/002/010
A052/A126

AUTHORS: Křivan, Zdeněk, Čadek, Otto, Kratochvil, Maximilian, Kliment, Vladimír, Svátek, Jiří, Janutka, Josef, Ostrouchov, Mikuláš

TITLE: Internal combustion engine with supercharged turbocharger

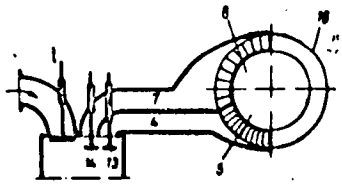
PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk, 39. Dvigateli vnutrennego sgoraniya, no. 2, 1963, 11 - 12, abstract 2.39.77 P (Czech. pat., cl. 46f, 5/03, 46f, 8/02, no. 98178, January 15, 1961)

TEXT: To better utilize the energy of exhaust gases it is proposed to supply them in two streams 4 and 7 (see Fig.) to the guiding apparatus of the gas turbine 16, the blades of which have such a form in each of two sections 5 and 8 that the circumferential components of gas velocities are equal. In a 4-cycle engine, 2 exhaust valves 13 and 14 are mounted; the valve 14 opens later than the valve 13. A variant of an engine with an outlet slide valve instead of two valves is described as well as a variant of a 2-cycle engine with two channels connected to the outlet ports. There are 2 figures.

Card 1/2

Internal combustion engine with supercharged S/273/63/000/002/002/010
A052/A126

Figure



A. Zhukov

[Abstracter's note: Complete translation]

Card 2/2

OSTROUKHOV, I.V., inzh.

Study of the cutting of rock salt with a disk cutter. Nauch. soob. Inst. gor. dela 4:78-88 '60. (MIRA 15:1)
(Rock salt) (Mining machinery--Testing)

WIELGOSZ, Z.; OSTROUCH, S.

Technological progress in the Tomaszow Synthetic Fibers Works.
Przem chem 41 no.7:406-407 Jl '62.

OSTROUCHOV, M.

"Main problems encountered in the operation of four-stroke oil engines and turbo-blowers for higher pressures."

Czechoslovak Heavy Industry. Prague, Czechoslovakia. No. 2, 1959.

Monthly list of East European Accessions (FFAI), LC, Vol. 8, No. 6, Jun 59, Unclas

ACHARKAN, V.A.; BARSKOV, I.M.; BIRYUKOV, I.S.; BORODINA, L.Ya.; BRENNER, M.M.; GORELIK, B.Ye.; GUMEROV, M.N.; ZORKAYA, N.M.; IOFFISH, A.I.; KAYDALOVA, O.N.; KAPUSTIN, Ye.I.; LEBEDEVA, M.A.; LESHKOVTSEV, V.A.; LYSENKO, V.P.; MARKIN, A.B.; MIKHAYLOV, N.N.; NEST'YEV, I.V.; NECHAYEV, N.V.; NIKOL'SKIY, A.V.; OSTROUKHOV, M.Ya.; PISARZHEVSKIY, O.N.; POLUBOYARINOV, M.M.; POPOV, Yu.N.; PRASOLOV, M.A.; POKATAYEV, Yu.N.; RIMBERG, A.M.; RYABOV, V.S.; SEMKOV, B.F.; SPERANSKAYA, Ye.A.; TAKOYEV, K.P.; TRIFONOVA, G.K.; TROFIMOVA, V.I.; SHAKHNAZAROV, G.Kh.; SHKARENKOVA, G.P.; SHMERLING, K.G.; EYDEL'MAN, B.I.; MIKAELYAN, E.A., red.; MUKHIN, Yu.A., tekhn.red.

[U.S.S.R. as it is; a popular illustrated handbook] SSSR kak on est'; populiarnyi illiustrirovannyi spravochnik. Moskva, Gos.izd-vo polit. lit-ry, 1959. 462 p. (MIRA 12:2)

(Russia)

Ostronov, M. Kh.

137-58-5-9356

Translation from Referativnyy zhurnal Metallurgiya, 1958 Nr 5, p 79 (USSR)

AUTHORS Ostronov, M. Kh., Soltanov, V. N.

