NEKRASH, I.L., insh.

New plans for automatic signaling at railway crossings with automatically controlled crossing gates. Avtom., telem.i sviaz 2 no.4:10-15 Ap '58. (MIRA 12:12)
(Railroads--Signaling) (Railroads--Crossings)

AFANAS'YEVA, S.I., inzh.; DOLGINA, M.S., inzh.; NEKRASH, I.L., inzh.

New circuits of automatic warning signalization. Avtom., telem. i sviaz' 2 no.6:1-7 Je '58. (MIRA 11:6)
(Railroads—Signaling)

NEKRASH, I.L., inzh.; DOLGINA, I.S., inzh.

Signaling at the corssings of railroad station areas.
Avtom.telem. i sviaz' 3 no.12:6-10 D '59.
(MIRA 13:4)
(Railroads--Signaling) (Railroads--Crossings)

NEKRASH, L.V., professor.

Theories of statistics and probabilities. Vest. Len. un. 2 no.2: 61-78 F '47. (MLRA 9:6)
(Mathematical statistics) (Probabilities)

PUCHKOVSKIY, N.V., kand. tekh. nauk; NEKRASH, N.L., kand. ekon. nauk; PEREL'MAN, L.I., inzh.; BAL'MAKOVA, I.K.

Payment only for the finished building is a progressive form of settlement in the construction industry. Biul. tekh. inform. po stroi. 5 no.4:13-15 Ap '59. (MIRA 12:8)
(Construction industry--Accounting)

USSR/General Problems of Pathology - Immunity. S-1

Abs Jour : Referat Zhur - Biologiya. No 16, 1958, 73334

Author : Gordienko, A.N., Kisleva, V.I., Saakov, B.A., Bondarev, I.M., Nekrashas, E.I.

Inst : *

Title : Method of Isolation of the Carotid Sinus and Further Proof for the Reflex Action of Antibodies.

Or, Pub : Biul. eksperim. biol. i meditsiny, 1956, 42, No 11, 70-72

Abstract : The vascular-nerve bundle of the neck was exposed, and on the inner side of the carotid sinus the sinus nerve was prepared. The arteries were tied together with the adjoining tissues. The sinus nerve remained intact above the tied vessels. Into the carotid sinus of a dog, 0.2 ml of radioactive typhoid vaccine was introduced, containing 100-400 microcurie P^{32}, in one ml. and 4 billion microbial bodies. The activity of blood and the agglutination titer was determined before the vaccination and after - - -

Card 1/2 - 5 -

*1. Iz kafedry patofiziologii (zav. - prof. A.N.Gordiyenko) Rostovskogo meditsinskogo instituta, (dir.G.A.Ivakhnenko).

USSR/General Problems of Pathology - Immunity

3-1

Abs Jour : Referat Zhur - [illegible]ya. II [illegible]

5 minutes, after 3 days- only the vaccination titer. The initial agglutination titer was 1:20-1:80; after 7 days 1:160-1:2560. Vaccination after severance of the sinus nerve showed a slightly reduced increase in agglutination titer (1:160-1:640).

Card 2/2

- 6 -

NEKRASHAS, E. I., Cand Med Sci (diss) -- "The permeability of [illegible] capillaries in peptonic and traumatic shock and traumatic shock complicated by radiation disease". Vil'nyus, 1960. 14 pp (Min Higher and Inter Spec Educ USSR, Vil'nyus State U im V. Kapsukas), 230 copies (KL, No 15, 1960, 114)

LAUTSEVICHUS, L.Z. [Laucevivius, E.], dotsent; NEKRASHAS, E.I. [Nekrasas.E], kand.med.nauk ; MOTEYUNAYTE, Ye.S. [Motejunaite, E.]

Effect of ethyl blockade on the permeability of the histohematic barrier; according to data of a radioactive phosphorus study. Vrach. delo no.9: [illegible] 58. (MIRA 16:10)

1. Kafedra gospital'noy terapii (zav. - dotsent L.Z. Lautsevichus) Vil'nyusskogo universiteta.
(ETHYL CHLORIDE—THERAPEUTIC USE) (PHOSPHORUS ISOTOPES) (CAPILLARIES —PERMEABILITY)

NEKRASHENKO, P.N., inzhener; MEYKLYAR, M.V., inzhener.

Flame torch TKZ for burning ASh dust. Rab.energ. 3 no.5:4-5 My '53. (MLRA 6:5)

(Furnaces--Construction)

NEKRASHENKO P.N.

BOL'SHAKOV, V.A., inzhener; MEYKLER, M.V., inzhener; NEKRASHENKO, P.N., inzhener.

Torch burners for pulverized coal. Elek.sta. 25 no.11:55-56 N '54.
(Burners) (Furnaces) (MLRA 7:11)

NEKRASHEVICH, A.A., zootekhnik

Prushany Hatchery. Ptitsevodstvo 8 no.8:36-38 Ag '58.
(MIRA 11:10)

(Prushany--Incubation)

PHASE I BOOK EXPLOITATION SOV/4017

Akademiya nauk Ukrainskoy SSR. Otdeleniye fiziko-matematicheskikh nauk.
Sessiya po mirnomu ispol'zovaniyu atomnoy energii.

Trudy (Transactions of the Session on Peaceful Uses of Atomic Energy) Kiyev, Izd-vo AN Ukrainskoy SSR, 195[illegible]. [illegible] p. 2,[illegible] copies printed.

Resp. Ed.: M. V. Pasechnik, Doctor of Physics and Mathematics; Editorial Board: A. K. Val'ter, Academician, Academy of Sciences Ukrainskaya SSR; [illegible] Nemets, Candidate of Physics and Mathematics; M. V. Pasechnik, Doctor of Physics and Mathematics; Ed. of Publishing House: [illegible] Nemenko; Tech. Ed.: [illegible] Rakhlina.

PURPOSE: This collection of articles is intended for physicists and scientific personnel working in nuclear research.

COVERAGE: The articles in this collection discuss linear proton accelerators, electron accelerators, electrostatic accelerators, magnetron lenses, the interaction of charged particles and neutrons with nuclei, the applications of tagged atoms in physics research, and experimental methods. Some of the articles are descriptions of already existing nuclear installations and experimental apparatus. No personalities are mentioned. There is a bibliography of Soviet and non-Soviet sources at the end of most of the articles.

NEK

SINELNIKOV, K. D., ZEYDLIK, P. M., FAYNBERG, Ya. G., NEMKASHEVICH, A. M., ZAVORODNOV, O. G., SAFRONOV, B. G., DUBOVOY, L. V. and LUTSENKO, E. I.

"Experimental Research of High Frequency Properties of Plasma and Magnetohydrodnynamic Shock Waves."

paper to be presented at 2nd UN Intl. Conf. on the peaceful uses of Atomic Energy, Geneva, 1 - 13 Sep 58.

26.2332

S/058/60/[illegible]
A005/A001

Translation from: Referativnyy zhurnal, Fizika, 1960, No. 6, p. [illegible], # [illegible]

AUTHORS: Sinel'nikov, K.K., Zeydlits, P.M., Nekrashevich, A.M., B[illegible] L. I., Shutskever, Ya.S., Akshanov, B.S., Kovpak, N.Ye., Legostayev, K.A., Akhiyezer, A.I., Lifshits, I.M., Paynberg, Ya.B., Rozentsveyg, L.N., Lyubarskiy, G.Ya., Kaganov, M.I., Pargamanik, L.E.

TITLE: A 20.5-Mev Linear Proton Accelerator /9

PERIODICAL: Tr. Sessii AN UkrSSR, po mirn. ispol'zovaniyu atomn. energii. Kiyev, AN UkrSSR, 1958, pp. 5-15

TEXT: The physical substantiation of the parameter choice is presented and the design of a linear proton accelerator with a drift tube at 20.5 Mev energy is described; the accelerator was constructed in the Fiziko-tekhnicheskiy institut AN UkrSSR (Institute of Physical Engineering of the AS UkrSSR). The main computational data of the accelerator are the following: the operational wave length is λ = 215 cm; the injection energy is 1.7 Mev; the length of the accelerator is 1,446.8 cm; the synchronous phase is 20°, the length of the first half tube is 4.875 cm; that of the last one is 16.725 cm, the length of the first gap is

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A 20.5-Mev Linear Proton Accelerator

3.380 cm; that of the last one is 11.150 cm, the length of the first drift tube is 0.145 cm; that of the last one is 32.955 cm. Altogether the number of drift tubes is 50, that of the half tubes is 2; the acceleration system begins and ends with the latter. At the entrance of every drift tube, focusing grids are fixed consisting of parallel tungsten wires of 0.07 mm thickness, their total geometr. transmittance amounts to 30%. The drift tubes are installed within the resonator by means of a suspension system; the resonator is made as a 1,446.8-mm . [illegible] 16-face prism. The resonator is fed from 20 h.f. generators. The [illegible] resonator in the loaded state is equal to $6.5 \cdot 10^4$ in consequence of which the r.f. power needed for accelerating particles to the rated energy amounts to [illegible] Mw. An electrostatic generator operating by pulses with the pulse duration [illegible] at about 1 ma current intensity and 1.7 mv voltage serves as [illegible] principal circuit and the design of the individual accelerating [illegible]

ASSOCIATION: Fiz.-tekhn. in-t AN UkrSSR (Physico-Engineering Institute of the Ukrainian Academy of Sciences)

A.P. Fatyev

Translator's note: This is the full translation of the origina. R[illegible]

Card 2/2

[illegible]

PHASE I BOOK EXPLOITATION SOV/[illegible]

International Conference on the Peaceful Uses of Atomic Energy. 2d., Geneva, 1958

Doklady sovetskikh uchenykh; yadernaya fizika (Reports of Soviet Scientists; Nuclear Physics) Moscow, Atomizdat, 1959. 538 p. (Series: Its: Trudy, Vol. 1) 8,000 copies printed.

Eds. (Title page): A.I. Alikhanov, Academician; V.I. Veksler, Academician; and [illegible], Candidate of Physical and Mathematical Sciences; Ed. of this volume: [illegible] and [illegible], Candidates of Physical and Mathematical Sciences; Ed. (Inside book): [illegible]; Tech. Ed.: [illegible].

PURPOSE: This collection of articles is intended for scientific research workers and other persons interested in nuclear physics. The volume contains 43 papers presented by Soviet scientists at the Second Conference on Peaceful Uses of Atomic Energy, held in Geneva in September 1958.

COVERAGE: It is divided into two parts. Part I contains 17 papers dealing with plasma physics and controlled thermonuclear reactions, and Part II contains 26 papers on nuclear physics, including problems of particle acceleration and of cosmic ray physics. The first paper by L.A. Artsimovich presents a review of Soviet work on controlled thermonuclear reactions. The remaining papers in Part I deal with particular problems in this field.

Papers in Part II deal in detail with various problems in nuclear physics, such as the fission of heavy atoms and their isotopes, and with the study of cosmic radiation by means of artificial earth satellites and rockets, described in a paper by S.N. Vernov. The Russian-language edition of the proceedings of the conference is published in 16 volumes. The first 6 volumes contain all the papers presented by Soviet scientists as follows: Volume (1), Yadernaya fizika (Nuclear Physics); Volume (2), Yadernyye reaktory i yadernaya energetika (Nuclear Reactors and Nuclear Power); Volume (3), Yadernoye goryucheye i reaktornyye metally (Nuclear Fuel and Reactor Metals), Volume (4), Khimiya radioelementov i radiatsionnykh prevrashcheniy (Chemistry of Radioelements and of Radiation Transformations); Volume 5, Radiobiologiya i radiatsionnaya meditsina (Radiobiology and Radiation Medicine); Volume (6) Polucheniye i primeneniye izotopov (Production and Use of Isotopes). The other 10 volumes contain selected papers presented at the Conference by non-Soviet scientists. In the present volume discrepancies between the English and Russian language edition of the proceedings have been noted in three articles where the texts are not identical; viz; Andrianov, et al, "High Current Pulsed Discharge"; Akhiyezer, et al, "High Frequency Plasma Oscillation"; and Bogolyubov, "Investigations of the Many-body Problem". The serial numbers of reports 2302 and 2504 are reversed in the English edition. Report 2211, by Sinel'nikov, et al, is numbered 2536 in the English edition.

