IGNATENKO, P. I.

IGNATENKO, P. I. --"Roentgenographic Investigation of Distortion of the Atomic Crystalline Lattice of a Metal in the Initial Stage of Wear." Leningrad, 1955. (Dissertation for the Degree of Candidate in Physicomathematical Sciences.)

Sol: Knizhnaya Letopis', No 7, 1956.

IGNATENKO, P.I., kand.fiz.-mat.nauk; TERMINASOV, Yu.S., doktor fiz.-mat.nauk, prof.

Investigating the depth of hardened layers in worked-in steel surfaces. Izv.vys.ucheb.zav.; mashinostr. no.6:178-183 '58. (MIRA 12:8)

1. Leningradskiy inzhenerno-ekonomicheskiy institut.
(Surfaces (Technology))

SOV/122-58-8-15/29

AUTHORS: Terminasov, Yu.S., Doctor of Physical and Mathematical Sciences, Professor, and Ignatenko, P.I., Candidate of Physical and Mathematical Sciences

TITLE: Relations between the Wear Resistance, the Microhardness and the Distortions of the Metal Crystal Lattice (Svyaz' mezhdu iznosostoykost'yu, mikrotverdost'yu i iskazheniyami kristallicheskoy reshetki metalla)

PERIODICAL: Vestnik mashinostroyeniya, 1958, Nr 8, pp 45-46 (USSR)

ABSTRACT: A study was carried out at the Leningradskiy inzhenerno-ekonomicheskiy institut (Leningrad Engineering-Economics Institute) and is reported, wherein mechanical and X-ray spectroscopic methods were used to find a relation between the wear resistance and the condition of the surface layer as expressed by its microhardness and by distortions of its crystal lattice. Tool steel rings of 40 mm inside and 48 mm outside diameter were ground under different conditions to produce residual stresses of different sign. The specimens were tested on an Amsler wear machine either with or without lubricant. The tests are summarised in a linear relation between the weight of metal worn away and the degree of cold work existing at any time. The total

Card1/2

Relations between the Wear Resistance, the Microhardness and the Distortions of the Metal Crystal Lattice

cold work is equal to the initial cold work increased by the additional cold work caused by the wearing process. This relation holds in the running-in stage until a maximum amount of cold work is applied. It follows that with a given degree of initial cold work achieving the optimum surface roughness, microhardness and lattice distortion, the wear resistance ceases to depend on additional cold work.
There are 3 figures.

Card 2/2 1. Metals--Mechanical properties 2. Crystals--Distortion 3. Crystals --Lattices 4. Metals--X-ray analysis 5. Metals--Spectra

SOV/122-58-12-3/32

AUTHORS: Ignatenko, P.I., Candidate of Physical and Mathematical Sciences, and Terminasov, Yu. S., Doctor of Physical and Mathematical Sciences.

TITLE: Investigation of the Effect of the Surface Layer Condition in Steel on its Resistance to Wear (Issledovaniye vliyaniya sostoyaniya poverkhnostnogo sloya stali na yeye iznosostoykost')

PERIODICAL: Vestnik Mashinostroyeniya, 1958, Nr 12, pp 10-12 (USSR)

ABSTRACT: Rings of U8 carbon tool steel, of 48 mm o.d., 40 mm i.d., and 10 mm height were turned and annealed in an electric vacuum furnace. By grinding at different speeds (30 and 50 m/sec) deformations of different signs were introduced into the surface layer. Some of the sp ecimens were again annealed. The initial micro-hardness and surface finish were measured. Annealed specimens with 200 kg/mm^2 (high-speed grinding) were tested for wear on an Amsler machine, namely dry, under a load of 3 kg, and lubricated, under a load of 20 kg. Cast iron self-aligning blocks were pressed against the rotating rings. The wear was judged by the loss of weight. The degree of work-hardening

Card 1/2

Investigation of the Effect of the Surface Layer Condition in Steel on its Resistance to Wear

has proved to be the main factor determining wear. Fig 2 shows the friction work in lubricated slidings plotted against the number of revolutions. One curve covers all annealed specimens and another, about 20% lower, covers all work-hardened specimens. Fig 3 shows the micro-hardness rising with the number of revolutions and illustrates the rise of micro-hardness as the reason for the flattening out of the wear curves. Similar regularities were observed in dry friction. However, the final micro-hardness values, achieved after running-in (about 450 kg/mm^2) were about the same whatever the starting condition, whereas in lubricated friction the annealed specimens never reached more than 350 kg/mm^2.

There are 5 graphs and 4 Soviet references.

PIROG, Petr Ivanovich; DYKLOP, E.P., retsenzent; IGNATENKO, P.L., retsenzent; TSYPERSON, A.L., red.; VOLKOVA, V.G., tekhn. red.

[Principles of construction] Osnovy stroitel'nogo dela. Moskva, Gostorgizdat, 1963. 199 p. (MIRA 16:8)
(Building)

IGNATENKO, S. I.

124-57-1-522

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 65 (USSR)

AUTHOR: Ignatenko, S. I.

TITLE: Calculation of an Energy Dissipator for an Open Counterflow (Raschet gasitelya protivotoka otkrytogo tipa)

PERIODICAL: Sb. tr. Novocherkas. inzh. -melior. in-ta, 1955, Vol 5, pp 111-115

ABSTRACT: The author shows the hydraulic calculation of the energy dissipation of a flow issuing from under a row of jets coming forth from conduits located in piers and buttresses of hydraulic structures, when that flow moves at an angle with respect to the direction of the main flow.
Ref. also RzhMekh, 1954, 4791, and 1955, 4976.

V. V. Fandeyev

1. Hydraulic systems--Energy losses--Analysis

Card 1/1

IGNATENKO, S.I.

Subject : USSR/Hydraulic Engineering Construction AID P - 1802

Card 1/1 Pub. 35 - 14/17

Author : Ignatenko, S. I.

Title : On using inverse water jet as hydraulic jump absorber (Letter from reader).

Periodical : Gidr. stroi., v.24, no.1, 43-44, 1955

Abstract : Answering the article of Anufriyev (this journal, 1954, no.1), who advocates the method of dividing the discharged water into currents, the author establishes with the help of mathematical analysis the possibility of absorbing the discharged energy by a flat inverse water jet consuming the hydraulic jump. The practicability of establishing syphons is criticized. The building of chutes in piers carrying water under an angle to meet the flow is advocated. Four diagrams are given.

Institution: None

Submitted : No date

SOV/124-57-4-4242

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 4, p 54 (USSR)

AUTHOR: Ignatenko, S. I.

TITLE: Hydraulic Resistors for the Model Simulation of Nonlinear Processes (Gidravlicheskiye soprotivleniya dlya modelirovaniya nelineynykh protsessov)

PERIODICAL: Tr. Novocherkas. politekhn. in-ta, 1956, Nr 33/47, pp 126-132

ABSTRACT: For the solution of calculation problems relative to water, gas, and heating networks on a hydraulic simulator (integrating device) it is necessary to define the power law of the dependence of the pressure losses on the flow rate $h = SQ^m$. The author suggests the construction of a resistance tube (element) for the simulation of the above-mentioned power law when $1 \leq m \leq 2$. The desired resistance is created by forcing the flow of water first through a diaphragm and next through an annular gap. A change of the value of m is basically determined by a change in the gap width. To verify the results, a number of tests were made with gaps of different widths. The tests showed that with an approximately fivefold change in the flow rate Q the exponent m remains more or less constant. The values investigated are confined within the limits of $1.45 \leq m \leq 2$.

Card 1/1

V. M. Shestakov

BAKULEV, A.N., akademik; SAVEL'YEV, V.S., doktor med. nauk; KOLESNIKOVA, R.S., kand. med. nauk (Moskva, prosp. Mira, d. 103, kv. 155); IGNATENKO, S.I.

Method of artificial blood circulation without using heparinized donor blood. Vestn. khir. Grekov. 90 no.4:3-6 Ap'63 (MIRA 17:2)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (direktor - akademik A.N. Bakulev) 2-go Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.

BAKULEV, A.N.; SAVEL'YEV, V.S.; SAVCHUK, B.D.; KOSTENKO, I.G.; IGNATENKO, S.N.

Indications for a permanent electric stimulation of the heart in atrio-ventricular blocks. Grud. khir. 6 no.2:3-10 Mr-Ap '64. (MIRA 18:4)

1. Klinika fakul'tetskoy khirurgii imeni Spasokukotskogo (dir. - akademik A.N.Bakulev) II Moskovskogo meditsinskogo instituta imeni Pirogova. Adres avtorov: Moskva V-49, Leninskiy prospekt, d.8. I-ya Moskovskaya gorodskaya bol'nitsa.

CHIKALENKO, G.A., inzh.; DANILOV, M. S., inzh.; IGNATENKO, S.O., inzh.;

Construction and repair of rammed hearths in open-hearth furnaces. Met. i gornorud. prom. no. 3:60-My-Je '63.

1. Institut avtomatiki Gosplana UkrSSR.

IOVATENKO, Stepan Vasil'yevich; LEBEDEV, V.V., redaktor; PAVLOVA, M.M., tekhnicheskiy redaktor

[Training and pruning fruit trees in the central part of the U.S.S.R.] Formirovanie i obrezka plodovykh derev'ev v srednei polose SSSR. Moskva, Gos. izd-vo sel'khoz.lit-ry, 1957. 69 p. (Pruning) (MLRA 10:6)

SHEKEOVTSEV, M.Ya.; IGNATENKO, S.I.; SERGEYEV, V.I., red.; PROKOF'IEVA, L.N., tekhn.red.

[Oboyan' State Fruit Nursery and Farm] Oboianskii plodopitomnicheskii sovkhoz. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1960. 195 p. (MIRA 14:3)
(Oboyan' District--Nurseries (Horticulture))

IGNATENKO, T.

Fire department chiefs are studying. Pozh.delo 8 no.8:28-29 Ag '62. (MIRA 15:8)

1. Nachal'nik otdela sluzhby i podgotovki Upravleniya pozharnoy okhrany Latviyskoy SSR, g. Riga.
(Firemen--Education and training)

IGNATENKO, T.A.