TITLE A Vacuum Method of Cooling Zinc Electrolyte (Vakuumnyy spo-sob okhlazhdeniya tsinkovogo elektrolita)

PERIODICAL Byul. Tsentr. in-t inform. M-va tsvetn. metallurgii SSSR, 1957 Nr 3, pp 21-27

ABSTRACT The authors point out the advantages of vacuum cooling of Zn electrolyte as compared with existing methods. The calculations of a centralized vacuum cooling system for a Zn electrolyte are shown.

G. S.

Card 1/1

OSTROUKH, N. P. (Director of the Bogotov Veterinary Section), SUKHORUKOV, V. I. and MUSINOV, S. S. (Veterinary Medical Assistants) and VOZMITEL', V. M. (Veterinary Doctor, Belogorsk District, Crimean Oblast').)Abstracted by NOSKOV, A. I.)

"Experimental prophylaxis for herpes tonsurans", 1960....
Veterinariya, vol. 39, no. 3, March 1962 pp. 27

S/137/62/000/003/053/[illegible]
A006/A101

AUTHORS: Kh[illegible]iz[illegible]kov, V. I., Ostr[illegible]khov, M. Ya., Kopyrin, I. A., Vyatk[illegible], [illegible], Tarashchuk, N. T., Filipov, Yu. P., Nikol'skiy, M. A., Lap[illegible], V. F., Chistyakov, A. Ye., Pimenov, L. I.

TITLE: Experimental blast-furnace melting of oxidized nickel ores on matte

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 28, abstract 3G18[illegible] ("Sb. nauchno-tekhn. tr. N.-i. in-t metallurgii Chelyab. sovnarkhoza", 1961, no. 3, 164 - 170)

TEXT: During 5 months experimental melting of Ni-ore sinter and lumps (coarse fraction) on matte was carried out in a 6.4-m² blast furnace. The following statements were made: coke consumption is by about 20 - 25% less than in melting in a shaft furnace operating on compressed air on account of preheated blast and fuller utilization of the heat in the furnace; the SiO_2 content can be raised up to 49%. The temperature of exhaust gases is 40 - 60°C. The deficiencies of a blast furnace are: the necessity of using only well lumped charges; 0 - 5[illegible] fraction must be screened off before charging into the furnace; the hearth and

Card 1/2

S/137/62/000/003/153/191
A006/A101

Experimental blast-furnace melting...

the bosh of the furnace should be operated on compressed air. See also RZhMet, 1961, 10203, 30193.

A. Tseydler

[Abstracter's note: Complete translation]

Card 2/2

VYATKIN, G.P.; ZHILO, N.L.; OSTROUKHOV, M.Ya.

Viscosity of high-magnesium iron slags. [Sbor. trud.] Nauch.-issl. inst. met. no.4:26-32 '61. (MIRA 15:11)
(Slag)
(Viscosimetry)

OSTROUKHOV, M.Ya.; PANCHENKO, S.I.; Prinimali uchastiye: FRISHBERG, V.D.; PETROV, V.K.; RESHETKO, A.; VYATKIN, G.P.; BRATCHENKO, V.P.; FOFANOV, A.A.; MILYAYEV, M.N.; PRIVALOV, V.Ye.; MUSTAFIN, F.A.; PUSHKASH, I.I.; LAZAREV, B.L.

Experimental blast furnace smelting using coke from wet preparation coals. [Sbor. trud.] Nauch.-issl.inst.met. no.4:63-70 '61. (MIRA 15:11)

1. Vostochnyy uglekhimicheskiy institut (for Ostroukhov, Panchenko, Frishberg, Petrov, Reshetko). 2. Nauchno-issledovatel'skiy institut metallurgii (for Vyatkin, Bratchenko). 3. Nizhne-Tagil'skiy metallurgicheskiy kombinat (for Privalov, Mustafin, Pushkash, Lazarev).

(Blast furnaces—Testing)
(Coke—Testing)

VYATKIN, G.P.; OSTROUKHOV, M.Ye.; Prinimali uchastiye: KHOLZAKOV, V.I.; KOPYRIN, I.A.; TARASHCHUK, N.T.; FILIPPOV, Yu.P.; NIKOL'SKIY, M.A.; CHISTYAKOV, A.Ye.; PIMENOV, L.I.