TABLE OF CONTENTS:

Reports of Soviet Scientists; Nuclear (Cont.) SOV/[illegible]

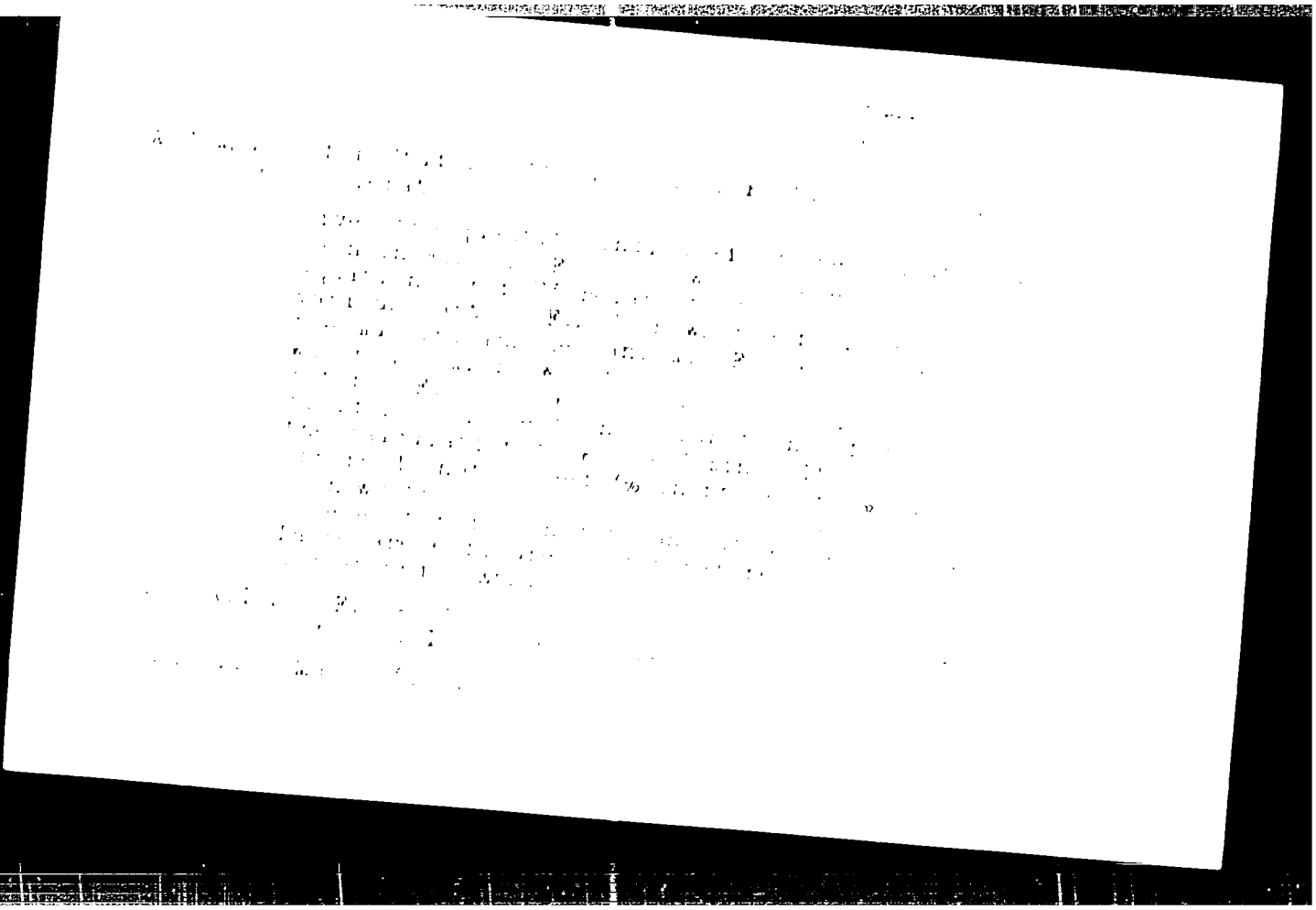
Card 3/13

AUTHORS: Kharchenko, I. F., [illegible], F. M., [illegible]kraspevich, A.M. and Zeydlits, P. M.

TITLE: A Computer [illegible] Linear Electron A[illegible] [illegible]dovaniya [illegible]

ORIGINAL: [illegible]

ABSTRACT: Th[illegible] of [illegible] and [illegible] spectrum [illegible] phase motion [illegible] particle. The z axis [illegible] wavelength [illegible] to the accelerating field, [illegible] of the particle and [illegible] the speed [illegible] E_1 [illegible] wavelength [illegible] and (4) [illegible] combination [illegible]



APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001136

FAYNBERG, Ya.B.; KHIZHNYAK, N.A. [Khyzhniak, M.A.]; Silenok, G.A. [Sylenok, Ho.O.]; BEREZIN, A.K.; MAKR/.SHEVICH, A.M. [Mekrashevych, O.M.]

Spiral wave guide with an artificially anistropic dielectric. Part 1. Ukr.fiz.zhur. 4 no.4:451 Jl-Ag '59. (MIRA 13:4)

1. Khar'kovskiy gosudarstvennyy universitet im.Gor'kogo. (Wave guides) (Dielectrics)

BEREZIN, A.K.; NEKRASHEVICH, A.M. [Nekrashevych, O.M.]; SILENOK, G.A. [Sylenok, H.O.]; FAYNBERG, Ya.B.; KHIZHNYAK, N.A. [Khyzhniak, M.A.]

Spiral wave guide with an artificially anisotropic dielectric. Part 2. Ukr.fiz.zhur. 4 no.4:460-464 Jl-Ag '59. (MIRA 13:4)

1. Khar'kovskiy gosudarstvennyy universitet im. Gor'kogo.
(Wave guides) (Dielectrics)

FAYNBERG, Ya.B.; NEKRASHEVICH, A.M. [Nekrashevych, O.M.]

Modulation of linear accelerators of heavy particles by means of slow electrons. Ukr.fiz.zhur. 4 no.6:803-804 N-D '59.
(MIRA 14:10)

1. Fiziko-tekhnicheskiy institut AN USSR.
(Particle accelerators)

LYUBARSKIY, G.Ya. [Liubars'kyi, H.IA.]; MEKHRASHEVICH, A.M.; ROZENTSVEYG, L.M. [deceased]

Semiempirical method for calculating the accelerated system of a linear proton accelerator with a standing wave. Ukr.fiz.zhur. 5 no.3:308-318 My-Je '60. (MIRA 13:8)

1. Fiziko-tekhnicheskiy institut AN USSR.
(Protons) (Particle accelerators)

S/861/62/000/000/004/022
B125/B102

AUTHORS: Lyubarskiy, G. Ya., Nekrashevich, A. M., Rosentsveyg, L. M. (Deceased)

TITLE: A semi-empirical method of calculating the acceleration system in a standing-wave linear accelerator

SOURCE: Teoriya i raschet lineynykh uskoriteley; sbornik statey. Fiz.-tekhn. inst. AN USSR. Ed. by I. V. Kukoleva. Moscow, Gosatomizdat, 1962, 81 - 93

TEXT: The present semi-empirical calculation of a proton linear accelerator (volume resonator exciting standing E_{01} waves) avoids the extremely difficult calculation of the field distribution in resonators that have axially distributed shielding tubes. These tubes shield the protons from the influence of the decelerating electric field. This accelerator was designed and constructed between 1947 and 1950 in the Fisiko-tekhnicheskiy institut AN USSR (Physicotechnical Institute AS UkrSSR). Its main problem is to combine radial with longitudinal stability. Radial stability is attained by nets at the front end of the shielding tubes. The resonator is subdivided into

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A semi-empirical method of...

sections with one shielding tube each. According to A. M. Nekrashevich, the frequencies of these sections can be varied in a manifold manner by attaching metal discs on the shielding tubes. The eigenfrequency of the section with the shortest tube and discs at the end is equal to the eigenfrequency of the longest tube with discs at its center. The coefficients A and B in the equations of motion of the ion beam are transformed to

$$\left.\begin{aligned} A &= \frac{1}{L}\int_{-L/2}^{L/2} E_z(z)\sin\frac{2\pi z}{L}\,dz;\\ B &= \frac{1}{L}\int_{-L/2}^{L/2} E_z(z)\cos\frac{2\pi z}{L}\,dz. \end{aligned}\right\} \qquad (2a)$$

where L is the period of the accelerating system. The field in the accelerating gaps is practically equal to the electrostatic field between the shielding tubes. It is, therefore, simulated with the aid of the volume variant of the electrostatic bathtube. Measurements for L = 12, 16,...56 cm give

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S/861/62/000/000/004/022
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$$A_1 = \frac{A}{\bar{E}} = \sin \pi a - \frac{2\pi}{L}\left(P \sin \pi a + Q \cos \pi a\right), \qquad (4),$$

$$P = \int_0^L \Phi(\xi) \sin \frac{2\pi\xi}{L} d\xi, \quad Q = \int_0^L \Phi(\xi) \cos \frac{2\pi\xi}{L} d\xi. \qquad (4a),$$

$$B_1 = \frac{B}{\bar{E}} = \cos \pi a - \frac{2\pi}{L}\left(P \cos \pi a - Q \sin \pi a\right). \qquad (5),$$

where $\bar{E} = (1/L_n) \int E_z dz$. The experimental results for L in the interval L = 12 - 56 are described well by $P = 0.691 + 0.592 \cdot 10^{-1} \cdot L$; $Q = -0.272 + 0.118L - 0.248 \cdot 10^{-3} \cdot L^2$. The maximum permissible phase $\beta_{s\text{-max}}$ can be derived from

$$\operatorname{tg} \beta_{s\,max} = \frac{\frac{E_\Phi}{\bar{E}} \sin(\beta_{rp} + a\pi)}{2\pi Q_n + \frac{E_\Phi}{\bar{E}} \cos(\beta_{rp} + a\pi)}. \qquad (12)$$

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with the aid of

$$\frac{\beta_{s_n}}{\beta_{s_1}} \sim \frac{\lambda_n^{\Phi}}{\lambda^{\Phi}} \cdot \frac{L_1}{L_n} \sqrt{\frac{L_n Q_1 \sin \beta_{s_1}}{L_1 Q_n \sin \beta_{s_n}}}.$$

For $\beta_{s_1} = 20^0$, $L_1 = 16$ cm and $\bar{E} = 1.2 \cdot 10^4$ v/cm, the total length of the shielding tubes is found: $L = 1447.5$ cm. The dependence of L of the periods on their number n is nearly linear. This paper was written in 1948. There are 14 figures.

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S/861/62/000/000/005/022
B125/B102

AUTHORS: Sinel'nikov, K. D., Zeydlits, P. M., Nekrashevich, A. M., Shutskever, Ya. S. (Deceased), Akhiyezer, A. I., Faynberg, Ya. B., Lyubarskiy, G. Ya.

TITLE: The physical bases of the injector of the 10-Bev proton synchrotron

SOURCE: Teoriya i raschet lineynykh uskoriteley, sbornik statey. Fiz.-tekhn. inst. AN USSR. Ed. by T. V. Kukoleva. Moscow, Gosatomizdat, 1962, 94 - 108

TEXT: The linear accelerator discussed here is the injector of the proton synchrotron of the OIYaI. It furnishes a strong flux of accelerated particles in short pulses. The pulses are separated by relatively long intervals of time. The resonator, containing screening tubes, excites standing waves. It needs only a relatively small r-f power and it allows of synchronizing several generators feeding the accelerator. Simultaneous phase stability and radial stability of the accelerated bunch is achieved with the screening tubes and nets. The injection energy is 600 kev and the synchronous phase 20°. The generator wave length is 215 cm, the periods of

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the accelerator have the length $L_k = c\beta_k T$, where $T = \lambda/c$, and the mean effective field strength in all the gaps of the resonator is 19.9 kv/cm. The phase focusing effect is accompanied by radial defocusing. The critical phase $\varphi_{s\,max}$ lies between 54° and 71°; in the present case, $\varphi_{s\,max} > 2\varphi_s$. The utilization factor of the current injected should be increased by inserting a clystron-type buncher between injector and injecting accelerator. During one period of the r-f oscillations, the energies absorbed by a particle of phase φ and by the synchronous particle are different. The first term of the final particle energy at the accelerator output is the energy calculated, and the second term is the deviation from it. The relative energy spread is $0.3 \cdot 10^{-2}$ in the case considered here. Supplementary investigations are necessary to determine the spread in energy due to radial oscillations; in particular, the way the accelerating field E_z depends on the radius must be studied. The capture angle calculated for $\varphi_s = 20°$ has a minimum at $\varphi = 30°$. Currents of less than 10 ma have but little effect on capture during acceleration. Furthermore, the effect of the space charge on the radial stability of the accelerator discussed here is insignificant. The angle of

The physical bases of the...