IGNATENKO, T.A., otvetstvennyy red.; MUSAYEV, A.M., red.; SHARSHENOV, K.Sh., red.

[Collection of reports delivered at the second session of the Kirghizistan "Pedagogical lectures" on physics and mathematics] Sbornik dokladov, prochitannykh na vtoroi sessii Respublikanskikh "Pedagogicheskikh chtenii" po fizike i matematike. Frunze, 1954. 52 p. (MIRA 10:12)

1. Frunze, Kirgizskiy nauchno-issledovatel'skiy institut pedagogiki. (Physics--Study and teaching) (Mathematics--Study and teaching)

IGNATENKO, V.

107-57-5-15/63

AUTHOR: Ignatenko, V., Chief of the Radio and Meteo Center
TITLE: Dixon Island (Ostrov Dikson)
PERIODICAL: Radio, 1957, Nr 5, pp 12-13 (USSR)
ABSTRACT: The following measurements are expected to be conducted by the radio center and the observatory at Dixon Island: magnetic field of the Earth, radio-field intensity on short and medium waves, radar investigation of northern lights, observation and recording of ionospheric whistles, and atmospheric disturbances. The Arkticheskiy nauchno-issledovatel'skiy institut (Arctic Scientific Research Institute) supplies regularly predictions for radio communication conditions. A special 18-2.5 mc transmitter is used for studying the propagation across the northern lights area. Kovtanyuk and Yarlykov, shift chiefs, left Dixon for Mirnyy in autumn 1956. In the thirties the author worked in Novosibirsk, was an amateur with a call sign U9AZ.
AVAILABLE: Library of Congress

Card 1/1

IGNATENKO, V., mayor

Azimuth circle. Voen. vest. 38 no.9:78 S '58. (MIRA 11:9)
(Azimuth)

IGNATENKO, V., KRASYUKOV, P.

Windbreaks, Shelterbelts, Etc.

Let's complete the establishment of shelterbelts eleven years ahead of schedule. Les i step' 4 no. 7, 1952.

Monthly List of Russian Accessions, Library of Congress, September 1952. Unclassified.

TSEREVITINOV, B.F.; IGNATOV, Yu.V.; IGNATENKO, V.B.; KRUSHINSKIY, V.V.

Heat insulating properties of fur hats. Kozh.-obuv.prom. 4 no.12:19-22 D '62. (MIRA 16:1)
(Clothing, Cold weather—Testing)

IGNATENKO, V. I.

Tree Planting

Structural defects of the tree-planting machine SLN-1. Les. khoz. 5, No. 7, 1952.

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

1. IGNATENKO, V. I.

2. USSR (600)

4. Tree Planting

7. Shortcomings in the operation of firming rollers in the SLCh-1 and SLN-1 tree-planting machines. Sel'khozmashina no. 11, 1952.

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

IGNATENKO, V.I.; TERMINASOV, Yu.S.

X-ray diffraction study of the mechanism of the plastic deformation of aluminum single crystals. Izv. AN Kir. SSR. Ser. est. i tekh. nauk 1 no.3:59-65 '59. (MIRA 14:9)
(X-ray crystallography) (Deformations (Mechanics))
(Aluminum crystals)

SAVEL'YEV, N.G., kand.tekhn.nauk; IGNATENKO, V.I., prepodavatel'

Calculating multiple-support stepped shafts considering the shearing forces. Issl.v obl.metallorezh.stan. no.4:298-325 '61. (MIRA 14:12)

(Shafting)

IGNATENKO, V.I.

Diesel locomotives manufactured at the Lugansk Diesel-Locomotive Plant. Mashinostroenie no.2:85 Mr-Ap '62. (MIRA 15:4)
(Lugansk--Diesel locomotives)

IONATENKO, V.M., uchitel'

Influence of fertilizer on the yield of millet. Biol. v shkole no.5:78-79 S-O '61. (MIRA 14:9)

1. Sergiyevskaya srednyaya shkola Kurskoy oblasti.
(Millet—Fertilizers and manures)

IGNATENKO, V.M., inzh.; MELEKESTSEVA, B.I.

Drilling out coal in working seams subject to sudden outbursts of coal and gas. Shakht. stroi. 7 no.1:18-20 Ja '63. (MIRA 16:2)

1. Ukrainskiy nauchno-issledovatel'skiy institut organizatsii i mekhanizatsii shakhtnogo stroitel'stva.
(Coal mines and mining)

IGNATENKO, V. P.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1415
AUTHOR BERESTECKIJ,V.B., IGNATENKO,V.P.
TITLE Angular Distribution in the Case of the Cascade-Like Decay of Hyperons.
PERIODICAL Žurn.eksp.i teor.fis,30, fasc.6, 1169-1171 (1956)
Issued: 8 / 1956 reviewed: 10 / 1956

Here the cascade-like decay $\Sigma^0 \rightarrow \Lambda^0 + \gamma \rightarrow p + \pi^- + \gamma$ is investigated. At first the wave function of the relative motion of the proton and the pion as well as the wave function of the entire system are explicitly given in the end state. With the help of the well-known addition theorem of the square of a spherical harmonic according to LEGENDRE'S polynomials and the summation properties of the coefficients of the vector separation, the angular distribution of the particles is computed.
In the following the angular distributions $I(\theta)$ for $j = 3/2$ and for various values of J are enumerated. With $j = 1/2$ the distribution is spherical symmetrical. (Several coefficients are determined by the decay mechanism and are expressed by a factor. If only the smallest L plays a role, the first two terms must be omitted in the following formulae). Denotations: j - spin of the Λ -particle, J - spin of the Σ -particle, L - angular momentum of the relative motion of photon and Λ -particle.
The following are the explicit expressions for the angular distributions:

Žurn.eksp.i teor.fis,30, fasc.6,1169-1171 (1956) CARD 2 / 2 PA - 1415

$J = 1/2$: $I = 1 - 0{,}6\cos^2\theta + a(1 + \cos^2\theta)$

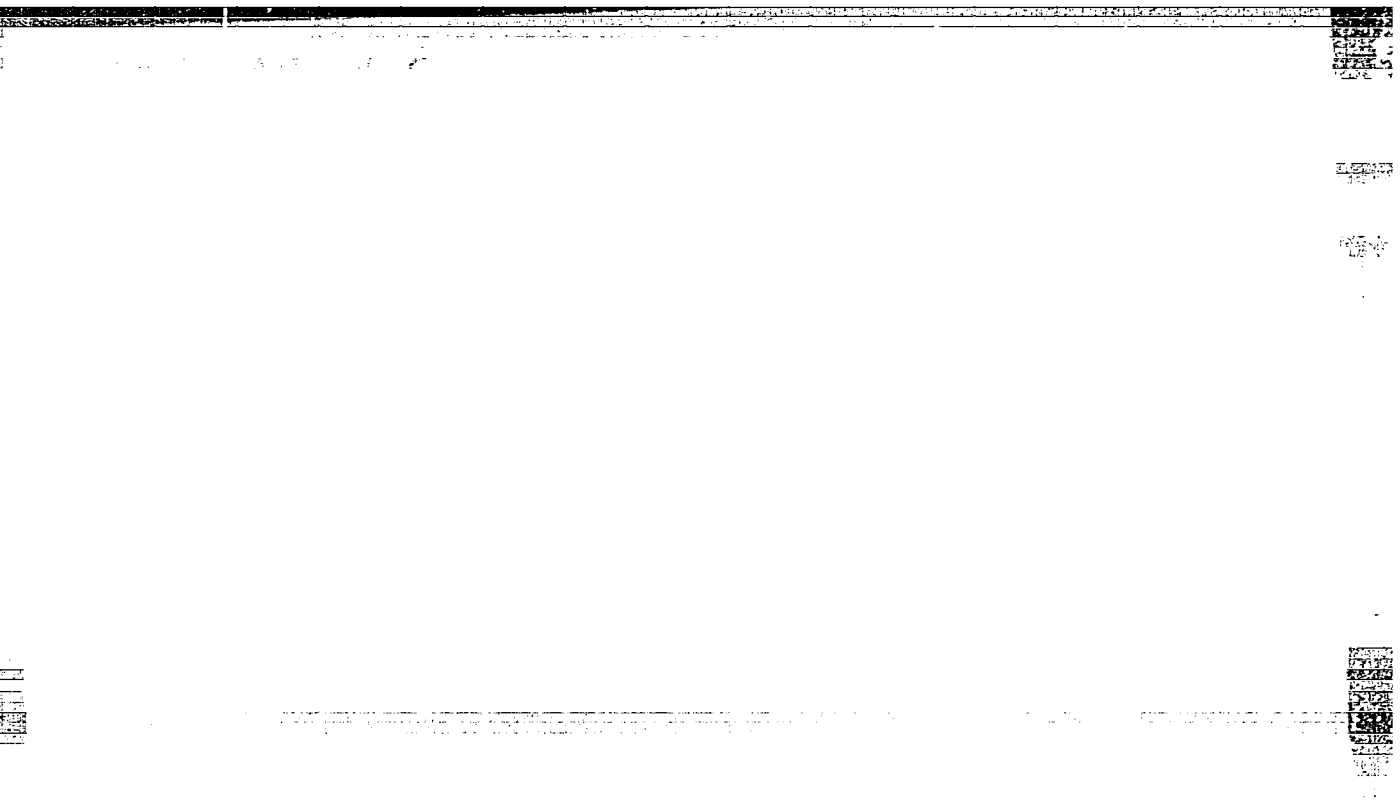
$J = 3/2$: $I = 1 + 0{,}75\cos^2\theta + a(0{,}4 - 1{,}2\cos^2\theta) + a^2(0{,}37 + 0{,}48\cos^2\theta) + b.$

$J = 5/2$: $I = 1 - 0{,}45\cos^2\theta + \beta(0{,}4 - 1{,}2\cos^2\theta) + \beta^2(0{,}33 + 0{,}43\cos^2\theta) + c[(1 - 0{,}14\cos^2\theta) + \gamma(0{,}5 - 1{,}5\cos^2\theta) + \gamma^2(0{,}44 - 0{,}1\cos^2\theta)]$

$J = 7/2$: $I = 1 - 0{,}6\cos^2\theta + \delta(0{,}5 - 1{,}36\cos^2\theta) + \delta^2(0{,}26 + 0{,}48\cos^2\theta) + d[1 + 0{,}23\cos^2\theta + \varepsilon(0{,}7 - 2{,}1\cos^2\theta) + \varepsilon^2(0{,}5 + 0{,}01\cos^2\theta)]$

In conclusion attention is drawn to the recently published work by R.GATTO, Nuovo Cim. 3, 665 (1956) on correlations on the occasion of the decay of Σ -particles.