Investigating the process of blast furnace smelting for the production of nickel matte. [Sbor. trud.] Nauch.-issl.inst.met. no.4:71-81 '61. (MIRA 15:11)

(Nickel—Metallurgy)
(Blast furnaces)

VYATKIN, G.P.; ZHILO, N.L.; OSTROUKHOV, M.Ya.

Viscosity of high-magnesium blast furnace slags with 10 to 20% ferrous oxide. Izv. vyn. ucheb. zav.; chern. met. 5 no.10:25-30 '62. (MIRA 15:11)

1. Nauchno-issledovatel'skiy institut metallurgii.
(Slag--Testing) (Viscosimetry)

POPOV, Yuriy Afrikanovich; OSTROUKHOV, M.Ya., kand.tekhn. nauk, red.; SVET, Ye.B., red.; KOLBICHEV, V.I., tekhn. red.

[Making high-silicon cast iron] Vyplavka vysokokremnistykh chugunov. Pod red.M.IA.Ostroukhova. Cheliabinsk, Cheliabinskoe knizhnoe izd-vo, 1961. 106 p. (MIRA 15:7)

1. Chelyabinskiy metallurgicheskiy zavod (for Popov).
(Cast iron—Metallurgy)

OSTROUKHOV, M.Ya.; TARASHCHUK, N.T.; FILIPPOV, Yu.P.; KHOLZAKOV, V.I.

Blast furnace smelting of oxidized nickel ores for the production of matte. TSvet.met. 34 no.9:82-83 S '61. (MIRA 14:10)
(Nickel--Metallurgy)

OSTROUKHOV, M.Ya.

Dimensions of the hearth, the number and parameters of tuyeres.
Metallurg 7 no.5:12-13 My '62. (MIRA 15:5)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.
(Blast furnaces—Design and construction)

KOPYRIN, I.A.; OSTROUKHOV, M.Ya.

Effect of the characteristics of gas flow on the reduction rate of iron oxides. Izv. vys. ucheb. zav.; chern. met. 4 no.8:24-30 '61. (MIRA 14:9)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii. (Iron--Metallurgy) (Gas flow)

S/120/62/000/001/051/061
E052/E314

24.7100

AUTHORS: Krest'yankin, V.D., Novikov, V.I. and Ostroumov, A.A.

TITLE: A cryostat for the study of the anisotropy of the galvanometric properties of crystals

PERIODICAL: Pribory i tekhnika eksperimenta, no. 1, 1962, 194 - 195

TEXT: The authors describe a cryostat which has been used to investigate the anisotropy of galvanometric properties of Bi_2Te_3 in the temperature range 4.2 - 300 °K. The device is shown in the figure. The specimen under investigation 1 is placed in a cylindrical thick-walled copper container 2, which carries three constantan wire heaters and a thermocouple. The main heater 3 is used to maintain the average temperature of the copper container. The other two heaters are independent of each other and are used to control the vertical temperature gradient. The copper container and the hermetic screen 4 are rigidly attached to the cap 5 by means of two coaxial thin-walled German-silver tubes forming a single hermetically-sealed

Card 1/3

A cryostat ....

double-walled container. The heat-transfer between the copper container and the cooling liquid (liquid He, liquid N) in the dewar 6 is regulated by adjusting the pumping speed in the space between the copper container and the screen. In order to ensure good thermal contact between the specimen and the liquid He, the cryostat is filled with gaseous He through a leak valve. The remaining components in the figure are as follows: 7 - vacuum tube; 8 - current leads; 9 - specimen-raising device; 10 - Wilson seal; 11 - graduated circle used to measure the angle of rotation of the specimen about the vertical axis; 12 - textolite specimen base; 13 - specimen contact block; 14 - lever used to rotate the specimen; 15 and 16 - vacuum seals; 17 - electrical contacts; 18 - siphon for removing liquid nitrogen which is used to precool the dewar prior to introduction of the liquid helium. The device has the following advantages: 1) temperature can be determined to within 0.1 °K; 2) it is possible to measure the angle between the current in a given crystallographic direction and the mutually perpendicular directions of the magnetic field and the temperature gradient;

Card 2/4

A cryostat ....