S/861/62/000/000/005/022
B125/B102

divergence of the emitted bunch is about 0.15°, while its radius is 3 cm at the most. This paper was written in 1952. There is 1 figure.

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KHARCHENKO, I.F.; GRISHAYEV, I.A. [Hryshaiev, I.O.]; NEKRASHEVICH, A.M. [Nekrashevych, O.M.]

Energy and phase characteristics of a linear electron accelerator with a wave propagation phase velocity equal to the velocity of light. Ukr. fiz. zhur. 7 no.10:1051-1061 O '62. (MIRA 16:1)

1. Khar'kovskiy gosudarstvennyy universitet.
(Particle accelerators)

NEKRASHEVICH, G. A., inzh.

Electrostatic separation of feldspars. Trudy NIIStroikeramiki no. 19:92-107 '62. (MIRA 17:5)

NEKRASHEVICH, G.A., insh.

Electric separation of pegmatites. Stek.i ker. 19 no.11:23-27 N '62. (MIRA 15:12)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut stroitel'noy keramiki.

(Pegmatites)

NEKRASHEVICH, G.A.

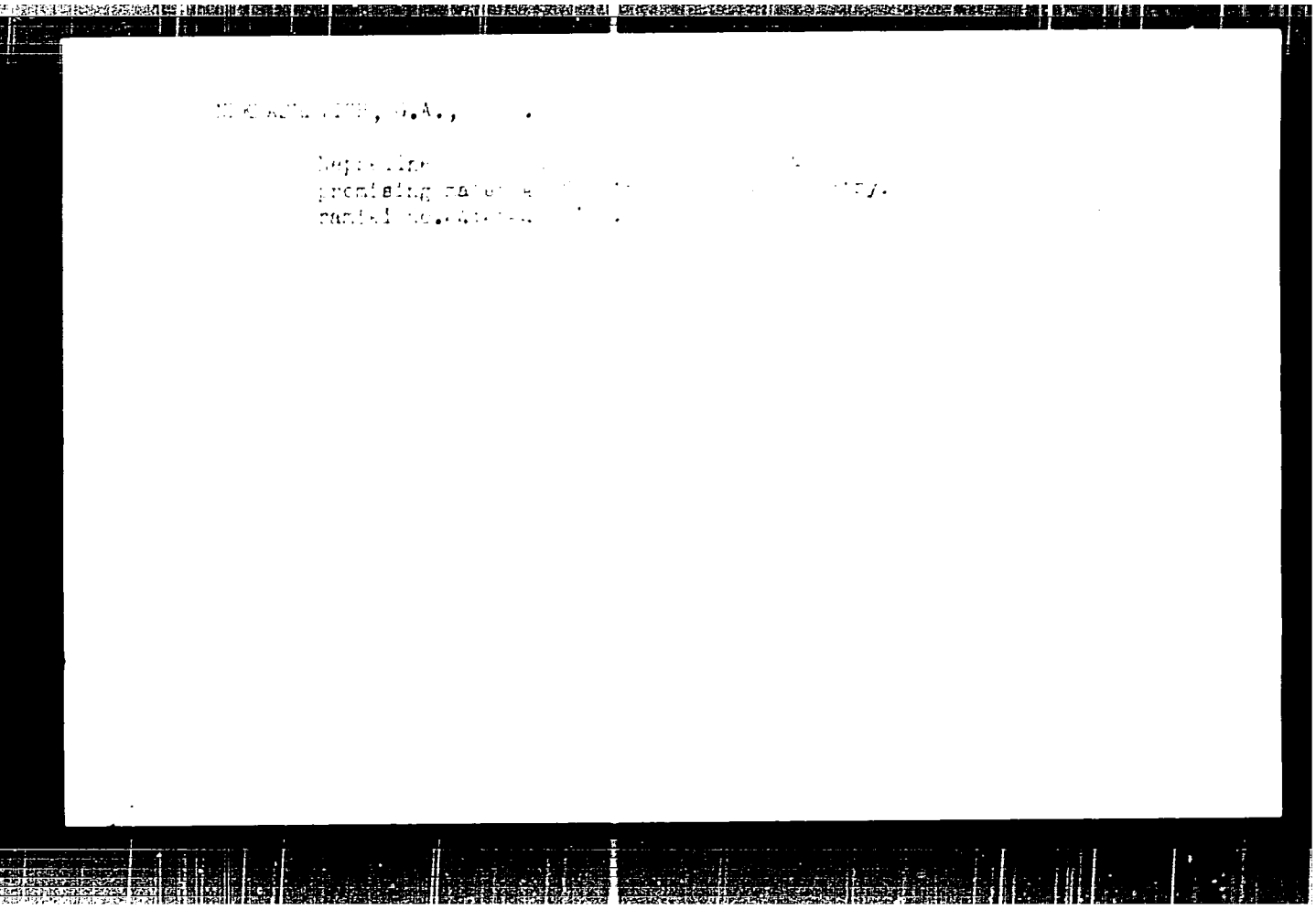
Electric separation of garnet and biotite. TSvet. met. 35 no.5:
76-78 My '62. (MIRA 16:5)
(Electrostatic separators)

NEKRASHEVICH, G.A., inzh.

Studying the electrical classification properties of a corona-discharge chamber separator. Trudy NIIStroikeramiki no.21:114-125 '63. (MIRA 17:2)

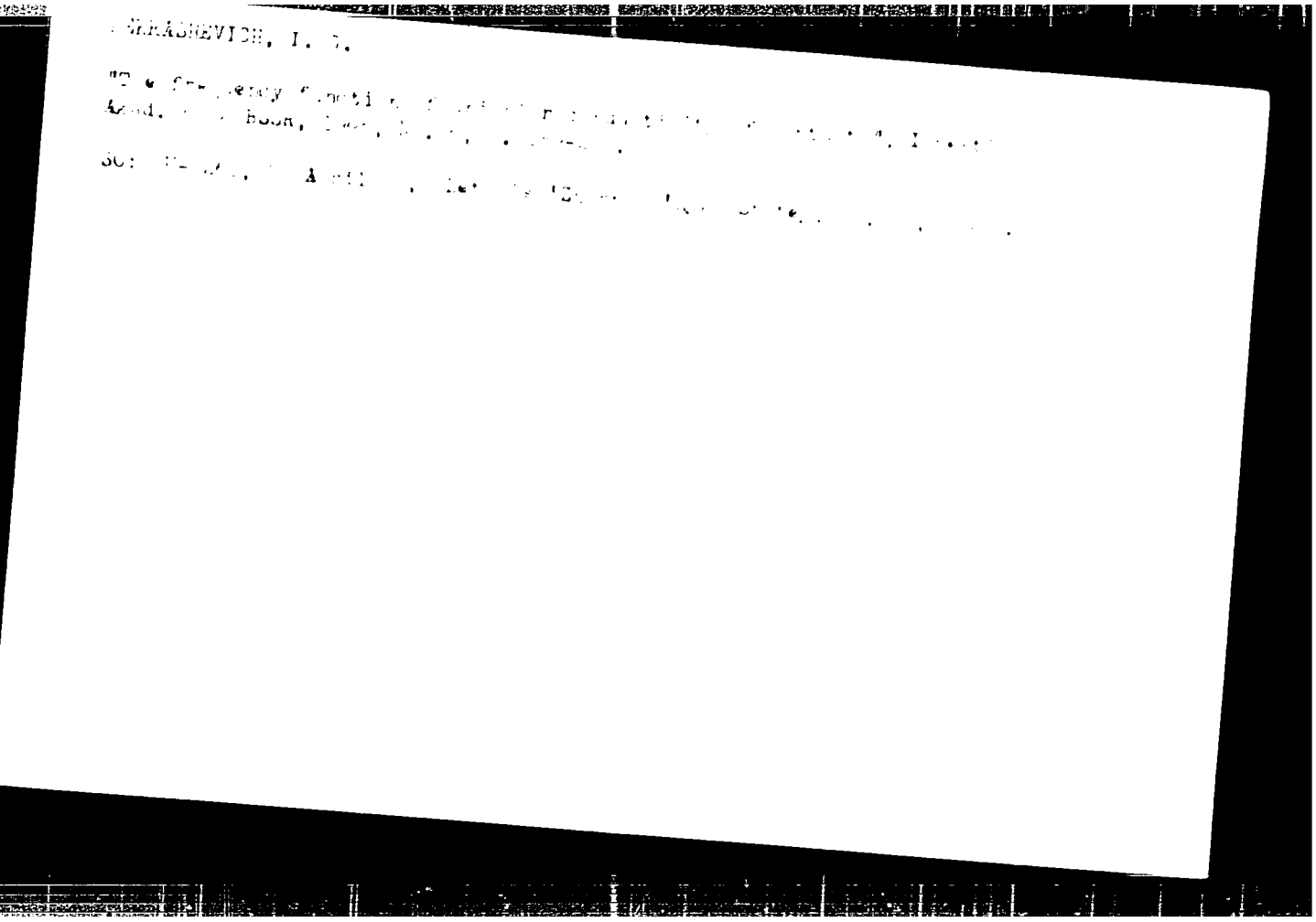
NEKRASHEVICH, G.A.

Electric separation of Chupa pegmatites. Obog. rud. 8 no.2: 10-12 '63. (MIRA 17:2)



SOROKIN, V.A.; NEKRASHEVICH, I.A.

Attachments used for cutting worms with variable pitch.
Mashinostroitel' no.3:29-31 Mr '57. (MLRA 10:5)
(Screw-cutting machines--Attachments)



MARASHEVICH, I. V.

"[illegible]

Acad. [illegible] Book, [illegible]

SO: [illegible]

PA 150T84

USSR/Physics - Rectification, Electrical Nov 49

"Frequency Dependency of Unipolar Conductivity of Contacts," I. G. Nekrashevich, I. Z. Fisher, Physico-tech Inst, Acad Sci Belorussian SSR, Chair of Gen Phys, Belorussian State U, Minsk, 9 pp

"Zhur Tekh Fiz" Vol XIX, No 11

Studied a crystallic rectifier, a metal point (steel) and lead sulfide, in a wide frequency range. Obtained a family of curves expressing dependency of rectified current upon amplitude of alternating voltage and upon frequency for contact points with electron and hole conductivity. Curves show that inversion of