INSTITUTION:



30441
S/109/61/006/012/016/020
D266/D305

26.2322
26.2531

AUTHORS: Ignatenko, V.P. and Myasnikov, A.S.

TITLE: Compensation of ion space charge by electrons

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 12, 1961, 2084 - 2092

TEXT: The purpose of the paper is to analyze a particular arrangement of electrodes (Fig. 1) capable of producing mixed flow of ions and electrons. In order to simplify the analysis the following assumptions are made: (1) the flow is stationary and obeys the laws of electrostatics, (2) the presence of ions due to an incomplete vacuum is ignored, (3) recombination of the particles is neglected, (4) grid-currents are zero and the electric field in the plane of the grid is uniform, (5) initial velocities are the same for each particle. The ions are emitted by an anode of voltage V_M and accelerated by a grid of zero voltage (Fig. 1). The ions are given sufficient energy to reach the electron emitter. The distance l is chosen in such a way that the potential due to the space charge of

Card 1/13

Compensation of ion space ...

ions is larger than the potential of the electron emitter, V_o. The problem is divided into two parts: (i) to ensure that the ions reach the electron emitter, (ii) to maintain the ion-electron beam in the drift space. The potential distribution is calculated from Poisson's equation assuming that both the ion and the electron current are constant. The electric field at both emitters is assumed to be zero. In region I there are only ions while in region II both types of charged particles are present. The solutions (length formulae containing elliptic integrals) are matched at the common boundary (for these calculations region III is taken as zero). The mathematical conditions are determined under which $V_m > V_o$ (V_m is the maximum value of the potential in the inter-electrode space) which is necessary for operating the device. It is interesting to note that for certain values of l/d the maximum voltage has two values which is a consequence of ionic hysteresis. Neglecting initial velocities the potential distribution in the drift space is obtained in the form of a periodic function. If the ion and electron currents are equal the difference between V_m and V_o is compa-

Card 2/[illegible] 5

Compensation of ion space ...

rable with thermal velocities. It is claimed, however, that the effect of random initial velocities does not alter the conclusions only in that case the parameters of the virtual cathode should be used. There are 5 figures and 4 references: 1 Soviet-bloc and 3 non Soviet-bloc. The references to the English-language publications read as follows: J.R. Pierce: Theory and design of electron beams, Van Nostrand, New York, F. Wentzl, Z. angew. Phys., 1952, 4, 5, 94; I. Langmuir, Phys. Rev., 1929, 33, 6, 954.

SUBMITTED: April 4, 1961

Card 3/4 3

26.2322

AUTHOR: Ignatenko, V. P.

TITLE: Electrostatic focusing of intense charged-particle beams in systems with cylindrical cathode

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 12, 1961, 1443-1450

TEXT: Focusing of high-density particle beams is studied. The cathode is assumed to be part of a cylindrical surface with radius r_c; various shapes of anodes are considered. A) Anode is part of a cylindrical surface, radius r_a, coaxial with the cathode: The focusing conditions

$1.87 < \frac{r_c}{r_a} < 2.83$ (partial focusing) and $\frac{r_c}{r_a} \geqslant 2.83$ (total focusing) are derived for the sheet-like particle beam emerging from the cylindrical electrodes. The space charge of the beam is assumed to have no effect on the longitudinal velocity of the particles. The position x_m of the minimum cross section of the beam is given by

Card 1/4

Electrostatic focusing of...

$\beta_1^2 = \beta^2\left[\frac{r_c}{r_a}(1 - \delta^2/r_c^2)\right]$. δ is the distance between the centers of curvature of cathode and anode. C) Anode consists of two cylindrical bars of radius r_a, parallel to and equidistant from the cathode, and at a distance ρ from the center of curvature of the cathode ($\frac{r_a}{2\pi} \ll \rho \ll r_c$):

$\frac{x_m}{r_c} = (9\rho^2/2r_cF_2)(2r_a/\rho)^{\vartheta_0/\pi}$; $\beta_2^2 = \beta^2\left[\frac{r_c}{\rho}(\rho/2r_a)^{\vartheta_0/\pi}\right]$. $\frac{y_m}{y_c} = (\rho/r_c)(1 - x_m/2F_2)$ where ϑ_0 is half the central angle of the cylindrical cathode with the x-axis going through the center of the cathode.

F. V. Gavrilov and S. D. Malyuzhinets are thanked for discussions. There are 6 figures, 1 table, and 5 non-Soviet references. The four references to English-language publications read as follows: E. Weber. Electromagnetic Fields, v. 1. John Willey, Inc., N. Y., 1950; H. F. Ivey. J. Appl. Phys.,

Card 3/4

31720
S/057/61/031/012/006/013
B108/B138

Electrostatic focusing of...

24, 1466, 1953; 25, 543, 1954. C. L. Dawes. Physics, 4, 81, 1933; J. Langmuir, K. Blodgett. Phys. Rev., 22, 347, 1923.

SUBMITTED: February 16, 1960

Card 4/4

09117
S/053/61/073/002/002/003
B117/B212

26.2320

AUTHOR: Ignatenko, V. P.

TITLE: The formation and focusing principles for intense beams of charged particles

PERIODICAL: Uspekhi fizicheskikh nauk, v. 73, no. 2, 1961, 243-275

TEXT: This is a survey of investigations dealing with formation and conservation of intense beams of charged particles. All surveys which are presently found in the technical literature (Refs. 5-12) about effects of spatial charges, are out of date and deal only with the problem indirectly. Therefore, here all results shall be condensed which have been published in numerous publications and books about formation and focusing of intense beams, and also some unsolved problems shall be pointed out. Chapter 1 of this survey explains the terms of "intense beams" and their "focusing". The introduction of the term "intense beam" for beams of charged particles, here the internal forces play a main role and cannot be neglected, is apparently purely formal, but very convenient for practical purposes. The term "focusing of intense beams" cannot be treated as in electron optics, but as

Card 1/4

The formation and focusing ...

a formation of a particle current into beams having more or less distinct boundaries and a nearly laminar flow of particles. Besides that the prescribed configuration of the current has to be uniform over a certain length and it has to be protected against the destructive influence of the space charge and also against various other disturbances, which are met by the moving particles. Even though the methods of formation and focusing of beams in electric vacuum systems are closely related to the mechanism of beam interactions with electromagnetic fields of the guiding grid, the beams have to meet a number of general requirements. For that reason it is possible to consider various focusing systems under a common aspect. The theoretical analysis of the behavior of intense beams in electromagnetic fields is related to the solution of systems of nonlinear differential equations in differential quotients; i.e. it is a very complicated mathematical problem. In recent years numerous approximate solutions have been found and several methods have been suggested for generating and focusing of intense beams. The following researchers have greatly contributed to the development of this branch in electronics: S. A. Boguslavskiy, V. R. Bursian in the field of effects of space charges on the motion of charged particles; V. S. Lukoshkov about methods of simulating intense beams;

The formation and focusing ...

Ya. I. Frenkel', S. A. Bobkovskiy, M. M. Bredov, and S. M. Braginskiy about neutralization of space charges in beams; V. T. Ovcharov, Z. S. Chernov, about theory and new methods of focusing nonlinear currents. The following foreign researchers are especially mentioned: J. R. Pierce, H. F. Ivey, P. T. Kirstein, B. Meltzer, G. B. Walker. The other chapters of the survey deal with the following problems: 2) presumptions about properties of intense beams; 3) types of focusing and special theoretical questions; 4) basic laws of conservation of intense currents in the hydrodynamic theory; 5) continuous nonrelativistic beams if no magnetic fields are present; 6) formation of beams using electrodes according to Pierce; 7) intense beams of charged particles in a magnetic field; 8) methods of centrifugal and periodic focusing; 9) approximate methods of calculating intense beams; 10) influence of relativistic effects and initial velocities; 11) application of computing systems and methods of simulating intense beams. Concluding the author mentions several problems, which have still to be solved in connection with the formation and focusing of intensive beams. Treating focusing methods and especially electrostatic ones, is such an actual problem. A comparison of the magnetic and electrostatic focusing systems favors the latter type. But they are still not too well perfected to replace the magnetic focusing

Card 3/4

method in very important super-high frequency instruments completely. In laboratory models and very often in practical constructions the magnetic focusing is prefered if focusing is done by homogeneous or periodic fields; even though very heavy units are required for this method, they are easier to build than to keep exact geometric tolerances and also exact amplitudes for the field in each section. The methods of centrifugal focusing are the most dependable of all known methods to generate long and stable beams of charged particles and it is very easy to control them. M. M. Lavrent'yev, Ye. M. Landis, V. T. Ovcharov are mentioned. There are 18 figures and 214 references: 39 Soviet-bloc.

S/109/62/007/007/014/018
D266/D308

AUTHOR: Ignatenko, V. P.