3) the specimens can be easily and rapidly replaced without demounting the apparatus, and 4) the magnitude and sign of the vertical temperature gradient at the specimen can be adjusted. There is 1 figure.

ASSOCIATION: Institut poluprovodnikov AN SSSR
(

SUBMITTED: June 17, 1961

Card 3/4

YEFIMOVA, B.A.; KORENBLIT, I.Ya.; NOVIKOV, V.I.; OSTROUMOV, A.G.

Anisotropy of the galvanomagnetic properties of p-Bi_2Te_3.
Fiz. tver. tela 3 no.9:2746-2760 S '61. (MIRA 14:9)

1. Institut poluprovodnikov AN SSSR, Leningrad.
(Bismuth telluride--Magnetic properties)

OSTROUMOV, A.G.

Wintering of some birds in Kamchatka. Biul MOIP. Otd. biol. 66 no.6:151-153 N-D '61. (MIRA 14:12)

(KAMCHATKA--BIRDS)

OSTROUMOV, B.A. (Leningrad)

Meeting dedicated to the memory of M.F.Romanova. Vop.ist.est.i tekh. no.12:242 '62. (MIRA 15:4)
(Romanova, Mariia Fedorovna)

OSTROUMOV, N., general-leytenant aviatsii

On voluntary basis. Av.i kosm. 45 no.10:78-80 '62. (MIRA 15:10)
(Technical education) (Russia—Air Force)

OSTROUHOV,V.

OSTROUHOW, V. Heat protection by heat resistance of electric motors with alternating current.

Vol. 6, No. 1, April, 1955 NOVA PROIZVODNJA

SO: Monthly List East European Accessions (EEAL), LC, Vol. 5 No,3

OSTROUMOV, V.

Use of atomic energy for peaceful purposes. p. 200
NOVA PROIZVODNJA. Ljubljana.
Vol. 6, no. 3, Aug. 1955

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, no. 2, February 1956

DAROVSKIKH, V.F.; MAKAROV, M.M.; OSTROUMOV, V.I.

Observation of the decay of a B^{9} nucleus in a nuclear emulsion. Dokl. AN SSSR 141 no.3:593-594 N '61. (MIRA 14:11)

1. Radiyevyy institut im. V.G. Khlopina AN SSSR. Predstavleno akademikom B.P. Konstantinovym.

(Particle track photography)

OSTROUHOV, V.

"Marked atoms" in technology. Tr. from the Russian. p. 208.
NOVA PROIZVODNJA. Ljubljana.
Vol. 6, no. 3, Aug. 1955

SOURCE: East European Accessions List (EEAL), Vol. 5, no. 2,
February 1956, bC

OSTROUHOV, V.

Electromechanical treatment of metals. Tr. from the Russians p. 211
NOVA PROIZVODNJA. Ljubljana.
Vol. 6, no. 3, Aug. 1955

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, no. 2
February 1956

OSTROUHOV, V.

Fluorography of animals. Tr. from the Russian. p. 212
NOVA PROIZVODNJA. Ljubljana.
Vol. 6, no. 3, Aug. 1955

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, no. 2,
Feb. 1956

OSTROUHOV, V.

Floruine [illegible] stic masses. p. 71. [illegible]
(Uprava za napredek v [illegible]) Ljubljana, Vol. 7,
no. 1, Mar. 1956

[illegible]: East Europe Accession List (EEAL),
Library of Congress, Vol. [illegible], no. 11, [illegible]

OSTROUHOV, V.

Pumps for concrete p. 71. NOVA PROIZVODNJA (Uprava za napredek v proizvodnjini) Ljubljana, Vol. 7, no. 1, Mar. 1956

SOURCE: East Europe Accession Lists (EEAL), Library of Congress, Vol. 5, no. 11, Nov. 1956

OSTROUKHOV, A.A.; TOMASEVICH, O.F. [Tomasevych, O.F.]