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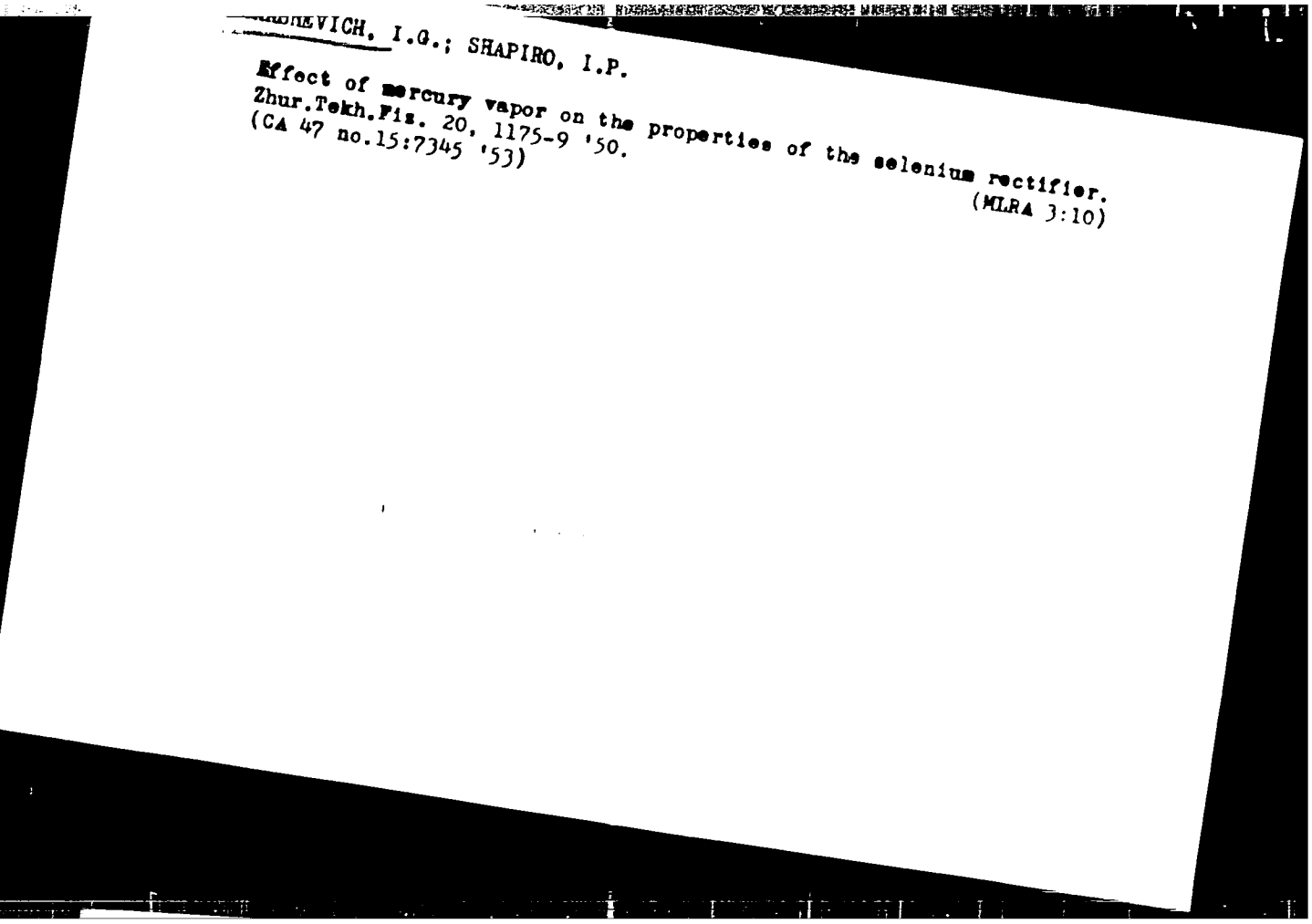
(Contd)

rectification occurs for definite relations between frequency and amplitude of alternating voltage applied. Gave a qualitative explanation of these phenomena on the basis of existing theories. Constructed a tube model, reproducing the inversion phenomena and its frequency dependency for the given crystallic rectifier, and analyzed this model. Submitted 25 May 48.

150T84

NEKRASHEVICH, I. G.



[illegible]EVICH, I.G.; SHAPIRO, I.P.

Effect of mercury vapor on the properties of the selenium rectifier. Zhur.Tekh.Fiz. 20, 1175-9 '50. (MLRA 3:10)
(CA 47 no.15:7345 '53)

NEKRASHEVICH, I.O., kandidat fizika-matematychnykh navuk, redaktor.
FEDARAU, F.I., kandydat fizika-matematychnykh navuk, redaktor
ALEKSANDROVICH, Kh., tekhredaktar.

[Radio and its role in the development of culture and technical progress] Radyio i iaho rolia u razvitstei kul'tury i tekhnichnaha pragresu. Minsk. Vyd-va AN BSSR, 1953. 30 p. (MLRA 8:2)
(Radio)

NEKRASHEVICH, I.G.

Threat measurement in the channel of a low-voltage capacitator discharge. Shor.nauch.trud.Fiz.-tekh.inst.AN BSSR no.1:111-119 '54.
(Electric discharges) (Electric spark) (MLRA 10:1)

KRASHEVICH, I.G.; BAKUTO, I.A.; MITSKEVICH, M.K.

Effect of suspended metal particles on the spark-over of liquid dielectrics at low voltages. Sbor.nauch.trud.Fiz.-tekh.inst. AN BSSR no.1:119-130 '54. (MLRA 10:1)

(Dielectrics) (Electric spark)

NEKRASHEVICH, I. G., AND MARTINKOV, YE. I.

Method of Spectrum Scanning for the Study of Nonstationary Processes

A method for studying of nonstationary electric and optic processes at contact or interruption of low tension currents was devised. As example results of scanning of a spectrum of 775 mF condenser discharge at a voltage drop of 500 V is given. (RZhFiz, No. 8, 1955)
Uch. Zap. Belorus. un-ta, No. 19, 1954, 108-115.

SO: Sum. No. 704, 8 Dec 55 - Supplementary Survey of Soviet Scientific Abstracts (17)

NEKRASHEVICH, I.G.

Effect of the electrode material on the size of mechanical impulse imparted to the lectrodes by a low-voltage discharge in a liquid medium. Sbor.nauch.trud. Fiz.-tekh.inst. AN BSSR no.2:158-166 '55. (MLRA 10:1)

(Electrodes) (Electric discharges)

SOV/112-57-5-10487

Translation from: Referativnyy zhurnal. Elektrotekhnika. 1957. Nr 5. p 136 (USSR)

AUTHOR: Nekrashevich, I. G., Bakuta, I. A.

TITLE: On the Problem of the Mechanism of Electric Erosion of Metals (K voprosu o mekhanizme elektricheskoy erozii metallov)

PERIODICAL: Sb. nauch. tr. fiz.-tekhn in-ta AS BelSSR, 1955, Nr 2, pp 167-176

ABSTRACT: The authors present a discharge mechanism that attempts to explain erosion caused by impulse low-voltage discharge According to the theory set forth in the article, after the formation of a channel, its current density changes only slightly during the greater part of the discharge period The erosion is considered to be a result of multiple explosions due to shifting of the channel within the discharge area and due to overheating of the metal by high-density currents Investigations of the sweeps of discharge spectrum have disclosed the existence of nonperiodical pulsations of spectral-line brightness and have corroborated, according to the authors, the veracity of the mechanism suggested by them.

A.I.K.

Card 1/1

NEKRASHEVICH, I.G.; MITSKEVICH, M.K.; BAKUTO, I.A.

Characteristic patterns in electric erosion phenomena. Sbor. nauch. trud. Fiz.-tekh. inst. AN BSSR no.2:177-189 '55. (MLRA 10:1)
(Electrodes)

123-1-782

Translation from: Referativnyy Zhurnal, Mashinostroyeniye, 1957, Nr 1, p. 118 (USSR)

AUTHORS: Nekrashevich, I. G., Mitkevich, S. P.

TITLE: Statistical Correlation of Impulse Discharge as a Factor in Shop-practice of Electric-erosion Processing of Metals (Rol statisticheskikh zakonomernostey impul'snogo razryada v praktike elektroerozionnoy obrabotki metallov)

PERIODICAL: Sbornik nauch. tr. Fiz.-tekh. in-ta, AN BSSR, 1955, Nr 2, pp. 209-220

ABSTRACT: Bibliographic entry.

Card 1/1

Nekrashevich, F. G.

Circular regularities of phenomena of electrical erosion of metals at low-voltage discharges in liquid. [illegible] rich and S. P. [illegible]ich. *Soviet. Phys. Tech. Phys.* 1, [illegible] (1956)(English translation).—See *C.A.* 51, 2422.

B. M. R.

NEKRASHEVICH, I. G.

1-4E2c
1-4E3b

18

Electric erosion decomposition of the steel-alloy couples on impulse discharges. I. G. Nekrashevich, I. A. Bakuto, and M. K. Miskevich. *Sborn. Nauch. Trudov Akad. Nauk Belorus. S.S.R., Fiz.-Tekh. Inst.* 1956, No. 3, 216–25.—The amt. of erosion produced on 5KhNT steel when sparking against electrodes made of Cu alloyed with up to 10% Al or Cd was detd. by plotting the area of erosion craters against the compn. of electrodes or plotting the magnitude of impulses against the compn. In one series of tests, only one discharge on the fresh surface was used; in the other repeated discharges on the same surface were recorded. With a fresh surface, the amt. of erosion of steel and the magnitude of mech. impulse increase about linearly with a greater concn. of Al and Cd. The amt. of electrode destruction is more or less a function of its brittleness and is also related to a higher content of alloy addn. The magnitude of erosion of electrodes which have been subjected to repeated elec. discharges might pronouncedly differ from that recorded on fresh electrodes. After repeated discharges, the working surface of a pair of electrodes becomes covered with a residue, the compn. and properties of which differ from those of the original metal. This leads to the change of the conditions under which the elementary discharge channel forms, in its turn affecting the e.d. at the bottom of the channel subsequently affecting the melting and explosion processes taking place on the impulse discharge. Peculiar stabilized layers are produced on both electrodes. Thickness and the compn. of the layers are different on both electrodes and remain, on the av., const. for a given electrode independently of the no. of discharges. J. D. Cut

NS

SOV 137-57-[illegible]-[illegible]52

Translation from: Referativnyy zhurnal. Metallurgiya, 1957, Nr [illegible], p 247, USSR

AUTHORS: Nekrashevich, I G., Bakuto, I A., Mitskevich, M Ye

TITLE: Aspects of Electrical Erosion of Porous Electrodes (Ob osobennostyakh elektricheskoy erozii poristykh elektrodov)

PERIODICAL: Sb. nauch. tr. Fiz.-tekhn. in-t AN BSSR, 1956, Nr 3, pp 227-233

ABSTRACT: An investigation is made of electrical erosion (EE) of porous electrodes (E) used as tools in electric-spark machining. The porous E are made by extrusion of Cu-Pb and Cu-Fe chip mixtures. The particles are not classified by size, and various mixtures are used. To obtain E of approximately identical porosity, equal initial volumes of chip are taken and they are reduced to identical volume by the press. Before testing, the extruded E are held for several hours in kerosene, which is used as the working medium. Investigation of the behavior of the E on the spark discharge is performed on a ballistic range. Measurement is made not only of the mechanical impulse communicated to the E upon a single discharge, but of the magnitude of the anode and cathode EE of extruded E and of the opposing

Card 1/2

Aspects of Electrical Erosion of Porous Electrodes

steel E The measurements are made for direct and reversed polarity with fluctuating and aperiodic types of discharge, the contour parameters being chosen so that the amplitude values of the currents in oscillating and aperiodic discharge remain identical It is found that the magnitude of EE of a steel E working in conjunction with a porous one is virtually independent of the composition of the porous E However the magnitude of the EE of the porous E declines as the Cu contents of the E rises and becomes negative meaning that the weight of the E increases Study under the binocular microscope of E surfaces subjected to EE shows the pores of the E to become filled with fused metal both from the opposing E and from the porous E itself As this occurs, irregularities are smoothed over somewhat, and a crust consisting of a mixture of materials from both E is formed It is shown that a rise in the number of discharges results in further change in the E surface consisting in a reduction in pore size and formation of a protective layer which is spongy in structure comprising a mixture of materials from both E The mechanical impulse transmitted to the porous E is greater than that of the solid The difference in the results for oscillating and aperiodic discharges is only quantitative It is noted that as the porosity of E declines their EE tends to approximate the EE of solid E

I. G

NEKRASHEVICH, I.G.; BAKUTO, I.A.

A method of accurate weighing. Sbor. nauch. trud. Fiz.-tekh. inst. AN BSSR no.3:234-237 '56. (MLRA 10:6)
(Weighing machines)

MEKRASHEVICH, I.G.

Thermomechanical phenomena in thin layers of semiconductors. Izv.AN SSSR.Ser.fiz.20 no.12:1533-1540 D '56. (MLRA 10:3)

1. Kafedra eksperimental'noy fiziki Belorusskogo gosudarstvennogo universiteta im. V.I.Lenina.
(Semiconductors)

NeKRASHevich I.G

621.315.616 : 537.528

33-15. SOME RELATIONSHIPS OF THE PHENOMENA OF THE ELECTRICAL EROSION OF METALS IN A L.V. DISCHARGE IN A LIQUID. I.G.Nekrashevich and S.P.Mitkevich. Zh. tekh. Fiz., Vol. 26, No. 1, 90-5 (1956). In Russian.