TITLE: Propagation of relativistic beams of charged particles with high current density in accelerating and decelerating electrostatic fields

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 7, 1962, 1175-1184

TEXT: The purpose of the paper is to derive theoretical formulas for the potential distribution in a diode if the velocity of the charged particles approaches the velocity of light. A parallel-plane diode is studied where the edge effects are neglected. Further simplifications in the physical model are as follows: The effect of self-magnetic field, of initial velocities, and of imperfect vacuum is neglected and homogeneous accelerating and decelerating fields are assumed. The author starts the analysis by writing up Poisson's equation and the equation of motion in relativistic form. Introducing a new variable

[illegible]/62/007/007/014/018
[illegible]256/[illegible]308

$$\varphi = \eta V/c^2 \qquad (2)$$

a single differential equation is obtained and solved for x (distance from the cathode) in the form

$$x = \sqrt{\frac{c^3}{8\pi\eta j}} \int_0^{\varphi} \frac{d\varphi}{\sqrt{\sqrt{\varphi(\varphi + [illegible]} + C}} \qquad (5)$$

V denotes voltage, j - current density, c - velocity of light, $\eta = e/m_o$, e - charge of the particle, m_o - mass of the particle at rest, C - integration constant. The integral in Eq. (5), denoted by $f(\varphi)$,

Propagation of relativistic ...

is expressed with the aid of elliptic integrals of the first and second kind. This is an important step forward because previously available results were in the form of slowly convergent infinite series. The obtained potential distributions are somewhat different from that of Langmuir, and become more curved as the anode voltage tends to infinity. The effect of decelerating fields is studied on a three-electrode model where a zero potential grid first accelerates the particles from a potential V_a and they encounter the decelerating field in the grid-collector region. The potential distribution depends strongly on $\sigma = l/d$, where l = grid-collector distance, d - cathode-grid distance. The influence of high voltages is much stronger in the decelerating case. The equations are also solved for the case when particles are returned by a virtual cathode. The current reaching the collector $j(1 - \beta)$ is then related to the total current j_{total} as follows:

Card 3/4

$$\frac{j(1-\beta)}{j_{total}} = \left[\frac{f(\varphi_a - \varphi_c)}{(\sigma-1)f(\varphi_a)}\right]^2 \qquad (34)$$

where φ_c refers to the voltage at the collector. There are 8 figures.

SUBMITTED: July 27, 1961

Card 4/4

31949
S/057/62/032/001/009/018
B146/B112

24.6712

AUTHOR: Ignatenko, V. P.

TITLE: Generation of convergent beams of charged particles of high current density

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 1, 1962, 63-68

TEXT: The author studied the formation of intensive, wedge-shaped beams of charged particles subject to dissolution due to space charge effects. The space charge forces can be compensated by an outer electrostatic field; thus, the discharge contours maintain their position. According to I. Langmuir and K. Blodgett (Ref. 5: Phys. Rev., 22, 347, 1923), a potential fulfilling this purpose is calculated for the special case of concentric cylindrical electrodes (the anode lying inside). The form of the equipotential lines for the formation of beams is graphically represented for the central angles 20° and 30°. The aspect of the beam is found to change only if the anode form changes directly at its contour. Formulas for the dependence of the potential form on the anode are given

Card 1/2

for the special case $r_a \ll r_k$ (anode and cathode radius). The velocity distribution of charged particles in the beam as dependent on the inclination to the anode, as well as the dependence of the inclination angle on the distance of the center of curvature of the cathode from the center of curvature of the equipotential lines are graphically represented. The author thanks D. Malyuzhinets for a discussion. There are 3 figures and 7 references: 1 Soviet and 6 non-Soviet. The four most recent references to English-language publications read as follows: J. Hadamard, Lectures on Cauchy's problem in linear partial differential equations, Dover Publ. Inc., N. Y., 1952; R. J. Lomax. J. Electr. Contr., 6, 39, 1959; W. G. Dow. Fundamentals of Engineering Elements, J. Willey a. Sons., Inc., N. Y., 1952; J. R. Pierce. J. Appl. Phys. 11, 548, 1940.

ASSOCIATION: Institut mekhaniki AN SSSR Moskva (Institute of Mechanics AS USSR Moscow)

SUBMITTED: April 21, 1960

31955 S/057/62/032/001/018/018 B111/B102

11.4110
26.1640

AUTHOR: Ignatenko, V. P.

TITLE: Calculation of the electrical conductivity of alkali metal and copper vapors

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 1, 1962, 129 - 132

TEXT: The authors measured the electrical conductivity σ as a function of temperature proceeding from Davidson's formula for the charged particle mobility (Ref.1: P. M. Davidson, Proc. Phys. Soc., 67B, 159, 1954) and on the assumption of a Maxwellian particle distribution. At low temperatures σ (T) strongly increases to a threshold which, independently of the chemical nature of the gas corresponds to the total single ionization. With increasing T, σ (T) further increases to a second threshold corresponding to the double ionization. At low temperatures σ also strongly depends on pressure, with a 15 - 20% ionization this dependence is hardly noticeable. The measurement results for Cs from 3000 to 10000°K are in good agreement with the theoretical values. The mean lifetime t_p of a recombining ion was calculated with the aid of the three-collision

IGNATENKO, V.P.

Ion compensation of a space charge of relativistic electron streams. Zhur. tekh. fiz. 32 no.12:1428-1432 D '62. (MIRA 16:2)

1. Institut mekhaniki AN SSSR, Moskva.
(Electrons)
(Ions)

11211
S/057/62/032/012/017/017
B104/B186

26 2327

AUTHOR: Ignatenko, V. P.

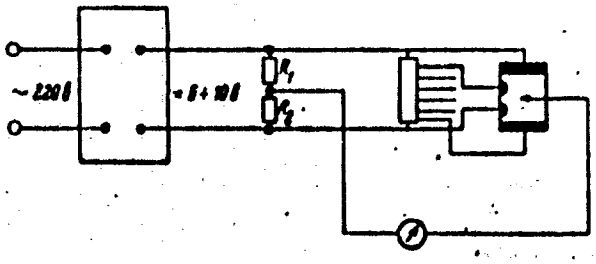
TITLE: Simulating the focusing processes of intensive ion beams

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 12, 1962, 1433-1437

TEXT: The resistance of electrically conductive paper (10 kiloohms/cm^2) was changed by perforation, by gluing sections of papers having different conductivity, by dyeing or by retouching in such a way that, by using the experimental set-up shown in Fig. 1, the focusing of intensive ion beams in multielectrode systems could be simulated. With the aid of a highly conducting metallic silver suspension, electrodes were applied to the paper. The influence of the negative temperature coefficient of the paper resistance was eliminated by keeping the temperature constant. The aim was to study processes of formation and focusing of intensive ion beams by introducing into the system additional focusing electrodes (active focusing) or by changing the shape of the ion source (passive focusing). First, without considering a space charge, the electrostatic field was determined by means of a probe. Then, considering the charge of the other particles, the

Card 1/3

Fig. 1. Scheme of experimental set-up



Card 3/3

45035
S/109/63/008/001/016/025
D266/D308

24.2322
24.1716

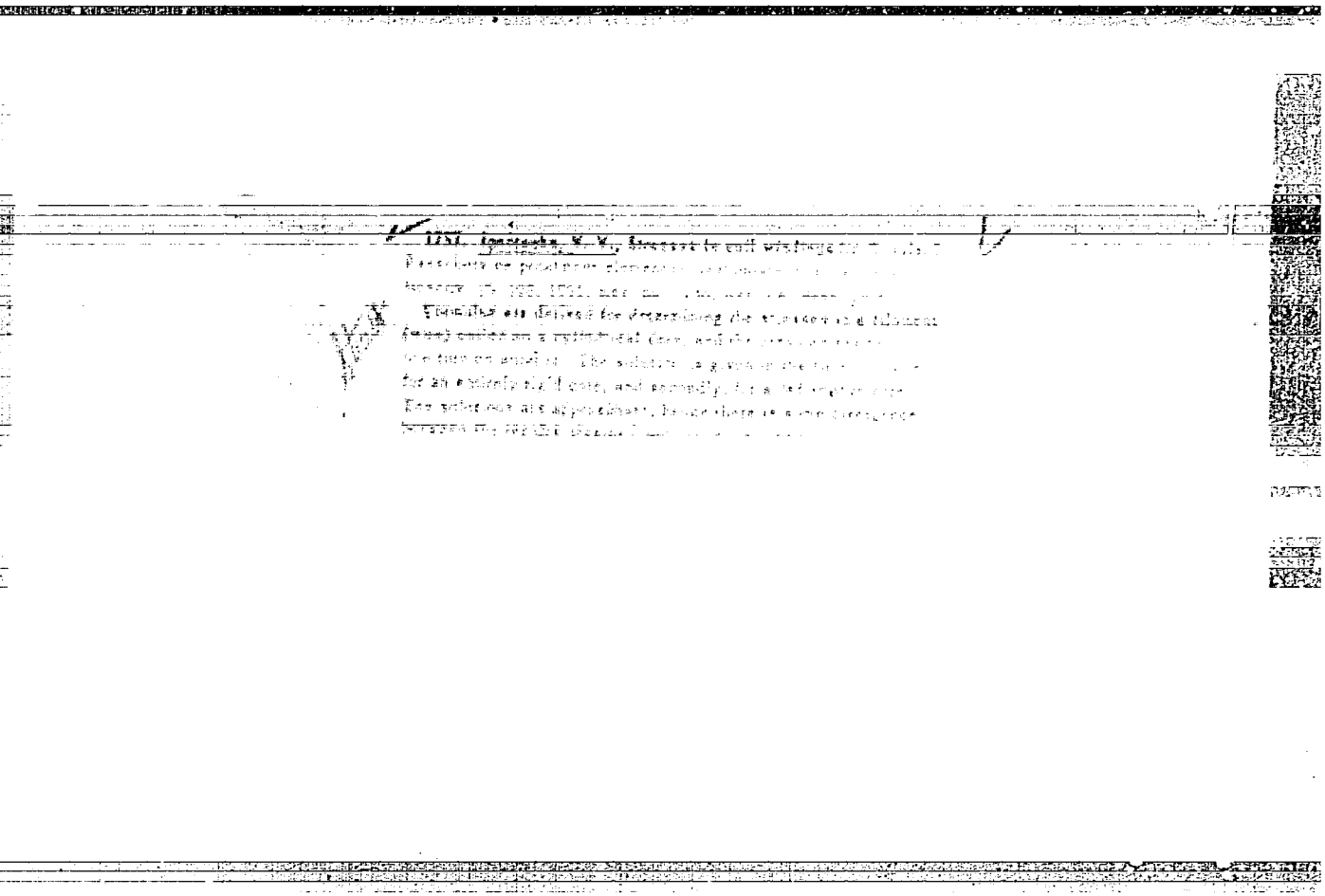
AUTHOR: Ignatenko, V. P.