Absorption of light by F'-centers in ionic crystals with a cuboidal lattice [with summary in English]. Ukr.fiz.zhur. 3 no.4:449-454 Jl-Ag '58. (MIRA 11:12)

1. Kiyevskiy gosudarstvennyy universitet.
(Crystal lattices) (Color) (Absorption of light)

89269

S/181/61/003/001/001/042
B102/B212

26.2531

AUTHOR: Ostroukhov, A. A.

TITLE: Theory of unsteady thermionic emission of a semiconductor cathode

PERIODICAL: Fizika tverdogo tela, v. 3, no. 1, 1961, 3-14

TEXT: The present paper follows two previous studies (Refs. 1, 2) which dealt with the theoretical investigation of problems of thermionic emission from semiconductor cathodes. The author has mainly investigated the equations of motion and the current-time characteristics which are valid for volume and surface concentrations. Here, he presents the solution of nonlinear equations for the case where the relaxation time T_r is much smaller than the volume recombination time T_o ($A = T_r/T_o \ll 1$), and also the effective time of change of the surface charge. In this case, called the "volume case", electron (m_1) and hole (m_2) concentration on the surface levels and the conduction-electron concentration n_1 promptly follow changes of the field and of the hole concentration n_2 at the volume donors. In Ref. 2 the time

Card 1/4

dependence of the thermal current $\lambda(\tau)$ has been determined in a quasi-steady approximation by a numerical integration of a system of equations, taking concrete values for their parameters; $\lambda(\tau)$ is now calculated from a complete system of equations for a problem with one integro-differential equation for n_1, which is solved approximately by the method of least squares. Also, the effect exerted by adsorption and desorption of atoms of the surface of semiconductors during a current pulse upon the amount of the surface charge and the current is studied. The authors confine themselves to a special case where the lifetime of atoms in the adsorbed state is much shorter than the time necessary for the displacement of heavy particles (e.g., donors) in the cathode volume over a distance of the order of the shielding length $1/\kappa$. This assumption makes calculation in the "volume case" possible without making any concrete assumptions about the nature of surface and volume impurity atoms. First, the volt-ampère characteristic of the cathode is determined for the "volume case" at the start and end of a long anode-voltage pulse. The volt-ampère characteristics of the cathode are diagrammatically shown for $\tau \simeq 0$ and $\tau = \infty$. A family of lines with different inclinations is obtained for different values of μ (μ denotes the equilibrium ionization of volume donors). From

the distance between these lines it is concluded that under otherwise equal conditions the maximum current will be obtained if no surface levels exist, and the minimum current in the volume case will occur if the change of concentration and current during a pulse is due to a slow change in time of the hole concentration at the volume donors. The largest current oscillations appear in the quasi-steady case. The following section deals with a variational estimate of the duration of the current decrease, i.e., a complete solution of the system of equations in Ref. 1. The following equation has been found for $\lambda(\tau)$:

$$\lambda = \frac{1}{\epsilon}\left[y_{v.0}(\lambda,\lambda_s) + \epsilon_0\beta(z_2 - \nu z_1)\right] + \int_0^\infty \left[N_2(\xi,\tau) - N_1(\xi,\tau)\right] d\xi,$$

where $\xi = \varkappa x$ is a dimensionless length; $N_i = n_i/n_0$, n_0 being the equilibrium concentration of conduction electrons for $x = \infty$, $z_i = m_i/\mathfrak{M}_i$, the dimensionless electron ($i=1$) and hole concentration ($i=2$), respectively, for the surface levels with concentrations of $\mathfrak{M}_1$ and $\mathfrak{M}_2$, respectively. $\beta_0 = \varkappa\mathfrak{M}_2/n_0$; the reduced field $y_{v.0}$ is a known function of λ and λ_s given in Ref. 2. The last part

of the paper deals with the effect of adsorption and desorption of impurity atoms of the cathode surface on the decrease of the current pulse. As in section 2, three different instants are considered, which are related to processes on the working cathode. The first instant is related to the motion of heavy particles; the second, to the lifetime of the impurity atoms on the semiconductor surface; and the third, to purely electronic transitions (recombination effects etc.). With the help of some restrictions and simplifications, several relations are obtained. It is found that the adsorption and desorption of impurities on the surface increase the effect of a current decrease in the pulse. The author thanks K. B. Tolpygo for suggestions and interest, and I. M. Dykman for comments. There are 1 figure and 2 Soviet-bloc references.