The erosion of the electrodes in a L.v. capacitor discharge in transformer oil was investigated. The weights of eroded electrode material were determined for Pb, Zn, Cu, Co, Ni, Fe, Al, Cr and W electrodes in various combinations. An approximate quantitative relationship for the erosion in discharges between electrodes of the same materials was found. A qualitative interpretation of the observed relationships of erosion between electrodes of different materials is presented.

Electrical Research Association

NEKRASHEVICH, I.G.

USSR/Electronics - Semiconductor Devices and Photoelements H-8

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 12393

Author : Nekrashevich, I.G.
Inst :
Title : Operation of Selenium Rectifiers at Audiofrequencies.

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 3, 560-567

Abstract : An investigation was made of the frequency of the rectified voltage for a selenium element (on an aluminum or steel base) in the frequency range from 50 to 20,000 cycles.

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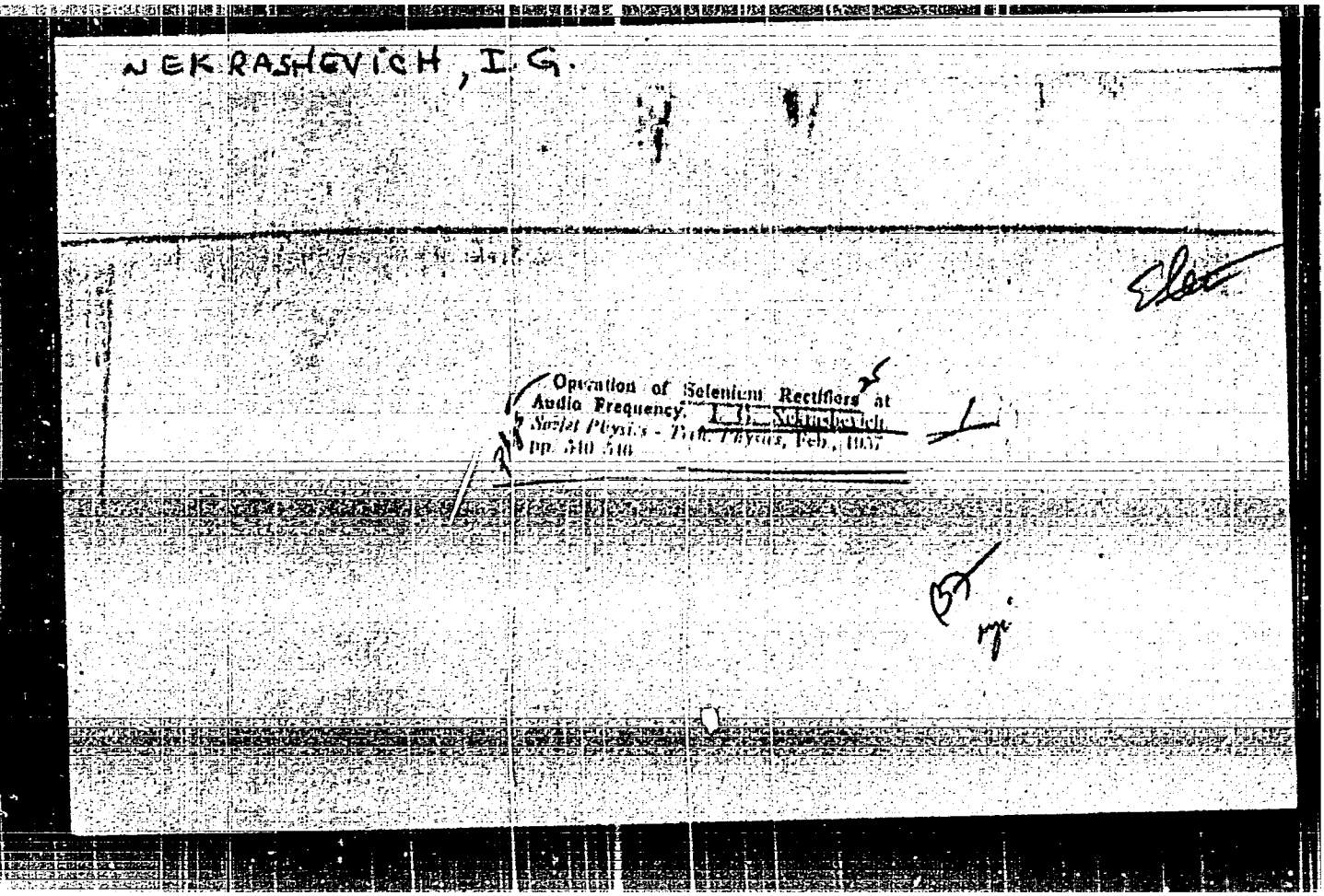


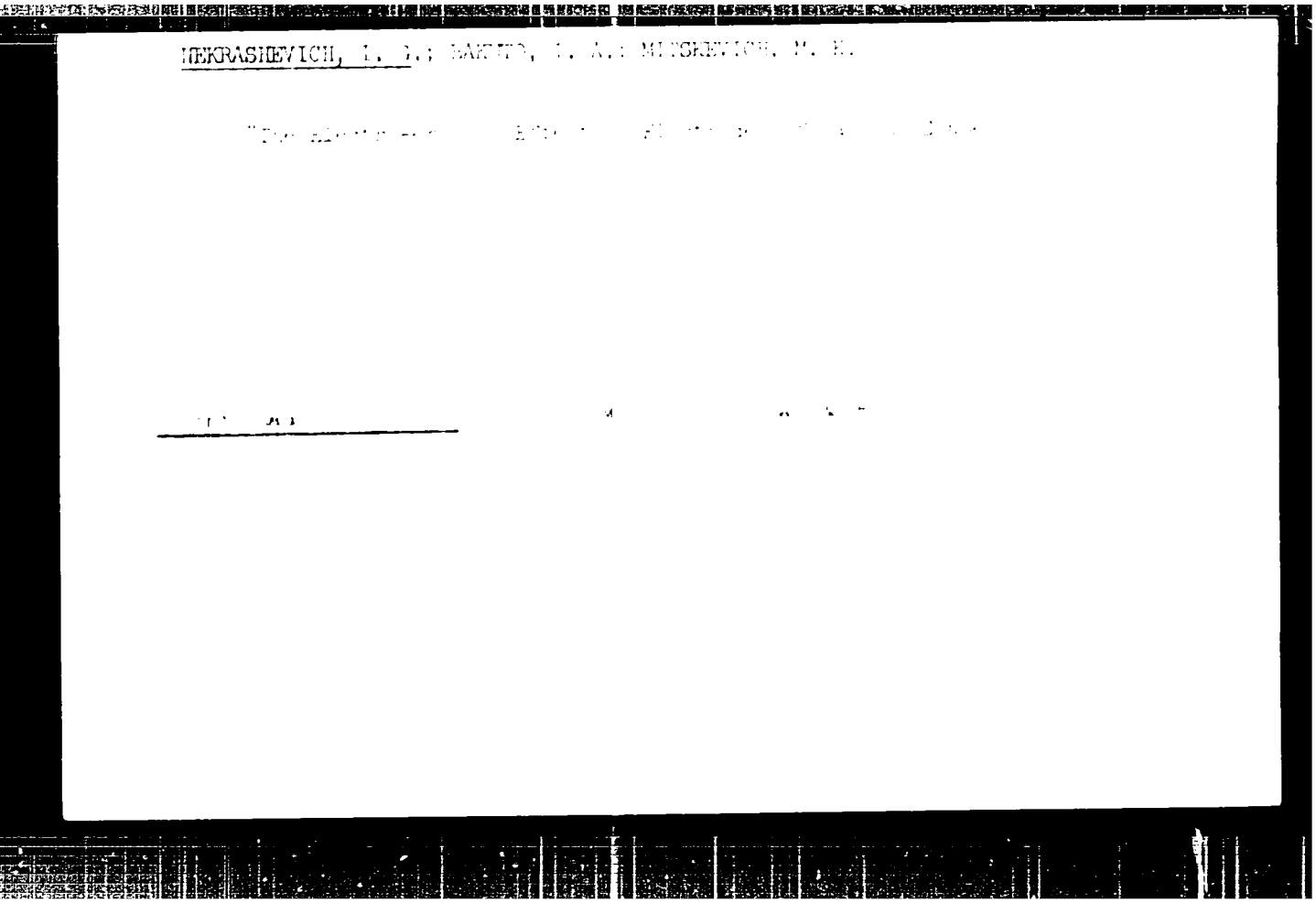
NEKRASHEVICH, I.G.

Operation of Selenium Rectifiers at Audio Frequency. I. G. Nekrashevich
Soviet Physics - Tech. Physics, Feb., 1937
pp. 510-516

FEDARAU, F.I.; SUPRUNENKA, D.A.; NEKRASHEVICH, I.G.

History of development of physicomathematical sciences in White Russia. Vestsi AN BSSR Ser. fiz.-tekh. nav. no.3:17-20 '57. (MIRA 11:1)

(White Russia--Physics)
(White Russia--Mathematics)



NEKRASHEVICH, I.G.; BAKUTO, I.A.

Mechanism of a low-voltage condensed discharge. Fiz.sbor. no.4:158-160 '58. (MIRA 12:5)

1. Fiziko-tekhnicheskiy institut AN BSSR.
(Electric discharges)

BAKUTO, I.A.; MITSKEVICH, M.K.; NEKRASHEVICH, I.G.

Spark erosion effect on electrodes of various shapes. Sbor.nauch. trud.Fiz.-tekh.inst. AN BSSR no.4:196-212 '58. (MIRA 11:11)
(Electrodes) (Electric metal cutting)

LABUDA, A.A.; NEKRASHEVICH, I.O.

Transparency of vapors produced by electric discharges of wires. Inzh.-fiz. zhur. no. 6:40-44 Je '58. (MIRA 11:7)

1. Belorusskiy gosudarstvennyy universitet im. V.I.Lenina, Minsk.
(Electric discharges)
(Vapors--Spectra)

NEKRASHEVICH, I.G.; TAUMIN, D.A.; SHIBAYEVA, A.V.

Effect of the pressure on the resistance and capacitance of rectifying cells. Inzh.-fiz.zhur. no.7:102-106 Jl '58.
(MIRA 11:8)

1. Belorusskiy gosudarstvennyy universitet im. V.I. Lenina, Minsk.
(Selenium cells) (Electronic measurements)

NEKRASHEVICH, I.G.; LABUDA, A.A.

Nature of current interruption caused by electric bursts of wires [with summary in English]. Insh.-fiz. zhur. no. 9:94-101 S '58. (MIRA 11:10)

1. Belorusskiy gosudarstvennyy universitet imeni V.I.Lenina, g. Minsk.
(Electric discharges)

AUTHORS: Labuda A A , Martinko Ye. G. SOV/48 [illegible] 21/28
Nekrashevich I G

TITLE: On Measuring the Temperature of a Cloud of Luminescent Vapors in Electric Pulse Discharges (Ob izmerenii temperatury oblaka svetyashchikhsya parov pri impul'snykh elektricheskikh razryadakh)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya 1958 Vol. 22, Nr 6 pp. 720-724 (USSR)

ABSTRACT: In their introduction the authors describe the method developed for this purpose by Ornshteyn as inadequate because it is subject to considerable restrictions. As soon as these restrictive conditions were not satisfied different results were obtained for one and the same discharge according to what part of lines was investigated (Ref 1). This was confirmed also by L. Huldt. It is however, possible to obtain an approximation to these conditions if for purposes of measuring temperature the spectrum is used within an interval of time which is suited with respect to a smaller volume of the luminescent cloud. In the course of this paper the method developed by Ornshteyn was tested for the

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On Measuring the Temperature of a Cloud of Luminescent Vapors in Electric Pulse Discharges SOV/48-[illegible]-2/28

measurement of temperature by using a metal wire in the spark discharge or electric explosion. It was found that a discharge brought about by a wire with $\delta \leq 0.0$[illegible] mm does not differ [illegible] from a discharge in air, but that it offers the advantage that [illegible] is possible and that the quantity of the evaporated substance can be accurately determined. Discharge experiments were carried out in air and under atmospheric pressure were investigated both in the case of aperiodic and recharge pulses. The spectra field was investigated by means of a one-glass spectrograph which was symmetrical with the double beam pulse oscillograph. The arrangement corresponded to the description given in the paper (Ref 1) and was used for the purpose of obtaining the spectrum of the discharge for the period of [illegible] microseconds. Results are described by 3 diagrams. 1) The dependence of the [illegible] intensity of the spectral lines on the distance from the discharge axis in a pulse discharge brought about by a zinc wire for Fe I, Al II and Al III. 2) Its dependence on the [illegible] of the passage of the pulse discharge through the zinc wire and the distance from the discharge axis. 3) Temperature development with respe[illegible]

Card 2/3

On Measuring the Temperature of a Cloud of Luminescent Vapors in Electric Pulse Discharges SOV/48-22-6-21/28

to time: Ba II $\frac{J_{4934}}{J_{4524}}$, Ba II $\frac{J_{4934}}{J_{4899}}$ and Ba I $\frac{J_{6063}}{J_{5519}}$.