TITLE: Formation of a relativistic strip beam of charged particles

PERIODICAL: Radiotekhnika i elektronika, v.8, no.1, 1963, 127-129

TEXT: The purpose of the paper is to determine theoretically the shape of electrodes which can support a rectangular flow for very large accelerating voltages (V_a > 30 kV). Generality is restricted by the following assumptions: (1) The width of the beam is several times larger than its length; (2) the electric field is zero at the cathode; (3) the charged particles are emitted perpendicularly to the cathode with zero initial velocity. The author quotes his solution of Poisson's equation inside the beam (Radiotekhnika i elektronika, 1962, 7, 7, 1175). Substitution

Card 1/2



IGNATENKO, V.V., assistent

Developing the technology of the manufacture of twisted blades.
Izv.vys.ucheb.zav.;mashinostr. no.2:129-134 '58.
(MIRA 11:12)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche im. Baumana.
(Blades)

IGNATENKO, V.V., assistent

Nonlinear vibrations of flexible strings. Izv. vys. ucheb. zav.; mashinostr. no.11/12:15-21 '58. (MIRA 13:3)

1.Moskovskoye vysshoye tekhnicheskoye uchilishche im. Baumana.
(Elastic rods and wires--Vibration)

IGNATENKO, V. V., Cand Tech Sci -- (diss) "Non-linear vibrations in flexible thread." Moscow, 1960. 9 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Lenin and Order of Labor Red Banner Higher Technical College im Bauman); 150 copies; price not given; (KL, 17-60, 154)

IGN.TENKO, V.V.

Possible new method of filling interlacing. Tekst. prom. 20 no. 11:32-35 N '60. (MIRA 13:12)
(Weaving)

IGNATENKO, V.V., assistent

Dynamics of the sagging branch of the crawler tread. Izv. vys. ucheb. zav.; mashinostr. no. 3:3-10 '61. (MIRA 14:5)

1. Moskovskoye vysshaye tekhnicheskoye uchilishche imeni Baumana.
(Crawler tractors—Dynamics)

IGNATENKO, V.V., assistent

Variable stresses in a branch of chain transmission. Izv.vys.ucheb. zav.; mashinostr. no.4:27-33 '61. (MIRA 14:6)

1. Moskovskoye vysshaye tekhnicheskoye uchilishche imeni Baumana.
(Chains)

IGNATENKO, V.V., kand.tekhn.nauk

Analytic expression of the characteristics of a rubber-cord pneumatic shock absorber. Izv.vys.ucheb.zav.; mashinostr. no.7: 93-107 '63. (MIRA 16:11)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche imeni Baumana.

KRUTOV, V.I., doktor tekhn. nauk, prof.; ROMANENKO, N.T., kand. tekhn. nauk, dotsent; IGNATENKO, V.V., kand. tekhn. nauk, dotsent

Effect of masses connected with the servomotor piston on transient processes. Izv. vys. ucheb. zav.; mashinostr. no.5:87-93 '65. (MIRA 18:11)

1. Moskovskoye vysshaye tekhnicheskoye uchilishche im. Baumana.

ACCESSION NR: AP4012959 S/0020/64/154/004/0760/0762

AUTHOR: Ignatenko, V.V.

TITLE: Exponential resolution for one-dimensional boundary value problems

SOURCE: AN SSSR. Doklady*, v. 154, no. 4, 1964, 760-762

TOPIC TAGS: exponential resolution, boundary value problem, one-dimensional boundary value problem, boundary value problem exponential resolution, differential equation, polynomial, mathematical analysis.

ABSTRACT: An approximate solution to a one-dimensional boundary value problem can be reduced to a selection of an approximating solution of a function which precisely satisfies the boundary condition at the boundaries of the finite interval from 0 to l. In addition to the boundary conditions, it should also as precisely as possible satisfy the differential equation

Card 1/4

ACCESSION NR: AP4012959

$$F(y, s) = 0 \qquad (1)$$

of the boundary value problem. The solution is sought in the form an n-th order polynomial

$$y = \sum_{0}^{n} a_k \frac{s^k}{k!}, \qquad (2)$$

where a_k are the values for the derivatives of this polynomial at the point $s = 0$. Considering the natural equality of the ends of the interval whose length is l, it is to advantage to represent both boundaries of the interval as equivalent in equation (2). By grouping the terms of the initial polynomial, a polynomial of the form $y = \sum_{0} b_k \frac{(s - l)^k}{k!}$ can be obtained, wherein the coefficients b_k are connected by an n+1 system of linear equations with initial coefficients a_k. Now, the leading coefficients can be excluded from both forms of the solution, and a polynomial can be obtained which

Card 2/4

ACCESSION NR: AP4012959

will be simultaneously expressed through the values of the derivatives on both ends of the interval. In such polynomials, regardless of the function of their order, every preceeding polynomial is contained in the succeeding ones. This permits a simplification of the results to a case of an infinite degree with the result that an exponential resolution of the function can be obtained by boundary values in a series of the form

$$\left\{ \times \sum_{m=0}^{\infty} B_{nm}\left(1-\frac{s}{l}\right)^m \frac{s^m}{l^m}\left(1-2\frac{s}{l}\right)4^m, \right. \tag{3}$$

where

$$A_{1m} = \frac{(-1)}{2^{m+1}\,m!}\prod_{0}^{m-1}(2k-1), \quad A_{2m} = \frac{(-1)}{2^{m+2}\,m!}\prod_{0}^{m-1}(2k-1),$$

$$A_{3m} = \frac{(-1)}{3!\,2^{m+3}\,m!}\cdot\frac{m-2}{2m-3}\prod_{0}^{m-1}(2k-1);\ldots$$

$$B_{0m} = \frac{(-1)}{2^m\,m!}\prod_{0}^{m}(2k-1); \quad B_{1m} = \frac{(-1)}{2^{m+1}\,m!}\prod_{0}^{m}(2k-1)\ \ldots$$

Card 3/4

ACCESSION NR: AP4012959

The boundary conditions of the boundary value problem, the number of which is equal to the p of differential equation (1), are expressed in an approximate solution through the constants a_k and b_k. The differential equation (1) can be precisely satisfied on both ends of the interval by means of such constants through the use of two algebraic equations of the type

$$F(0) = 0, \quad F(l) = 0. \qquad (4)$$

Orig. art. has: 6 equations and 1 table.

ASSOCIATION: Moskovskoe vy*sshyeye tekhnicheskoe uchilishche im. N.E. Baumana (Moscow Higher Technical Academy)

SUBMITTED: 10Oct62 DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: MM NO REF SOV: 004 OTHER: 000

Card 4/4

TOSENKO, Yu.A. starshiy dorozhnyy master (st. Yesil', Karakskoy dorogi);
IGNATENKO, V.Ya.; MYL'NIKOV, I.S.

Letters to the editor. Put' i put.khoz. 6 no.5:46 '62.
(MIRA 15:4)

1. Glavnyy bukhgalter Starokonstantinovskoy distantsii, Yugo-Zapadnoy dorogi (for Ignatenko). 2. Zamestitel' nachal'nika Kurganskoy distantsii puti, Yuzhno-Ural'skoy dorogi (for Myl'nikov).
(Railroads—Track)

SAYENKO, L.F.; YEGOROV, A.I.; IGNATENKO, Ye.I.; MOSKALEV, P.N.

Production of In^{114*} preparations of high specific activity. Izv. AN SSSR. Ser. fiz. 29 no.7:1236 Jl '65. (MIRA 18:7)

MIRONOV, V.Ye.; RUTKOVSKIY, Yu.I.; IGNATENKO, Ye.I.

Bromide complexes of zinc. Zhur.neorg.khim. 10 no.12: 2639-2647 D '65. (MIRA 19:1)

L 31110-66 EWT(m)/ETC(f)/EWG(m)/T/EWP(t)/EWP(z)/EWP(b) IJP(c) DS/JD/HW
ACC NR: AP6002218 (A) SOURCE CODE: UR/0080/65/038/012/2827/2831

AUTHOR: Barmashenko, I. B.; Ignatenko, Ye. Kh.; Zakharchenko, I. P.

ORG: Kiev Polytechnic Institute (Kiyevskiy politekhnicheskiy institut)

TITLE: Hydrogen overvoltage on a porous cathode during electrolysis of sodium hydroxide and sodium chloride solutions

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 12, 1965, 2827-2831

TOPIC TAGS: sodium hydroxide, sodium chloride, ~~electrochemistry~~, cathode polarization, ~~iron~~ nickel alloy, ferroalloy, metal powder, electrode, electrolysis

ABSTRACT: The effect of salt concentration on overvoltage (ηH_2) of porous iron-nickel electrode was studied during electrolysis of aqueous solutions containing sodium hydroxide or sodium chloride. The disc-like electrodes (30-31 mm in diameter and 5 mm in thick) were prepared by pressing mixtures of iron and nickel powders (2000 kg/mm^2) followed by calcination for 1 hr at 750-800° C in hydrogen atmosphere. The electrolysis experiments were conducted at 20°, 40°, 60°, and 80° C using 0.1-10 normal aqueous salt solutions and current density of 20-500 A/m^2. In the case of

Card 1/3 UDC: 541.13 + 546.33'131

L 31110-66
ACC NR: AP6002218

electrolysis of NaCl solutions, the hydrogen overvoltage was found to be substantially lower for porous iron-nickel electrodes than for nonporous iron-nickel electrodes. The dependence of hydrogen overvoltage upon NaOH concentration is shown in Fig. 1. It was found that for electrolysis of NaOH solutions using porous Ni-Fe cathode, the lower the hydrogen overvoltage the higher is the NaOH concentration. At a given NaOH concentration the η_{H_2} declines with increasing temperature and it increases with increasing current density. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 07/11/ SUBM DATE: 01Feb64/ ORIG REF: 013/ OTH REF: 000