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet (Kiyev State University)

SUBMITTED: March 1, 1960

30439
S/109/61/006/012/014/020
D246/D305

9,3120 (1003, 1138, 1140, 1331)

AUTHOR: Ostroukhov, A.A.

TITLE: Influence of thermo-emission current on the temperature conditions of a semiconductor cathode

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 12, 1961, 2063 - 2072

TEXT: The author investigated theoretically the influence of cooling and warming of the cathode surface by emitted current for pulsed emission characteristics. Although an approximate theory by S.V. Ptitsyn exists, new experimental facts occurred on the distribution and resistance of oxide surface for large currents and on the coefficient of its thermal conductivity. Therefore, the author works out a more exact theory which can be compared with experiment. For the case of quasi-stationary currents, when heat is conserved, the following equation holds:

$$\frac{\partial T}{\partial t} - a^2 \frac{\partial^2 T}{\partial x^2} - b \frac{\partial T}{\partial x} = F, \qquad (2)$$

Card 1/6

Influence of thermo-emission ...

where $a^2 = \frac{\varkappa_0}{\rho c}$, $b = \frac{l\tau}{\rho c}$, $F = \frac{l^2}{\rho c \sigma}$ (5)

ρ - surface density, c - specific heat, $\varkappa_0$ - coefficient of heat conduction; τ - Thomson coefficient, σ - specific electric conductivity. On the boundary of the semi-conductor layer and the substrate, (x = d), temperature, T_d - can be taken as constant. It is assumed also that on the boundary between the layer and the vacuum (x = 0) ($|\Delta T/T| \ll 1$, so the boundary condition can be written

$$\varkappa_0 \frac{\partial T}{\partial x}_{x=0} = k_0 + k_1 T_0 \quad (7)$$

where $k_0 = -3H + l\chi$, $k_1 = \frac{1}{T_0^0}(4H - n\frac{kT_0^0}{e} + l_1 H - r\sigma_0 T_0^{04})$ (8)

eχ - electron work-function, T_0^0 - temperature of the layer in the absence of current, r - effective coefficient of reflection, σ_0 - Stefan-Boltzman constant. The initial temperature distribution has

Card 2/6

Influence of thermo-emission ...

the form:

$$T(x, t)\big|_{t=0} = T^0(x) = T_0^0 + \frac{W}{\varkappa_0} x \ . \qquad (9)$$

Thus (2) can be solved, using the boundary conditions

$$T(x, t)\big|_{x=d} = T_d = \text{const.} \qquad (4)$$

(7) and (9). The solution has a stationary and a non-stationary part. For small currents, the cooling effects predominate. On surface x = 0, for sufficiently long anode voltage pulses, the maximum cooling is at $I_{min} \approx I_0/2$ where

$$I_0 = \frac{2\sigma}{d} \left(\chi - n \frac{kT_0^0}{e}\right) \qquad (19)$$

and

$$\Delta T_{\min} \simeq -\frac{\sigma}{2\varkappa_0}\left(\chi - n\frac{kT_0^0}{e}\right)^2 (1 + A)^{-1}. \qquad (20)$$

where $A = d/\varkappa_0 T_0^0 \ (4W - n\ kT_0^0/e\ \ I)$. For small pulse lengths, i.e.

Card 3/6

Influence of thermo-emission ...

$$z^{\frac{1}{2}} = \frac{a\sqrt{t}}{d} \ll 1 \qquad (21)$$

using operational methods, the author derives a complicated expression for T(x, t). Then

$$t_{\min} = \frac{\rho c d^2}{\pi \varkappa_0} \left(I \frac{d}{3}\right)^{-3} \left(\chi - n \frac{kT_0^2}{e}\right)^3 (1 + B)^{-3}. \qquad (28)$$

where

$$B = \left(I \frac{d}{3}\right)^{-1} \left[H\left(\chi - n \frac{kT_0^2}{e}\right) + \frac{Wd}{\varkappa_0} \tau\right]. \qquad (27)$$