Experiments showed that Ornshteyn's method of using thin wires is possible, but only if zonal distribution and the excitation of spectral lines with respect to time are taken into account. The method cannot be employed for the purpose of determining temperature according to the relative intensity of two spectral lines with considerably differing upper levels, as e.g. according to spark- and arc lines, because excitation does not take place simultaneously with respect to different zones of the discharge. There are 3 figures and 7 references, 3 of which are Soviet.

ASSOCIATION: Belorusskiy gos. universitet im. V. I. Lenina (Belorussian State University imeni V. I. Lenin)

1. Electric discharges--Spectra 2. Electric dishcarges--Temperature
3. Temperature--Measurement 4. Spectroscopy

Card 3/3

LABUDA, A.A.; MARTINKOV, Ye. G.; MEKRASHEVICH, I.G.

Temperature measurements of glowing vapor clouds in pulsating electric discharges. Izv. AN S.S.S.R. Ser. fiz. 22, no. 6:720-724 Je '58. (MIRA 11:7)

1. Belorusskiy gos. universitet im. V.I.Lenina.
(Electric discharges through gases)

XX/58-59-6-13??

Translated from: Referativnyy Zhurnal Fizika, 1959, Nr 6, p 19[illegible] (USSR

AUTHORS: Labuda, A.A., Martinkov, Ye.G., Nekrashevich, I.G., Taumin, D.A.

TITLE An Apparatus for Studying the Temporal Course of the Optical and Electrical Parameters of a Spark Discharge

PERIODICAL Uch. zap. Belorussk. un-t, 1958, Nr 41, pp 41-49

ABSTRACT An apparatus is described for studying in time the optical and electrical parameters of a spark discharge. The time-base sweep of the spectrum is carried out with the aid of a rotating mirror. The mirror is a triangular prism with an oblique mirror-surface, fastened to another, similar prism in order to balance the rotating system. The time resolution is up to $5.3 \cdot 10^{-7}$ sec. The apparatus has a synchronization system which serves to collocate in time the spectral and electrical (current and voltage) characteristics of the discharge, and also for inducing the discharge at the required moment of time.

N M. Yashir

Card 1/1

SOV/58-59-8-18396

Translated from: Referativnyy Zhurnal Fizika, 1959, Nr 8, p 197 (USSR)

AUTHORS: Labuda, A.A., Nekrashevich, I.G.

TITLE The Spatial Distribution and Temporal Course of a Glow Spectrum During Electrical Explosion of Wires

PERIODICAL: Uch. zap. Belorussk. un-t, 1958, Nr 41, pp 51-62

ABSTRACT: The spectral and electrical (current, voltage) characteristics of explosions of Cu and Al wires under atmospheric pressure were investigated in the apparatus described above (abstract 18395). Time-base sweeps of the glow spectrum, oscillograms of the current and voltage, and a spectrum of the spatial distribution of the glow were obtained. By the instant of the first maximum of current more heated sections are formed along the entire length of the wire, generating in some cases a continuous spectrum, and in other cases a continuous as well as a line spectrum (arc and spark lines are present). The second stage of the explosion (after a break in the current) has much in common with an ordinary spark discharge, and the non-uniform heating of the wire is

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30V/58-59-8-1539

The Spatial Distribution and Temporal Course of a Glow Spectrum During Electrical Explosion of Wires

maintained. The temperature of the exploded wire varies in time and differs for various sections of the explosion zone.

N.M Yashin

Card 2/2

NEKRASHEVICH, I.G.

60702

24(3)/30 SOV/109-4-8-22/35

AUTHORS: Granovskiy, V.L., Luk'yanov, S.Yu., Spivak, G.V. and Sirotenko, I.G.

TITLE: Report on the Second All-Union Conference on Gas Electronics

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1359 - 1358 (USSR)

ABSTRACT: The conference was organised by the Ac.Sc.USSR, the Ministry of Higher Education and Moscow State University.
A.A. Timofeyev - "Measurement of the Gas Density During the Dynamic Operation of a Discharge" (see p 1306 of the journal). A.V. Nedospasov - The Nature of a Striated Positive Column".
V.L. Granovskiy and Yu.M. Kagan - "The Theory of Probes for Arbitrary Pressures".
Yu.M. Kagan et al. - "The Positive Column of a Discharge in a Diffusion Regime".
N.V. Kanyukov - "Influence of the Processes of the Annihilation of the Negative Ions on Their Concentration in the Column".
M.D. Gabovich and L.L. Pasechnik - "Anomalous Scattering. Excitation of Plasma Oscillations and Plasma Resonance"
Yu.L. Klimontovich - "Energy Lost by Charged Particles for the Excitation of the Oscillations in Plasma (the Langmuir paradox)" and "The Theory of Non-linear Plasma Oscillations".
Ye.G. Martinkov and I.G. Nekrashevich - "Dependence of the Temperature in the Near-electrode Region of a Pulse Discharge on the Material of the Electrodes".
V.A. Boratina and B.N. Klyarfel'd - "Formation of Light Spots on the Anode of a Gas Discharge (see p 1301 of the journal).
S.A. Matveyeva - "Distribution of Binary Mixtures of Inert Gases in a d.c. Discharge".
V.G. Stepanov and V.F. Zakharchenko - "Some Phenomena in Rarified Plasma".
V.G. Stepanov and V.S. Bezel' - "The Possibility of Obtaining Highly Concentrated Plasmas".
G.V. Smirnitskaya and E.M. Reykhrudel' - "Some Characteristics of the Discharge in an Ion Pump and in a Magnetic Ionisation Vacuum Gauge".
Ye.T. Kucherenko and O.K. Nazarenko - "Properties of a Discharge with Electron Oscillations in a Magnetic Field" (see p 1293 of the journal).
The paper by L.M. Biberman and B.A. Veklenko considered the approximate methods for determining the concentration of atoms at the radiation levels.
I.I. Sobel'man and L.A. Vaynshteyn read a paper on "A Non-stationary Theory of the Stark Broadening of the Spectral Lines in Plasma".
M.A. Mazing and S.L. Mandel'shtam - "The Broadening and the Shift of Spectral Lines in a Gas-discharge Plasma"
R. Lunt (England) - "The Kinetics of Electron Collisions Leading to the Excitation of the Molecular Hydrogen in a Hydrogen Discharge".
V.I. Kolesnikov et al. - "Some Properties of the Arc Discharge in an Atmosphere of Inert Gases".
A.A. Mak and N.P. Kanyukov - "Production of High Temperatures By Means of Spark Discharges".

Nekrashevich, I.G.

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24(2)/20 SOV/109-4-8-22/35

AUTHORS: Granovskiy, V.L., Luk'yanov, S.Yu., Spivak, G.V. and Siretenko, I.G.

TITLE: Report on the Second All-Union Conference on Gas Electronics

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1339 - 1358 (USSR)

I.M. Podgornyy and N.G. Koval'skiy - "New Data on X-ray Radiation During Pulse Discharges"
V.A. Khrabrov and M.M. Sulkovskaya dealt with the investigation of the neutron radiation in powerful gas discharges in chambers with conducting walls.
N.A. Borzunov et al. - "Investigation of the Gas Discharge in a Conical Chamber".
S.M. Osovets et al. - "A Turn of Plasma in Transverse Magnetic Field".
I.G. Kesayev "Data on the Division of a Cathode Spot on Mercury in a Low-pressure Arc" (see p 1289 of the journal).
A.E. Robson (England) - "A New Theory of the Cathode Spot" (see p 1295 of the journal).
L.N. Breusova - "Positive Column in a Hydrogen Discharge With Stationary and Pulse Loads"
I.G. Nekrashevich and A.A. Labud - "Current Distribution on the Surface of Electrodes in Electric Pulse Discharges".
L.A. Rya - "Some Properties of Gas Discharges in Low-voltage in Halogen Counters".

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G.I. Glotova and V.L. Granovskiy - "Comparison of the Initial De-ionisation in the Isotopes of Hydrogen (H and D)".
L.A. Akel'zina communicated some results on the pre-breakdown current pulses at low pressures
M.Ya. Vasil'yeva and A.A. Zaytsev - "Charge-density oscillation Waves in Cylindrical Plasma"
L. Pekárek of Czechoslovakia communicated some information on the wave-like phenomena in gas-discharge plasma.
A.G. Arezhnev dealt with the problem of the determination of the energy of fast ions in pulse discharges.
B.B. Kadomtsev - "Convection [illegible] of a Plasma String".
S.I. Braginskiy and V.D. Shafranov - "Theory of a High-temperature Plasma String".
The fifth section was presided over by N.A. Kaptsov and dealt with high-frequency currents in gases. The following papers were read:
V.Ye. Golant - "Formation of Ultra-high Frequency Pulse Discharges in Inert Gases"
G.I. Patoyuk - "Influence of the Boundary Conditions on the Formation and Maintenance of High-frequency Discharges".
P.S. Bulkin et al. - "Investigation of a Self-maintained Ultra-high Frequency Pulse Discharge and the Process of its Development".
G.E. Zastenker and G.S. Solntsev - "Some Results of the Investigation of the Formation of Low-pressure High-frequency Discharges".
H. Margenau (USA) - "Conductivity of Weakly Ionised Plasma".
A.A. Kuzovnikov - "The Conditions of Transition From High-frequency Corona Discharge at Atmospheric Pressures".
V.Ye. Golant - "The relationship Between the Characteristics of the Ultra-high Frequency Current and the Direct Current in Gas Discharges".
B.B. Lagov'yer analysed the conductivity of the disintegrating plasma in the window of a resonance discharge tube.
S.M. Levitskiy and I.P. Shashurin dealt with the applicability of the probe method to high-frequency

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discharges (see p 1238 of the journal).
The paper by V. Ye. Mitsuk et al. was devoted to the investigation of the ultra-high frequency plasma by means of the Stark effect.
G.S. Solntsev et al. dealt with the problem of electric fields in a high-frequency discharge at low pressures
Ye. Badareu of Rumania read a paper entitled "High-frequency Discharges in Methane".
The work of the sixth section was devoted to the problems of plasma and its radiation. The section was presided over by V.A. Fabrikant. The following papers were read
Yu.M. Kagan - "[illegible] Probe Methods of Plasma Investigation"
V.I. Drozdov - "Oscillo[illegible] [illegible] Plasma"
V.A. Sim[illegible] and A. [illegible] "I[illegible] [illegible] Movement [illegible] Plas[illegible] by Means of a [illegible]

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24(2)/20 SOV/109-4-8-22/35

AUTHORS: Granovskiy, V.L., Luk'yanov, S.Yu., Spivak, G.V. and Sirotenko, I.G.

TITLE: Report on the Second All-Union Conference on Gas Electronics

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1339 - 1358 (USSR)

ABSTRACT: The conference was organised by the Ac.Sc.USSR, the Ministry of Higher Education and Moscow State University.

T.B. Fogel'son - "Methods of Reducing the Energy Lost in the Formation of a Breakdown".

L.I. Pivovar and V.I. Gordiyenko - "Microdischarges and pre-breakdown Currents Between Metal Electrodes in High Vacuum".

V.A. Simonov and G.P. Katukov - "Investigation of the Processes of Initiation and Development of a High-voltage Discharge in Vacuum".

B.M. Reykhrudel and G.V. Smirnitskaya - "The Characteristics of Ignition in High-vacuum in Magnetic Fields".