Card 2/3

L 31110-66

ACC NR: AP6002218

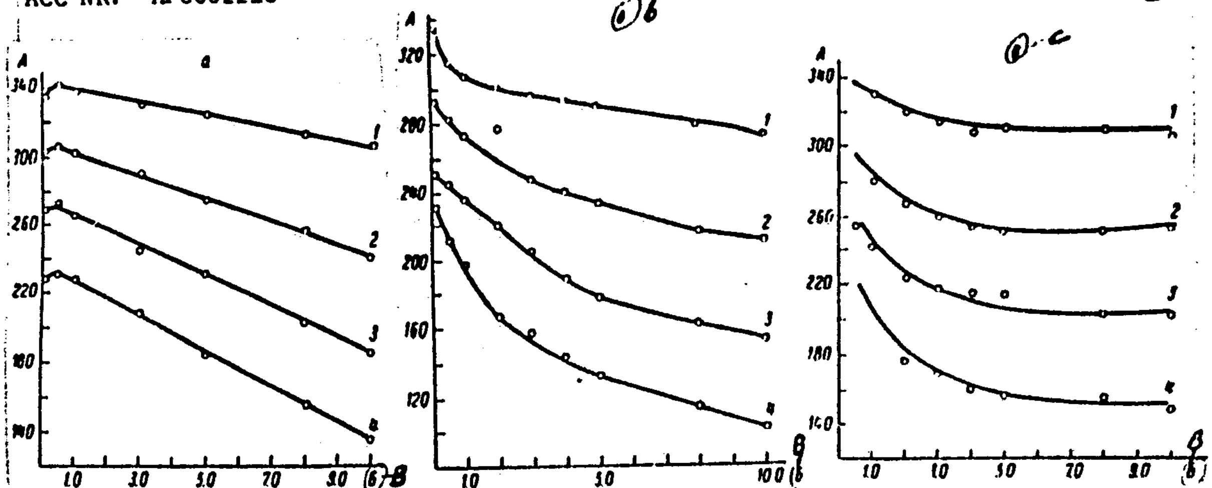


Fig. 1. Hydrogen overvoltage as a function of NaOH concentration during electrolysis of various temperatures at 600 A/m^2 current density using iron-nickel electrodes. A - hydrogen overvoltage (mV); B - normality of NaOH solution; 1 - 20° C; 2 - 40° C; 3 - 60° C; 4 - 80° C; a - 20 % Ni + 80 % Fe electrodes; b and c - 80 % Ni + 20 % Fe electrodes; a and c - noncalcined porous electrodes; b - calcined porous electrode.

Card 3/3

IGNATENKO, YE. KH.

5(4) PHASE I BOOK EXPLOITATION SOV/2216

Soveshchaniye po elektrokhimii. 4th, Moscow, 1956.

Trudy...; [sbornik] (Transactions of the Fourth Conference on Electrochemistry; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 868 p. Errata slip inserted. 2,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk.

Editorial Board: A.N. Frumkin (Resp. Ed.) Academician, O.A. Yesin, Professor; S.I. Zhdanov (Resp. Secretary), B.N. Kabanov, Professor, S.I. Zhdanov (Resp. Secretary); B.N. Kabanov, Professor; Ya. M. Kolotyrkin, Doctor of Chemical Sciences; V.V. Losev, P.D. Lukovtsev, Professor; Z.A. Solov'yeva; V.V. Stender, Professor; and G.M. Florianovich; Ed. of Publishing House: N.G. Yegorov; Tech. Ed.: T.A. Prusakova.

PURPOSE: This book is intended for chemical and electrical engineers, physicists, metallurgists and researchers interested in various aspects of electrochemistry.

COVERAGE: The book contains 127 of the 138 reports presented at the Fourth Conference on Electrochemistry sponsored by the Department of Chemical Sciences and the Institute of Physical Chemistry, Academy of Sciences, USSR. The collection pertains to different branches of electrochemical kinetics, double layer theories and galvanic processes in metal electrodepositon and industrial electrolysis. Abridged discussions are given at the end of each division. The majority of reports not included here have been published in periodical literature. No personalities are mentioned. References are given at the end of most of the articles.

Ksenzhek, O.S., and V.V. Stender (Dnepropetrovsk Institute of Chemical Technology imeni F.E. Dzerzhinskiy). Polarization of Graphite Electrodes During the Anodic Separation of Chlorine 823

Buyanova, N. Ye., and G.A. Tsyganov (Institute of Chemistry, Academy of Sciences, UzSSR). Hydrogen Overvoltage at Electrodes With Homogeneous Surface 827

Rakov, A.A., K.I. Nosova, and E.V. Kasatkin (Physicochemical Institute imeni L. Ya. Karpov). Mechanism of the Simultaneous Electrochemical Formation of Persulfuric Acid, Ozone and Oxygen at a Platinum Anode in Sulfuric Acid Solutions 834

Volkov, G.I., Z. L. Klitsa, Ye. K. Susorova and N. V. Cherkasina. Influence of Surface-Active Substances on the Rate of Decomposition of Sodium Amalgams 841

Il'in, G. G., and V.I. Skripchenko (Novocherkassk Polytechnic

Card 33/34

Transactions of the Fourth Conference (Cont.) SOV/2216

Institute imeni S. Ordzhonikidze). Influence of the Nature of an Electrolytic Cation on the Anode Process During the Electrolysis of Alkaline and Alkaline-Earth-Metal Chloride Solutions 845

Voronin, N.N. (Deceased), B. G. Prikhodchenko, A.A. Yedigaryan, O. V. Izbekova, I. G. Pavlenko, Ye. Kh. Ignatenko, and S.V. Tkachuk (Kiyev Polytechnic Institute). Electrolytic Reduction of Oxygen at Porous Cathodes 849

Discussion [N. A. Fedotov, R.I. Kaganovich, Ye. M. Kuchinskiy, G.N. Kokhanov, and contributing authors] 856

AVAILABLE: Library of Congress

TM/ec
9-30-59

Card 34/34

VORONIN, N.N.; IGNATENKO, Ye.Kh.; BARMASHENKO, I.B.

Electrochemical behavior of activated porous nickel electrodes. Zhur.prikl.khim. 34 no.9:2043-2047 S '61. (MIRA 14:9)
(Electrodes, Nickel) (Electrochemistry)

L 23412-65 EWG(j)/EWT(m)/EPF(c)/EPR/EWP(t)/EWP(b) Pr-4/Pg-4 IJP(c) JD
ACCESSION NR: AP5000507 S/0080/64/037/011/2415/2420

AUTHOR: Ignatenko, Ye. Kh.; Barmashenko, I. B.

TITLE: Cathodal preparation of hydrogen peroxide

L 13412-65
ACCESSION NR: AP5000507

medium becomes less alkaline. While the average decomposition of H_2O_2 in 5N KOH is 0.02 gram-equivalents/hour, in 0.5N KOH it is 0.033 gram-equivalents/hour. However, the fastest decomposition (0.05 gram equivalents/hour) results from the ...

NO REF SOV: 005 OTHER: 007

Card 2/2

IGNATENKO, Yu. F.

1. BEDEL', V. K.; VYKHUKHOLEV, V. F.; IGNATENKO, Yu. F.

2. USSR (600)

4. Peredel'skiy, K. V.

7. Improving the quality of technical literature ("Casting non-ferrous alloys in metal forms." K. V. Peredel'skiy. Reviewed by V. K. Bedel', V. F. Vykhukholev, Yu. F. Ignatenko). Lit. proizv. No. 4, 1953.

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

IGNATENKO, Yu.F.

ORLOV, N.D., kandidat tekhnicheskikh nauk, redaktor; IGNATENKO, Yu.F., redaktor; MOSKVIN, P.P., redaktor; MATVEYEVA, Ye.N. tekhnicheskiy redaktor

[Pressure casting; proceedings of a scientific-technical session] Lit'e pod davleniem; trudy nauchno-tekhnicheskoi sessii. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1955. 121 p. (MLRA 8:6)
(Die casting)

IGNATENKO, YU.F.

ORLOV, N.D., kandidat tekhnicheskikh nauk, redaktor; IGNATENKO, Yu.F., inzhener, redaktor; TELIS, M.Ya., inzhener, redaktor; CHURSIN, V.M., kandidat tekhnicheskikh nauk, redaktor; CHERNYSHEVA, N.P., redaktor izdatel'stva; EL'KIND, V.D., tekhnicheskiy redaktor

[Form casting of copper alloys] Fasonnoe lit'e mednykh splavov. Pod obshchei red. N.D.Orlova. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1957. 205 p. (MLRA 10:8)

1. Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Liteynaya sektsiya
(Copper alloys--Metallurgy)

IGNATENKO, Yu.F., red.; GARMASH, L.M., otv. za vypusk; SUKHAREVA, R.A., tekhn.red.

[New technological processes and recommendations on the design of molds for precision casting] Novye tekhnologicheskie protsessy i rekomendatsii po konstruirovaniiu form pri proizvodstve tochnogo lit'ia. Moskva, 1959. 74 p. (Moskovskii dom nauchno-tekhnicheskoi propagandy. Peredovoi opyt proizvodstva. Seriia: Progressivnaia tekhnologiia mashinostroeniia, vyp. 14/15). (MIRA 14:1)

(Molding (Founding)) (Precision casting)

VORONIN, N.N. [Voronin, M.M.], prof.; IGNATENKO, Ye.Kh., kand. tekhn. nauk; BARMASHENKO, I.B., kand. tekhn. nauk

Oxygen depolarization on porous electrodes with activated nickel. Khim. prom. [Ukr.] no.2:19-22 Ap-Je '63. (MIRA 16:8)

1. Kiyevskiy politekhnicheskiy institut.

IGNATENKO, Yu.F., inzh.