The depth of minimum

$$\Delta T_{\min} = T(0, t_{\min}) - T_0^0 = -\frac{3}{\pi \varkappa_0} \left(\chi - n \frac{kT_0^2}{e}\right)^3 (1 + B)^{-1}. \qquad (29)$$

The dependence of temperature on time is shown in Fig. 1. Curve (1) for $0 \leqslant I \leqslant I_0/2$, curve (2) for $I_0/2 \leqslant I \leqslant I_0$, curve (3) for $I \gg I_0$

After discussing the possible mechanism, responsible for this be-

Card 4/6

Influence of thermo-emission ...

havior, the author compares his results with experimental evidence for the case of large potentials U_a. Taking data for the parameters from literature, the author derives values of I, t_{min} and ΔT for various cases. Although there is an appreciable uncertainty about data, especially $\varkappa_0$, the author concludes that cooling of the cathode for $t \leq 10^{-4}$ sec is significant only for large currents ($I \geq 100$ a/cm^2). There are 1 figure and 21 references: 11 Soviet-bloc and 10 non-Soviet-bloc. The 4 most recent references to the English language publications read as follows: G.A. Haas, J. Appl. Phys., 1957, 28, 4, 1486; R.S. Bever, J. Appl. Phys., 1955, 24, 8, 1008; R.L. Sproull, R.S. Bever, G. Libovitz, Phys. Rev., 1955, 92, 77; R.T. Dolloff, J. Appl. Phys., 1956, 27, 1418.

SUBMITTED: January 30, 1961

Card 5/6

OSTROUKHOV, A. A.

"Several Problems of the Theory of Thermoemission of Semiconductor Cathodes."

dissertation defended in the Institute of Radioengineering and Electronics, 1962
for the Academic degree of Candidate of Physicomathematical Sciences

Vestnik Akad Nauk, No. 4, 1963, pp119-145

NAKHODKIN, N.G.; OSTROUKHOV, A.A.; ROMANOVSKIY, V.A.

Inelastic electron scattering in thin films. Fiz. tver. tela 4 no.6:1514-1524 Je '62. (MIRA 16:5)

1. Kiyevskiy gosudarstvennyy universitet imeni T.G.Shevchenko.
(Electrons--Scattering)

S/109/62/007/012/012/021
D271/D308

9.3120
26.1640

AUTHOR: Ostroukhov, A. A.

TITLE: An interpretation of Schottky curves for thermionic semiconductor cathodes

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 12, 1962, 2072-2075

TEXT: Discrepancy between theoretical and experimental Schottky plots is explained by electron processes in the bulk and on the surface of the semiconductor while the effect of conducted current is taken into account. Duration of anode pulses is assumed smaller than the time required for bulk donor displacement by the distance of the order of screening depth. Current voltage characteristics are given for a material with parameters similar to those of BaO, for the start and the end of the pulse, in the presence and in the absence of surface levels. Using these characteristics, Schottky curves are plotted. Mean slope of Schottky curve for the beginning of pulse is 1.85 times greater than that of the curve computed under

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An interpretation of ...

the assumption that barrier concentration of electrons does not depend on the current. Similar ratio for the end of the pulse is 1.41. This gives virtual Schottky temperatures of 540° and 710°K, with a true temperature of 1000°K. The difference between the beginning and the end of pulse becomes small when surface levels are absent or when the recombination exchange between conduction band and surface levels is rapid. Anomalous slope of Schottky curves may be due only to the internal and not external Schottky effect. Experimental results can be therefore theoretically confirmed without introducing additional effects difficult to analyze, e.g. inhomogeneity and roughness of the emitting surface. There are 2 figures.

SUBMITTED: January 23, 1962

Card 2/2

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AUTHOR: Ostroukhov, A. A.