L.V. Tarasova et al. dealt with the transfer of the electrode material during the pre-breakdown stage in vacuum.

N.B. [illegible] et al. - "The Motion of Micro-particles of Substances During Electric Breakdown in Vacuum".

The third section dealt with the problems of electric sparks, corona and their practical applications. It was presided over by I.S. Stekol'nikov. The following papers were read:

V.I. Levitov et al. - "Probe Investigation of the a.c. Corona Fields".

G.N. Aleksandrov - "Elementary Processes in the Ionisation Zone of Corona-type Conductors at Atmospheric Pressures".

V.A. Burmakin - "Appearance of a Corona Discharge in Hydrogen and Nitrogen"

P.N. Chistyakov et al. - "Some Properties of the Corona Discharge in Hydrogen in Coaxial, Cylindrical System".

A.S. Sobolева and B.N. Klyarfel'd - "Appearance of Discharge Phenomena Between a Point and a Plane at Gas Pressures of 10^{-3} - 1.0 mm Hg".

Ya.Yu. [illegible] et al. - "Methods of Unipolar Ionisation of Air By Means of Aero-ionisers (see p 1333 of the journal)

N.P. Yanyukov et al. - "Time Spectra of the Radiation of a Spark Discharge in Inert Gases" (see p 1284 of the journal).

M.P. Vanyukov and A.A. Mak - "Production of High Temperatures by Means of Spark Discharges".

V.A. Peretyagin - "Influence of the Magnetic Field of the Electric Discharge on the Dividing Surface of Two Media".

I.S. Stekol'nikov - "New Data From the Study of Long Sparks".

N.I. Aynasov - "Properties of the Breakdown of Compressed Air in a Comparatively Uniform Field in the Presence of Localised Non-uniformities".

A.A. Vorob'yev et al. - "Pulse and Oscillographic Techniques for the Measurement of the Discharge Lags in Dielectrics" (see p 1257 of the journal).

A paper by B.N. Zolotykh dealt with the problem of the basic theory of the electric erosion (see p 1330 of the journal).

The fourth section was presided over by S.Yu. Luk'yanov and was concerned with the non-stationary and low-frequency discharges. The following papers were read:

I.G. Nekrashevich and A.A. Labuda - "The Nature of the Current Interruption During the Electric Explosion of a Metal Wire".

V.A. Simonov - "Propagation of Plasma From Local Pulse Sources".

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G.G. Timofeyev et al. - "Observation of an Electro-dynamically Compressed Arc By Means of an Electron-optical Converter".

M.S. Ioffe and Ye.Ye. Yushmanov - "Investigation of the Radial Electric Field in a [illegible] Magnetron"

V.A. Belyayev and M.A. [illegible] - "Experiments with an Electron Model of a State [illegible] Samples"

A.N. Andrianov et al. "D[illegible] Magnetic and Electric Fields in Powerful Pulse D[illegible]"

G.N. Harding (England) - "S[illegible] Determination of the Plasma Temperature [illegible] "Zeta" Equipment" (see p 1325 of the journal)

The paper by Harding ar[illegible] terest and Academician L.A. Arts[illegible] opinion that the electrons and [illegible] "Zeta" should be of the same order [illegible] to Harding, the [illegible] or [illegible] that [illegible]

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113[illegible]

NEKRASHEVICH, I. G.

24(7),24(0) SOV/30-59-1-9/57

AUTHOR: Stepanov, B. I., Academician AS Belorusskaya SSR

TITLE: Investigations by Belorussian Scientists in the Field of Spectroscopy and Luminescence (Raboty belorusskikh uchenykh po spektroskopii i lyuminestsentsii)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 1, pp 68-76 (USSR)

ABSTRACT: These investigations are being carried out at the Institut fiziki i matematiki (Institute of Physics and Mathematics) and the fizicheskiy fakul'tet Belorusskogo universiteta (Physics Department, Belorussian University) under the direction of B. I. Stepanov, A. N. Sevchenko, M. A. Yel'yashevich, Academicians AS BSSR, and F. I. Fedorov, Corresponding Member, Academy of Sciences, BSSR. In the field of theoretical spectroscopy, the investigations by P. A. Apanasevich, B. I. Stepanov [illegible] are mentioned. Further, the following investigations are indicated:

A. P. Prishivalko, B. I. Stepanov developed a theory of dispersion light filters.

B. A. Borisevich, Ye. S. Khvashchevskaya, I. P. Lapitsevich examined, by experiment, dispersion light filters for the infrared range.

A. P. Prishivalko analysed the accuracy and the field of application of existing determination methods of optical constants of dispersed and not dispersed materials.

[illegible], A. Labuda, Ye. S. Martynkov obtained important results concerning the kinetics of one single spark discharge (spectral intensity and discharge temperature).

A. A. Yankovskiy, V. S. Burakov examined the mutual influence of elements in spectrum analysis, and explained the methods for their elimination.

G. V. Ovechkin suggested a series of methods to eliminate the influence of third elements.

G. V. Ovechkin, N. P. Krivosheyev succeeded in working out a control method of benzyl penicillin in ordinary penicillin.

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B. A. Borisevich, N. I. Makarevich, A. I. Sergeyev examined the infrared spectra of [illegible] products.

B. A. Borisevich, V. I. Panasevich, I. P. Lapitsevich examined a series of structural peculiarities of alcohol oxides.

B. A. Borisevich worked out a luminescence method for the determination of the germinating power of the seed of some kinds of trees.

A. Ye. Prokopchuk obtained good results by the use of luminescence analysis in dermatology.

S. S. Chernomordik examined the absorption spectra of the albuminous polysaccharide complexes.

D. A. Markov used spectral methods for analysing albuminous fractions in the blood.

B. M. Pavlyuchenko, S. A. Lazorko, carried out an extensive spectrophotometrical examination of the formation of molecular and complex compounds in solutions.

N. A. Sevchenko spectroscopically examined the structure of various silicas.

B. I. Stepanov, A. M. Prima carried out theoretical investigations of the vibrational spectra of various silicate crystals

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PHASE I BOOK EXPLOITATION SOV/4C18

Akademiya nauk Belorusskoy SSR. Fiziko-tekhnicheskiy institut

Sbornik nauchnykh trudov, vyp. 5 (Collected Scientific Papers of the Institute of Engineering Physics, Academy of Sciences Belorusskaya SSR, No. 5) Minsk, Izd-vo AN BSSR, 1959. 235 p. Errata slip inserted. 1,100 copies printed.

Ed. of Publishing House: L. Marika; Tech. Ed.: I. Volokhanovich. Editorial Board: V.P. Severdenko, Academician, Academy of Sciences BSSR (Chief Ed.), K.V. Gorev, Academician, Academy of Sciences BSSR, N.N. Bodyako, Candidate of Technical Sciences, and P.A. Parkhutik, Candidate of Technical Sciences.

PURPOSE: This book is intended for technical personnel and scientific workers.

COVERAGE: This collection of 23 articles covers the following subjects: Small draft rolling analysis of wire-drawing, design of drop-forging dies, impact upsetting, examination of the effect of temperature on plastic deformation, sulphidation and carburizing processes, the phenomena of pulse-discharge, etc. [illegible]

3/058/62/000/004/063/169
A058/A101

AUTHORS: Nekrashevich, I. G., Shcherbakova, V. I.

TITLE: The photoelectric action of X-rays on semiconductor rectifying cells (theses)

PERIODICAL: Referativnyy zhurnal, Fizika, no. 4, 1962, 23, abstract 4G191 (V sb. "Fotoelektr. i optich. yavleniya v poluprovodnikakh". Kiev, AN USSR, 1959, 396-397)

TEXT: The authors investigated the effect of 20-160-kv x-rays on selenium, cuprous-oxide and germanium rectifying cells. They studied the dependence of direct and reverse current on X-ray intensity and hardness as well as on the bias voltage applied to the cell. They investigated the X-ray intensity-and-hardness dependence of the short-circuiting current and of the photo-emf that appears in the cell during irradiation. They found that these dependences resemble those known for valve phototubes intended for the visible region of the spectrum. They established that the relative sensitivity of the cells to X-rays decreases with increasing X-ray intensity, but increases with increasing X-ray hardness. They studied the effect on valve layers of pressures of (0-5,000 kg/cm^2).

[Abstracter's note: Complete translation]

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9(6); 28(5)

06393
SOV/170-59-2-11/23

AUTHORS: Nekrashevich, I.G., Petrovskiy, I.I.

TITLE: On the Temperature Dependence of Resistance of a Point Contact Between a Semiconductor and a Metal

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 2, pp 86-89 (USSR)

ABSTRACT: The authors studied the resistance of a point contact between a metal, steel, and semiconductors, such as pyrite, galenite and silicon crystals. A steel needle with a point whose rounding radius amounted to about 2 microns was pressed to the surface of the crystal. Volt-ampere characteristics of the non-rectifying point contact were obtained for various semiconductors with a measuring device, whose circuit is shown in Figure 1 One static characteristic obtained on a pyrite crystal is shown in Figure 2. It has a sharply defined peak at a current intensity of 4C ma and a falling section for the higher intensities. As Figure 3 shows, where several characteristical curves for different temperatures of the surrounding medium are plotted, the height and position of the peak depends on the temperature of this medium. The family of straight lines in Figure 4 shows the change in the contact resistance depending on the "equilibrium" temperature of the sample at different current intensi-

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6393
SOV/170-59-2-17/2

On the Temperature Dependence of Resistance of a Point Contact Between a Semiconductor and a Metal

ties in the contact. As the behavior of the samples considered is analogous to that of the volume thermal resistances, which are sensitive to both outer temperature effects and to changes in the current passing through them, the point contacts of metals with semiconductors can be used also for generation of vibrations and in other cases in which thermistors are usually employed.
There are: 3 graphs, 1 circuit diagram and 2 references, 1 of which is Soviet and 1 English.

ASSOCIATION: Belorusskiy gosudarstvennyy universitet im V I Lenina (Belorussian State University imeni V.I. Lenin), Minsk

Card 2/2

05296
28(5) SOV/170-59-8-7/18

AUTHORS: Nekrashevich, I.G., Bakuto, I.A.

TITLE: On the Mechanism of Emission of Substance From Electrodes During Electric Pulse Discharges

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 8, pp 59 - 65 (USSR)

ABSTRACT: Phenomena of emission of substance from electrodes during electric pulse discharges are considered on the basis of the notion of spontaneously shifting current conducting channel with current density of at least 10^7 a/cm^2. A limiting case is considered when the rate of heat conductivity is sufficiently slow and consequently does not affect phenomena arising due to high values of specific power; therefore it is neglected. The mechanism of emission of substance from electrodes is considered as a process consisting of a number of consecutive "micro-explosions" of small volumes of metal in the surface layer of the electrode. Formula 4 is derived which expresses the dependence of the full amount of substance removed from the electrode during one discharge on the energy parameter of discharge and physical constants of the electrode material. The theoretical values obtained are compared with experimental data taken from Reference 12, and it is concluded that there is a qualitative agreement between the trends of

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On the Mechanism of Emission of Substance From Electrodes During Electric Pulse Discharges

two columns of Table 1 (with exception of ferromagnetic metals and carbon). The analysis of Formula 4 shows that the magnitude of electric erosion can be different for cathode and anode, and also for different media. Some other regularities observed in the erosion of electrodes are also explained. There are: 1 graph, 1 table and 13 references, 7 of which are Soviet, 2 English and 4 German.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN BSSR (Physico-Engineering Institute of the AS Belorussian SSR), Minsk.

NEKRASHEVICH, I.G.

Photoelectric properties of semiconductors rectifiers exposed to X rays. Fiz. tver. tela 1 no.4:589-596 '59. (MIRA 12:6)

1.Belorusskiy gosudarstvennyy universitet, Kafedra eksperimental'noy fiziki, Minsk.
(Semiconductors) (X rays)

MARTINKOV, Ye.G., KRASHEVICH, I.G.

Temperature of an impulsive electric discharge in the electrode zone as a function of electrode material. Dokl. AN BSSR 3 no.4: 143-145 Ap '59. (MIRA 12:10)

1. Predstavleno akademikom AN BSSR B.I. Stepanovym.
(Electric discharges)

AUTHOR: Nekrashevich, I. G.