Increasing requirements of alloy qualities in die casting. Vest. mashinostr. 44 no.1:65-66 Ja '64. (MIRA 17:4)

L 40266-66 EWT(1)/EWP(m)/EWT(m) WW/JW

ACC NR: AP6020559 SOURCE CODE: UR/0414/66/000/001/0112/0116

AUTHOR: Trokhan, A. M. (Novosibirsk); Kuznetsov, I. L. (Novosibirsk); Baranova, G. R. (Novosibirsk); Ignatenko, Yu. V. (Novosibirsk)

ORG: none

TITLE: Photoelectric method of measuring the turbulence of high-temperature flows

SOURCE: Fizika goreniya i vzryva, no. 1, 1966, 112-116

TOPIC TAGS: photoelectric method, high temperature research, flow temperature measurement, turbulent flow

ABSTRACT: A recording method is described which permits determining the amplitude spectrum of the velocity fluctuations of a turbulent flow and to find the mean flow velocity. The investigated section of the flow with tracking particles is projected by means of an optical system onto a flat screen with two parallel slits. In the case of a low-temperature flow this section is illuminated by an intense external source, whereas at a sufficiently high temperature the self-luminescence of the particles can be used. When the image of the luminous particle strikes the slit, a voltage pulse arises at the output of a photomultiplier which is then amplified and discriminated. The output pulse of the channel connected with the first slit of the screen along

UDC: 536.47+532+507

Card 1/2

L 40266-66 APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R0005 33(
ACC NR: AP6020559

the flow is used to trigger the sweep of the oscillograph; the pulse of the second channel is sent to the input of the amplifier. When the image of the luminous particle strikes the second slit a bright flash appears on the screen of the oscillograph. Since the velocity of various particles in a turbulent flow is dissimilar, the bright flashes arise at various distances from the place of triggering, grouping about a point corresponding to the most powerful transit time of the particles between the slits. Photographing of the screen of the oscillograph with a long exposure (about 5 min) and subsequent photometering of the negative yields the probability density of the flashes on the screen. Hence it is easy to derive the amplitude spectrum of longitudinal velocity fluctuations of the flow. This method can be used to obtain local values of turbulence not only in cold flows and transparent flames, but also in optically opaque media. In this case a beam of fast electrons is used to irradiate the tracking particles and the x-radiation emitted by the particles upon entering the irradiated region is recorded. Recording of the transit time between two fixed points is accomplished as in the optical variant described. Orig. art. has: 4 figures.

SUB CODE: 20/ SUBM DATE: 23Nov65/ ORIG REF: 002/ OTH REF: 000

Card 2/2

ACC NR: AP7000649 SOURCE CODE: UR/0414/66/000/003/0129/0132

AUTHOR: Kuznetsov, I. L. (Novosibirsk); Baranova, G. R. (Novosibirsk); Ignatenko, Yu. V. (Novosibirsk); Trokhan, A. M. (Novosibirsk)

ORG: none

TITLE: Effect of combustion on turbulence level

SOURCE: Fizika goreniya i vzryva, no. 3, 1966, 129-132

TOPIC TAGS: turbulent combustion, combustion characteristic, combustion product, turbulent flow

ABSTRACT: A photoelectric method for measurement of turbulence in the inner zone of the flame and in the combustion products is described. A single-channel system was utilized with a probing beam of sufficiently small diameter (1.1 mm) to measure turbulence of small wavelengths. The experiments were conducted using sheet flame, inducing turbulence with grids of several cell sizes. It was established that gas flow without burning maintained a much lower turbulence level. Correcting for the dissipation effects, the highest turbulence level was found to be at the end of combustion and combustion products zones. Results of measured velocity fluctuations are given for a set of mixtures of propane-butane with air and hydrogen. The velocity fluctuation spectrum was found to be Gaussian, as in the case of noncombustible flow in the isothermal case.

UDC: 536.46+532.507

Card 1/2

ACC NR: AP7000649

It is clear from the level of turbulence observed in the experiments that turbulence must be taken into account to provide a complete description of the combustion process. Orig. art. has: 4 figures, 1 formula.

SUB CODE: 07,20 / SUBM DATE: 04Apr66/ ORIG REF: 003/ OTH REF: 001

Card 2/2

IGNATENKOV, L.T.

Incline signals may be removed but not everywhere. Put' i put.khoz. no.11:37 N '58. (MIRA 11:12)

1. Starshiy inzh. lokomotivnogo depo stantsii Chernigov Yugo-Zapadnoy dorogi.

(Railroads--Signaling)

IGNATENOK, F. N.

IGNATENOK, F. N. -- "FILLING IN OF DRAINAGE SYSTEMS AND MEANS OF PREVENTING IT." SUB 29 DEC 52, MOSCOW INST OF ENGINEERS OF WATER ECONOMY IMENI V. R. VIL'YAMS (DISSERTATION FOR THE DEGREE OF CANDIDATE IN TECHNICAL SCIENCES)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952

14(2) SOV/99-59-4-4/10

AUTHOR: Ignatenok, F.V., Candidate of Technical Sciences

TITLE: The Trenchless Drain Layer (Bestransheynyy drenoukladchik)

PERIODICAL: Gidrotekhnika i melioratsiya, 1959, Nr 4, pp 26-31 (USSR)

ABSTRACT: The article describes a trenchless drain layer developed by the Kirovskaya lugobolotnaya stantsiya (Kirov Meadow and Swamp Testing Station) between 1954 and 1957. The new drain layer's second, improved model, with a sled made of metal, was manufactured by the Kotel'nicheskiy motororemontnyy zavod (Kotel'nich Engine Repair Plant). The new machine brings a great saving to melioration by eliminating such costly operations as digging trenches and filling them with earth. It simply cuts a slit-like groove in the ground into which drains are pressed downward through a chute. The groove then automatically fills up with earth in

Card 1/4

The Trenchless Drain Layer

a short time due to the earth's elasticity. Apart from drain pipes, gravel, crushed bricks, slag, chopped wood, sand, humus-rich earth, and other materials promoting water seepage can be used for drainage. The new drain layer was tested for strength by a Kirov oblast' committee and the Primolomskaya LMS, Kotel'nich Rayon, Kirov Oblast'. The tests for performance took place at the Tokayevskoye Swamp ("Iskra" Kolkhoz) in 1957. The test consisted of the drain layer cutting a slit-like groove of 10 x 85 cm. To prevent the traction engine - anS-80-type tractor- from bogging down, another tractor of this type was added. The drains were laid at an average speed of 1,200 m per hr. The drainage costs came to an average of 1.69 rubles per m which is 2-3 times cheaper than using clay pipes for covered drainage in the Latvian SSR. The author

The Trenchless Drain Layer

is of the opinion that every MMS, LMS, and RTS is able to manufacture such a drain layer itself by using conventional tools of its repair shop . A drain layer will require only 1.7 tons of iron, with manufacturing costs amounting to a maximum of 6,355.37 rubles. In May 1958, the Nauchno-tekhnicheskiy sovet MSKh SSSR (Scientific and Technical Council of the MSKh USSR), /Sektsiya gidrotekhniki i melioratsii/ (Section for Hydraulic Engineering and Melioration) has studied the experimental data of the above drain layer and concluded that its chief drawback was inadequate feeding of drain pipes carried out manually and resulting in poorly-jointed pipes. On the other hand, the Council conceded that the new machine's chief advantage is speedy laying of drain pipes into quicksand and swampy grounds, with expen-

The Trenchless Drain Layer

sive timbering work to prop up the trench walls from crumbling no longer necessary. There is 1 photo and 5 diagrams.

ASSOCIATION: BSKhA, the Town of Gorki

Card 4/4

IGNATENOK, Filipp Vasil'yevich

[Agricultural land improvement] Sel'skokhozyaistvennye melioratsii. Minsk, Gos.izd-vo sel'khoz.lit-ry BSSR, 1963. 291 p. (MIRA 17:4)

IGNATENOK, Filipp Vasil'yevich; STOL'NIKOVA, G., red.

[Subsurface drainage of soils] Zakrytyi drenazh pochv. Moskva, Kolos, 1965. 199 p. (MIRA 19:1)

IGNATENOK, P.G.

USSR/Chemistry - Conversions

Card 1/2 Pub. 40 - 8/27

Authors : Knunyants, I. L.; Lin'kova, M. G.; and Ignatenok, P. G.

Title : Conversions of mercaptoamino acids. Part 1. Isodimethylcysteine and its derivatives

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 54-61, Jan-Feb 1955

Abstract : Data are presented on the addition reaction of sulfur chlorides and alkylthiochlorides to dimethyl acrylic acid and its ester. In contrast to the addition reaction of sulfur chlorides to olefins, which results in the formation of symmetrical sulfides, the addition to dimethylacrylic acid and its esters is concluded by the formation of stable sulphene chlorides.

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Inst. of Org. Chem.

Submitted : April 9, 1954

Card 2/2 Pub. 40 - 8/27

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 54-61, Jan-Feb 1955

Abstract : It was found that the reaction between the addition products and ammonia results in the formation of alpha-mercapto-beta-aminoisovaleric acid which is an isomer of natural dimethycysteine and some of its derivatives. Two references: 1 German and 1 US. (1905 and 1946).

IGNATESCU, M.

NICOLAU, Gh.St., academician; BLUMENTHAL, M.,; FELDNER, M.,; PALA, G.,; Ignatescu, M.,; DANILA, P.

Preliminary studies of the therapeutic use in dermatology of drugs affecting the central nervous system. Probl. ter., Bucur. Vol 1:7-15 1954.

(MAGNESIUM SULFATE, ther. use
skin dis., mechanism of action)
(CENTRAL NERVOUS SYSTEM, eff. of drugs on
magnesium sulfate in ther. of skin dis.)
(SKIN, dis.
ther., magnesium sulfate)

RUMANIA UDC: 576.851.5:613.287.

IONESCU, Gh., Dr, IENISTEA, C., Dr, IONESCU, Cornelia, Biologist, IGNATESCU, N., Dr, and MAN, T., Medical Assistant, of the State Health Inspectorate (Inspectoratul Sanitar de Stat), Bucharest, and MANN, V., Dr, of the "Bucharest" Dairy Products Factory (Fabrica de Produse Lactate "Bucuresti").

"Frequency of B. cereus in Fresh and Pasteurized Milk."

Bucharest, Microbiologia, Parazitologia, Epidemiologia, Vol 11, No 5, Sep-Oct 66, pp 423-430.

Abstract [Authors' English summary modified]: In a study of the frequency of occurrence of B. cereus in 108 samples of milk, the authors found positive results in 72.4 percent of the fresh milk samples, 86.7 percent of the bottled pasteurized milk, and 100 percent of the bulk pasteurized milk (directly from the pasteurizing machine). It was not possible to establish a correlation between the presence of B. cereus and fecal contamination of the milk. A total of 213 strains of B. cereus were identified; resistance of the germs was lower in fresh than in pasteurized milk.