TITLE: The effect of volume charge on the dynamic characteristic and the emf of a thermionic energy transformer

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 5, 1962, 613-625

TEXT: The theory of thermionic vacuum energy transformer with completely or partially compensated space charge is investigated. For the case when the mean free path of the atoms, ions, and electrons is larger than the distance between the electrodes, Poisson's equation is set up for thermoelectrons emitted from the cathode, for electrons emitted from the anode, and for ions produced at the cathode by thermal ionization. From this is calculated the potential distribution between the electrodes. An explanation of the experimentally obtained dependence of thermo-emf on the cathode temperature and the form of the dynamic characteristic is obtained by taking into consideration the volume charge between the electrodes. For a description of the electron plasma account must be taken of the mutual interaction of particles in the space between the electrodes as well

Card 1/2

as of the boundary conditions at the electrodes even at low pressures. The results of calculations of the electron and ion concentrations and the potential in the space between electrodes under different conditions of operation by using the formulas developed here will be published. Professor N. D. Morgulis, Corresponding Member AS UkrSSR, is thanked for suggesting the problem and for advice. K. B. Tolpygo is thanked for discussions. There are 3 figures and 1 table.

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet (Kiyev State University)

SUBMITTED: March 23, 1961 (initially)
October 27, 1961 (after revision)

Card 2/2

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S/181/63/005/001/006/064
B102/B186

AUTHORS: Nakhodkin, N. G., Ostroukhov, A. A., and Romanovskiy, V. A.

TITLE: Scattering of electrons passing through thin films

PERIODICAL: Fizika tverdogo tela, v. 5, no. 1, 1963, 41-47

TEXT: Using the model of continuous energy losses (cf. T. Everhart, J.Appl.Phys.,31,1438,1960), the authors have already studied the inelastic reflection of electrons. Here the same method is followed in order to study the passage of fast electrons through free films, and to calculate the transmissivity coefficients η, assuming single elastic scattering through a large angle. η is the flux ratio of electrons passing through to incident electrons. In the simplest case of Rutherford scattering $\eta = (1-d)^{-a}\exp(-2ad)/(1-d)$ is obtained, where $a = \pi Z^2 e^4 N_a/m^2 Ac$, and N_a is Avogadro's number. Putting $a = 0.045Z$ gives a close approximation. $d = t/R$ is the dimensionless thickness of the film. For films of equal thickness, but with different incident electron energies E_0, the expression

Card 1/3

$$\eta=\left[1-\left(\frac{E_{ok}}{E_0}\right)^2\right]^{-a}\exp\left[-\frac{2a\left(\frac{E_{ok}}{E_0}\right)^2}{1-\left(\frac{E_{ok}}{E_0}\right)^2}\right]. \qquad (9)$$

holds. These energies are expressed in terms of E_0/E_{ok}, where E_{ok} is the energy of electrons with a range equal to the thickness of the film. The function I(y) (cf. Phys.Rev.,98,1597,1955) is given near $y\sim 1$ by $I(y)\sim(1-y)^{\gamma}\exp(-A/(1-y))$, where γ and A are constants depending on the shape of the source and on the initial electron energy; $y = x/R$, $R = v_0^4/cq$. The following holds near $y = 1$: $I(y)\sim(1-y)^{-a-3/4}\exp(-2a/(1-y))$. η was measured as a function of various parameters for various metals and for electrons of various energies in the kev range, and the curves obtained were compared with the theoretical values. It follows from the results that the theoretical principles obtained are general, i.e. that the curves are normalizable. The dependence of the η of a two-layer film on its 180° orientation relative to the electron beam was detected experimentally using an Al-Au film. The ratio of the extrapolated range to the total

Card 2/3

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23

CALCULATING THE PARAMETERS OF A THERMIONIC CONVERTER (USSR)

Ostroukhov, A. A. Radiotekhnika i elektronika, v. 8, no. 4, Apr 1963, 619-621.
S/109/63/008/004/010/030

Formulas have been developed for calculation of the potential distribution and of the electron and ion concentrations in a low-pressure thermionic converter. The calculation was based on key parameters characteristic of experimental devices currently in use: a cathode temperature of 2050°K and an interelectrode spacing of 0.5 cm. These yield a thorium carbide cathode emission current of 11.5 amp/cm^2 and an ion current of $5.51 \cdot 10^{-3}$ amp/cm^2. The potential and concentration, calculated as functions of spatial coordinates as well as of the field and potential strength at the electrodes, are in good agreement with experimental data. Comparison of the theoretically obtained absolute concentration values with observational data gives less satisfactory agreement. [ZL]

1/1