TITLE: Semiconductor electronics in the dosimetry [illegible]

PERIODICAL: Referativnyy zhurnal, Fizika, no. [illegible], [illegible] (Sb. "Materialy Nauchno-tekhn. konferentsii [illegible] Nauchno-tekhn. o-va radiotekhn. i elektrosvyaz [illegible] ...ovya rozhd. A. S. Popova" Minsk, AN BSSR, [illegible]

TEXT: The possible uses of semiconductors as radiation pickups in [illegible] ...ctric devices are described. In such pickups, either rail active pa... the transformed into electric pulses (in a circuit using the energy f... source), or the pickup itself becomes a source of electric energy under the ... tion of particle or photon flux. The action principle of pickups of the f... type is analogous to that of gas-discharge Geiger counters. Pickups of the ... latter type are semiconductor valve elements. The main requirements which ... pickups should meet are listed as follows: (1) The changes produced by radia- tion in the pickup should be reversible. (2) The equilibrium state of the pickup after switch-on and switch-off of radiation should be established wit...

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...ser conductor electronics ...

...sufficiently short time. (2) ...e sufficiently ...tive ... ... pickup should be insensitive to other external influences (temperature, ... magnetic and electric fields, etc.). (4) A sufficiently ...e relation ... (e.g., ...linear dependence) between the value of measured radiation and ... in pickup sensitivity parameters is desirable. (5) In many cases it ... ...able that the pickup should record the pulses of the individual ... ...es or ph tons. Among the materials that more or less satisfy ... ...ents, semiconductors rank first, both in the form of monocrystals and ... ...crystalline specimens. Those examined most are CdS, Se, CdS, CdSe, ZnS, ZnSe, ... CdS and CdSe rank first as to sensitivity. However, they are ... ...sort to the X and ... ranges (of the order of tens of kilovolts) ... ... must be used for recording radiation in these ranges. ... ...ent semiconductor pickups for ionizing radiation consists in ... ...ontact systems with an n-p junction in the contact zone (valve element). The greatest inconvenience of such elements in recording particles or ph...ons of very high energies is the lengthy or even irreversible change of the n-p junction's properties, due to coarse lattice damage. These damages are absent, however, in the case of particles with the energy hv $<$1 Mev. Another disadvantage of valve elements in the X and γ ranges is their low efficiency, related to the high

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Semiconductor electronics ...

penetrating power of these rays. The efficiency can be raised by passing a particle or photon beam through a column of thin-layer series-connected valve elements. Some characteristics of such valve-element batteries are indicated.

P. L.

[Abstracter's note: Complete translation]

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NEKRASHEVICH, I.G. [Nekrashevich, I.H.]; BAKUTO, I.A. [Bakuta, I.A.]

Electric erosion of bimetallic electrodes. Vestsi AN BSSR. Ser.fiz.-tekh.nav. no.3:69-75 '60. (MIRA 13:9)
(Electrodes)

NEKRASHEVICH, I.G. [Nekrashevich, I.H.]; BAKUTO, I.A. [Bakuta, I.A.]

Dependence of the erosion effect on the duration of the pulse discharge. Vestsi AN BSSR. Ser. Fiz.-tekh. nav. no. 4:107-112 '60. (MIRA 14:1)

(Electric discharges)

3.9.5

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E073/E535

26.2311

AUTHORS: Nekrashevich, L.G. and Bakuto, I.A

TITLE: Mechanism of erosion of metals during electric impulse discharges

PERIODICAL: Akademiya nauk Belaruskay SSR Fiziko-tekhnicheskiy institut Sbornik nauchnykh trudov, no 6 Minsk 1960 193-215

TEXT: There are two main hypotheses explaining the phenomena leading to electrical erosion. E M Williams (Ref 1 El Eng 71 257 1952) holds the view that numerous successions of processes of disintegration of the electrode material occur during a single discharge. This is also the view held by the authors of this paper. Other authors base their explanation of the hypothesis of emission of material from the electrodes simultaneously throughout the entire surface of the electrode on which a discharge occurs. Thereby it is usually assumed that the discharge current flows each time through a single channel which widens during the process of the discharge, and the finite boundaries of this channel at the surface of the electrode are assumed as coinciding with the boundaries of the erosion trace. The latter

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Mechanism of erosion of metals

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9073/1535

number of published papers on the subject deal with the thermal theory of electric erosion which is based on the theory of thermal conductivity. Many of the results obtained by means of this theory are not in agreement with experiment. The authors of this paper express different views which take into consideration experimental data on the kinetics of the processes that occur in the gap and on the electrodes during pulse discharges. Further development of this hypothesis enabled elucidating most of the observed phenomena of electric erosion from a single point of view. The quantitative relations obtained on the basis of this new hypothesis are in good agreement with experimental results. In this paper the basic concepts of this hypothesis are described and the relations between various quantities characterizing the investigated phenomena of destruction of the electrodes during discharges are calculated and the results are compared with experimental data. To explain all the experimentally observed features of erosion during the discharge it is necessary to start off from the experimental fact that the metal is removed from the surface of the electrode in small portions the sum of which

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"...anism of erosion of metals

corresponds to the full erosion effect of the single electric discharge. Such a mechanism is only possible if the discharge current does not flow simultaneously throughout the entire surface of contact of the electrode and the inter-electrode medium which participates in the discharge but only through individual small sections of the surface. There are two possibilities: either the contact surface of the current conducting discharge channel and the electrodes consist of a number of individual simultaneously acting areas or the contact surface consists of a single small area, the position of which on the electrode surface changes at a great speed during the discharge. The first variant is based on the concept of a spatially discrete discharge channel on the electrode surface, the second on a discharge channel which is discrete with time. The latter is the most likely. The size of the contact area in this case may depend on the physical properties of the electrode materials and the dielectric medium and also on the electrical conditions pertaining during the discharge. If both electrodes are of the same material, the following variants are possible: the contact area of the plasma

Mechanism of erosion of metals . s/571/60/000/006/010/011
1073, 1535

with the electrodes is larger on the cathode than on the anode, it is larger on the anode than on the cathode, they are equal These differences in the area of the current conducting contact may be due to physical phenomena (electrodynamic forces diffusion of charge carriers, electron optical effect etc) In the case that the electrodes are made of different materials it is necessary to take into consideration the influence of the physical properties of the material on the magnitude of the contact area The displacement of the contact area may be due to non-steady state movements in the form of shock-waves inside the discharge cloud and also processes of explosive transformation of the material of the electrodes into the vapour state, as a result of which the material becomes non-conducting The size of the contact area determines the density of the electric current on the electrodes The current density will determine the energy release and, on the other hand, the size of the contact area will be determined to some extent by the heat exchange between the channel and the electrode material Thus, the released energy will be determined by both effects Even extreme cases are possible when the energy release is governed

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...ism of erosion of metal-...

...ly by the Lentz-Joule effect or only by the effect of thermal conductivity. Depending on the density and quantity of energy released in the contact of the metal with the plasma the following effects are possible: fusion of a certain volume of the electrode material and also fusion accompanied by evaporation. The dielectric medium in the discharge zone will be in the gaseous state at high temperature and pressure, regardless of its state at the beginning of the discharge. During the explosive expansion of the metal vapours and the dielectric the molten metal will be squeezed out and an erosion cavity will be formed. The contact area which moves around during the discharge will ensure the appearance of a series of such cavities which together form the full erosion trace on the surface of the electrode. Again three cases are possible: the erosion is equal on the anode and the cathode; the erosion on the cathode is less than the erosion on the anode and the erosion on the anode is less than the erosion on the cathode. If the electrodes are of different materials or if they differ in shape, the mechanism of the erosion process can be described in the same way but

additional factors have to be taken into consideration The mechanical effect of the streams of metallic vapours ejected from the electrodes may also have a certain but no too great effect The widening of the current conducting channel is due to new sections of the volume of the medium being entrained into the process of ionization and at the same time electrodynamic compression forces act on the medium The resistance of the discharge zone also decreases as a result of an increase in the conductivity of the plasma with increasing ionization In numerous cases the discharge channel can be considered as being almost invariable but performing displacements inside the discharge zone However the process of displacement of the current conducting contact area along the surface of the electrode will have no influence on the current intensity in the external circuit and therefore the above-mentioned phenomena may not be detected on the oscillograms of the current and voltage and they have to be detected from the optical effects The phenomena in spark discharge erosion are very similar to those observed in an arc with a mercury electrode. I G Kesayev (Ref 21 DAN SSSR 113 No 1 1957) has shown that the cathode spot in a mercury arc

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E073/E535

discharge only indicates the area in which a much smaller current conducting spot moves about at a very fast rate (about 10^5 times per second) There is only one spot at any given time It is on the basis of this concept that the theory of the electric erosion of metals is evolved and the mass of eroded metal is calculated The calculations show that depending on the physical constants of the electrode materials, the quantity of evaporated metal amounts to 20-40% of the total quantity of the metal subjected to the erosive effect of the discharge The effect of the polarity of the discharge and the problems of the evacuation of metal from the surface of the electrode are briefly discussed. Metal that has been heated to the fusion temperature can either be retained on its solid base by the surface tension forces or it may be removed if these forces are overcome. The explosive nature of the emission of materia' that has been heated sufficiently to become vaporised produces large pressures which are capable of squeezing out and scattering the molten metal These concepts seem to be supported by the experimental results obtained in measuring the mechanical impulse transmitted to the

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electrodes during the discharge The main role in evacuating the molten metal is played by the vapours of the same metal The mechanism of squeezing out consists in explosive adiabatic expansion of the evaporated portions of the metal during "elementary" erosion. Following that, the vapours of the metal and of the dielectric become mixed and a resulting medium pressure is produced which removes the residues of the molten metal and flattens out the mounds produced by the individual "elementary" pittings There are 7 figures, 1 tables and 27 references. 21 Soviet and 6 non-Soviet. The English-language references read as follows: Ref.1 (quoted in text); Ref.16. Germer L H Boyle, W S J.Appl.Phys., 27, No 1, 32-39, 1956; Ref 18 Sommerville, J.M., Grainger, C.T Brit J Appl Phys , 7,400 1956. Ref 19: Boyle, W.S. J.Appl Phys v 26, No 5, 584-586, 1955

Card 8/8

NEKRASHEVICH, I.G.; NAKUTO, I.A.

Determination of average pressures in the electrical pulse discharge zone. Inzh.-fiz.zhur. no.7:60-66 Jl '60. (MIRA 13:7)

1. Fiziko-tekhnicheskiy institut AN BSSR, g. Minsk.
(Electric discharges)

9.3260

69968
S/170/60/003/01/10/023
B022/B007

AUTHORS: Nekrashevich, I. G., Baluto, I. A., Mitskevich, M. K.

TITLE: The Dependence of Some Erosion Characteristics of an Electric Pulse Discharge on Its Duration

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 1, pp. 62 - 67

TEXT: Already previously (Ref. 1) it had been presumed that in an electric pulse discharge spontaneous shifts of the current-conducting channel and its contact with the metal surface occurs within a region filled by the discharge cloud. Thus, equation (3) was derived, which indicates the mass of the molten metal which is partly or completely removed from the electrode surfaces and also the total number of microexplosions in the course of the discharge (by means of equation (4)) was determined. The correctness of these relations was experimentally checked. Rectangular current pulses and a long line were used for the purpose of obtaining discharge pulses with a duration of 45, 80, 120, 200, and 240 μsec. The discharge voltage, which was kept on a constant level, was 200 v. In the case of a shunt within the discharge circuit the amperage of the discharge current was 900 a. A typical oscillogram of the current pulse

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The Dependence of Some Erosion Characteristics of an Electric Pulse Discharge on Its Duration

S/170/60/003/01/10/023
B022/B007

is given in Fig. 1. The dependence of the erosion (Fig. 2), the surface of the erosion track (Fig. 3), and of the magnitude of the ballistic amplitude of the torsion pendulum on the time of the current pulse (Fig. 4) are given. The number of possible microexplosions during a discharge (Table 1) and the surfaces of the erosion tracks (Table 2) are given. The possible causes of the decrease in average pressure with prolongation of the time of the discharge is pointed out. There are 4 figures, 2 tables, and 4 references, 3 of which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN BSSR, g.Minsk (Institute of Physics and Technology of the AS BSSR, City of Minsk)

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