Includes a bibliography with 34 entries, of which 3 Rumanian, 10 German and 21 Western. -- Manuscript submitted 19 April 1964.

1/1

GONTEA, I., Professor; IONESCU, N., MD; SUTZOU, Parascheva, MD; DUMITRACHE, S., MD; POZNAN, Victoria; RUSINESCU, Alice.

Bucharest, Viena, No 6, Nov-Dec 63, pp 507-515

"The Alimentation of Workmen on the Building Sites in Bucharest."

IGNATIK, A.

Automation in crushed stone plants. Na stroi. Ros. no.8:30-31 Ag '61. (MIRA 14:9)

1. Nachal'nik otdela avtomatiki i priborov Leningradskogo filiala Vsesoyuznogo nauchno-issledovatel'skogo instituta stroitel'nogo i dorozhnogo mashinostroyeniya.
(Stone, Crushed) (Automatic control)

IGNATIK A.F.

IGANTIK, A.F.; KROTOV, V.I.

Soldering of mineral and ceramic tool bit to the steel shank. Stan.i instr. 24 no.7:33 Jl '53. (MLRA 6:8)

(Metal cutting)

IGNATIK, A.F., insh.; TSUKERNIK, Z.S., insh.

Using radioactive pickups in the automatization and regulation of stone-materials production. Stroi.i dor.mashinostr. 4 no.9: 28-30 S '59. (MIRA 12:11)
(Radioisotopes--Industrial applications)
(Automatic control)
(Building materials industry)

IGNATIK, A.F., inzh.

Using radioactive transmitters in automatizing stone crushing operations. Stroi.i dor.mashinostr. 4 no.10:22-25 O '59. (MIRA 13:2)

(Stone, Crushed) (Automatic control)
(Radioactive substances--Industrial applications)

IGNATIYEV, S.

Lenin Prize winner. Kryl.rod. 11 no.6:6-8 Je '60. (MIRA 13:7)
(Airplanes--Testing)
(Kokkinaki, Vladimir Konstantinovich)

IGNATJEW, Jerzy

Application of the unilateral isotope thickness gauge for thickness measurements of walls accessible from one side only. Nukleonika 7 no.7/8:524-525 '62.

1. Instytut Podstawowych Problemow Techniki, Polska Akademia Nauk, Zaklad Badan Izotopowych, Warszawa.

GNATYUK, D.I.; SILIN, B.I.; IGNATKIN, I.A., red.; KASIMENKO, A.K., red.; KOSARIK, D.M., red.; OLEKSYUK, I.N., red. [deceased]; STAROVOYTENKO, I.P., red.; HERBZINA, Z., red.; LYAMKIN, V., tekhn.red.

[Sights of the Ukraine] Dostoprimechatel'nosti Ukrainy. Izd.2., perer. i dop. Kiev, Gos.izd-vo polit.lit-ry USSR, 1960. 797 p. (MIRA 14:3)

(Ukraine--Guidebooks)

IGNATKIN, Ivan Aleksandrovich [Ihnatkyn, Ivan Aleksandrovich]; LYSENKO, Nikolay Nikolayevich; MYSHKO, Dmitriy Ivanovich; MOSENZON, I., red.; MEYEROVICH, S., tekhn. red.

[Kiev; guide and reference book] Kiev; putevoditel'-spravochnik. Kiev, Gos. izd-vo polit. lit-ry USSR, 1962. 349 p. (MIRA 15:4)

(Kiev--Guidebooks)

IGNATKIN, Ivan Aleksandrovich; LYSENKO, Nikolay Nikolayevich; MYSHKO, Dmitriy Ivanovich

[Kiev; a guidebook and manual] Kiev; putevoditel'-spravochnik. Kiev, Izd-vo polit. lit-ry Ukrainy, 1964. 349 p. (MIRA 17:11)

KUCHERENKO, Ye.T.; IGNATKO, V.P.

One form of an impeded discharge in a magnetic field. Radiotekh. i elektron. 9 no.1:177-179 Ja '64. (MIRA 17:3)

1. Kiyevskiy gosudarstvennyy universitet im. Shevchenko.

IGNATKOV, D.

Fertility in the western province of the Ukraine and prospective development. Visnyk AN URSR 24:38-46 D '53. (MLRA 7:3)
(Ukraine--Agriculture) (Agriculture--Ukraine)

IGNATKOV D Ya.

M

Country : USSR
Category: Cultivated Plants. Fruit. Berries.

Abs Jour: RZhBiol., No 11, 1958, No 49077

Author : Ignatkov, D. Ya.
Inst : Acad. Sciences, Ukrainian SSR
Title : Orchards and Their Development in Donbas.

Orig Pub: Visnik AN URSR, 1957, No 6, 36-42

Abstract: Data are compiled on the specific weight of various fruit species in plantations according to economic categories, the productivity of the gardens, the expenditure of labor, production costs and the monetary profit of the orchards. Explained are ways of developing horticulture in the framework of the sixth five years plan.
T.S. Fedosenko

Card : 1/1

M-141

S/181/61/003/001/009/042
B102/B212

AUTHORS: Ignatkov, V. D. and Kosenko, V. Ye.

TITLE: Evaporation of germanium in tellurium vapors

PERIODICAL: Fizika tverdogo tela, v. 3, no. 1, 1961, 89-93

TEXT: When studying the diffusion of tellurium from the vapor phase in germanium, the authors detected that the evaporation rate of germanium was anomalously high compared to that in vacuo. This paper reports on this phenomenon which has so far been unknown in semiconductors. Germanium discs were used for these investigations (diameter: 18 mm; thickness: 1.5-2.0 mm; resistivity: 45 ohm.cm). The specimens were ground and etched (100μ deep) and heated to 800°C within 1/2 hr in quartz ampoules with a vacuum of 10^{-5} mm Hg; then, they were cooled in dry, pure air, pure tellurium was added, and the ampoules were evacuated again. After this, the specimens in the ampoule were heated up to different temperatures by using two heaters (Fig. 1). Temperature was measured with Pt-PtRh thermocouples (error: ±3°C). The evaporation rate of germanium has been

Card 1/5

Evaporation of germanium in...

determined from the loss in weight of the specimen (with a known surface) (accuracy of measurement: ±0.1 mg). The specimen and its surface have been studied very carefully. An X-ray examination of the Ge crystals showed that their lattice constant was equal to that of pure germanium up to ±0.05 A. As the tellurium concentration in the crystals was nearly equal to that in vapor (10^{17} cm^{-3}), they had n-type conductivity. Attempts to obtain larger crystals by varying temperature and duration of heating failed; the largest crystals were 2·3 mm. An investigation of the surface showed that evaporation took place unevenly (cf. Fig. 3). Looking at the picture (enlarged by a factor of 200) one can see that heating of germanium in tellurium vapor is a method to examine the Ge lattice structure. The dependence of the evaporation rate upon the tellurium vapor pressure has been investigated in the range of 10^{-7}-10^{2} mm Hg at a Ge temperature of 900°C; Fig. 4 gives the results. The evaporation rate W is independent of pressure above 1 mm Hg. The temperature dependence is given by: $W = W_0 \exp(-E/RT)$; E is the evaporation temperature, and W_0 is a constant. The plotted data ($W = f(1/T)$) represent a straight line. The slope of the line at $6 \cdot 10^{-1}$ mm Hg corresponds to 12.7 kcal/mole, which is 1/7 of the

Card 2/5

Evaporation of germanium in...

evaporation heat of Ge in vacuo. At 900°C, W of Ge in tellurium vapor is two orders of magnitude greater than that of Ge in vacuo, and at 700°C even four orders of magnitude. This effect is ascribed to the fact that tellurium diffuses several μ into germanium, and the evaporation of Ge takes place from a film having tellurium and germanium concentrations of the same order. A test with sulphur and selenium vapors showed the same effect, but not as intensive. However, the evaporation rate of Ge is still higher than in a vacuum. Engineer R. M. Khaykin made the electron diffraction studies, and Engineer A. N. Kvasnitskaya grew the Ge single crystals. The authors thank V. Ye. Lashkarev, Academician of the AS UkrSSR, for discussions. There are 6 figures and 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Institut fiziki AN USSR Kiyev (Institute of Physics, AS UkrSSR, Kiyev)

SUBMITTED: May 31, 1960

Card 3/5

S/181/61/003/001/009/042
B102/B212

Evaporation of germanium in...

Legend to Fig. 1: 1) and 2) heaters; 3) quarts ampoules; 4) Ge specimen; 5) tellurium; 6) and 7) thermocouples.

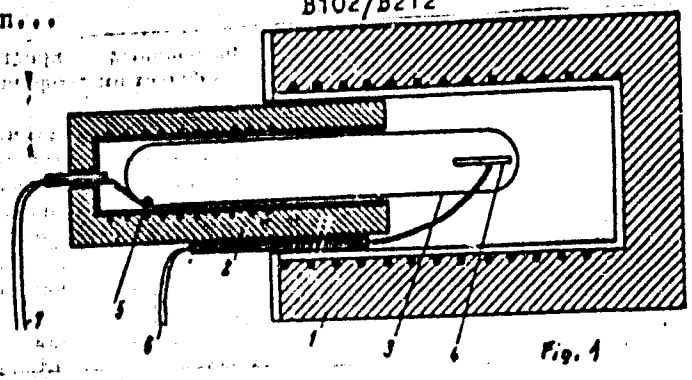


Fig. 1

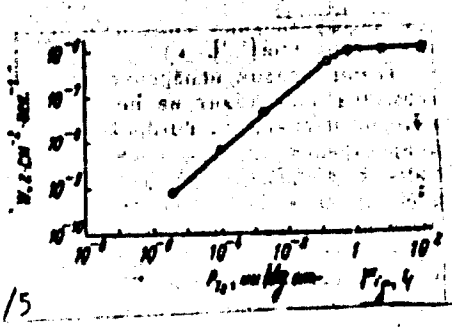


Fig. 4

Card 4/5