BORISOV, Aleksandr Prokof'yevich, kand.ekonom.nauk; CHISTYAKOV, Pavel Mikhaylovich, inzh.; KURDYUMOV, M.D., red.; UCHITEL', I.Z., red. izd-va; LELYUKHIN, A.A., tekhn.red.

[Municipal economy in reservoir areas; technical and economic aspects] Gorodskoe khoziaistvo v zone vodokhranilishch; tekhniko-ekonomicheskie voprosy. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1960. 286 p. (MIRA 13:9)
(Reservoirs) (Flood control)

CHISTYAKOV, P. N.

USSR/Engineering - Calibrating devices

Card 1/1 : Pub. 128 - 24/38

Authors : Osminkin, K. N.

Title : Fixture for marking divisions on circular scales

Periodical : Vest. mash. 9, page 31, Sep 1954

Abstract : The article illustrates and describes a fixture mounted on a screw press for marking divisions on circular scales. The incorporation of this fixture decreases the production cost by 1100%, and the time of manufacture by 60%. Drawings.

Institution : .....

Presented by: Economist P. N. Chistyakov

CHISTYAKOV P. N.

USSR/Physics - Discharge, Glow Oct 49
Gases, Inert

"Normal Glow Discharge in Mixtures of Inert Gases," P. N. Chistyakov, Moscow Power Eng Inst imeni Molotov, "Elektrolamp" Plant, 7 pp

"Zhur Tekh Fiz" Vol XIX, No 10

Studied variation in normal cathode potential drop V_{cn} and normal current density with respect to pressure squared j_n/p^2 as a function of the composition of binary mixtures of inert gases Ne + Ar and He + Ar. New method of obtaining cathodes was used which permitted considerably higher accuracy

151T92

USSR/Physics - Discharge, Glow (Contd) Oct 49

in determining parameters of normal glow discharge (V_{cn}, j_n/p^2). Submitted 24 Jul 48.

151T92

BORKHVARDT, G.K.; CHISTYAKOV, P.N., redaktor; SKVORTSOV, I.M., tekhnicheskiy redaktor.

[Cold-cathode tube] Lampa s kholodnym katodom. Moskva, Gos.energ. izd-vo, 1953. 63 p. (Massovaia radiobiblioteka, no.179)[Microfilm] (Electron tubes) (MLRA 7:10)

CHISTYAKOV, P.N.

Normal cathode falls for inert gases. Sbor.nauch.rab.MIFI no.9:5-16 '55. (MLRA 10:1)

(Electric discharges through gases)

9(4) SOV/112-59-1-1583

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 1, p 223 (USSR)

AUTHOR: Chistyakov, P. N.

TITLE: Gas-Discharge Voltage Stabilizers (Voltage-Regulator Tubes)

PERIODICAL: V sb.: Uspekhi elektrovakuum. tekhniki. M.-L., 1956, pp 54-93

ABSTRACT: Voltage-regulator tubes are used for direct stabilization of voltage of a source or as reference devices in stabilizers. Several discharge forms are suitable for stabilization purposes: pre-corona, corona, and glow. The first form is stable with sufficient ionizers present; it exhibits high stabilizing characteristics because the discharge current is very small (10^{-10} - 10^{-6} amp) and the charges do not appreciably affect the cathode or anode discharge regions. The range 10^{-7} - 10^{-6} amp is used for stabilization. For a self-sustaining corona discharge, a set of coaxial electrodes with a central corona-displaying electrode is used. H_2-filled voltage-regulator tubes can ensure the slope of about 10 v per 100 microamp, for stabilized currents up to 1 ma, and with voltages from 200 v up to

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Gas-Discharge Voltage Stabilizers (Voltage-Regulator Tubes)

a few dozen kv. The voltage can be increased by using higher pressure. Glow-discharge devices can stabilize the voltage in the range from a few tenths of ma up to 100-300 ma. Their current density is proportional to the pressure squared, and the cathode drop U_{kn} is proportional to the cathode work function. Appearance of films on the cathode usually results in higher U_{kn}, while destruction of the films, in drifting U_{kn}. To obtain uniform and reproducible values of U_{kn}, gas mixtures are used. Usually the Ar + Ne, Ar + He, and Ar + Ne + He are employed for which the Penning phenomenon holds true. By combining cathode and anode drops, various fill gases and cathode materials, voltages 40-400 v can be stabilized with one discharge gap. By increasing the number of discharge gaps, the value of stabilized voltage can be proportionally increased, Thirty-six illustrations. Bibliography: 41 items.

I. M. V.

CHISTYAKOV, P.N.

66702

24,2120 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".

E.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. Rozanov 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. Sobolava 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. Reynet et al. - "Methods of Unipolar Ionisation of Air By Means of Aero-ionisers (see p 1335 of the journal).

M.P. Vanyukov 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".

M.I. Syaorov - "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. Nakrashevich and A.A. Labud - "The Nature of the Current Interruption During the Electric Explosion of a Metal Wire".

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

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

M.S. Ioffe and Ye.Ya. Yushmanov - "Investigation of the Radial Electric Field in an Ion Magnetron".

V.A. Belyayev and M.K. Romanovskiy - "Experiments with an Electron Model of a System with Magnetic Samples".

A.M. Andrianov et al. "Distribution of Magnetic and Electric Fields in Powerful Pulse Discharges".

G.N. Harding (England) - "Spectroscopic Determination of the Plasma Temperature in the "Zeta" Equipment" (see p 1326 of the journal).

The paper by Harding aroused a lot of interest and Academician L.A. Artsimovich expressed the opinion that the electrons and ion temperature in the "Zeta" should be of the same order: instead, according to Harding, the electron temperature is [illegible] by an order than that of the ion.

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3.1000

75334
SOV/57-29-10-11/18

AUTHOR: Chistyakov, P. N.

TITLE: On the Subject of the Right Hand Member of Relationship U_z = f (pd) for Inert Gases

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1959, Vol 29, Nr 10, pp 1259-1262 (USSR)

ABSTRACT: The study consists in checking previous experiments when the Paschen relationship U_z = f(pd) between the ignition voltage U_z and the product of the gas pressure p by the distance between the electrodes d was investigated for inert gases. In particular the effect of the surface of the flat parallel electrodes was studied. This surface was carefully cleaned from any chemical films and devoid of adsorbed atoms of foreign gases. The electrodes were made of high-purity Ni. The gases used were pure He and He + 1 % Ar, at a pressure of 15 mm Hg. For the two gases investigated the shapes of curves showing the relationship U_z = f(pd) were very much similar to those obtained by previous investigators, except that the U_z values were from 8

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to 12% lower. The author thinks that the reason for his lower values is that he took particular care in seeing that there be no single-atom layers of adsorbed noninert gases, or no molecules, on the cathode surfaces, which, he claims, was not exactly the case in the experiments to which he refers in the paper. This is also responsible for the experimentally obtained points being less scattered on curves representing the Paschen relationship than in former experiments. Since purity of gases employed was equally high in all these experiments, gaseous films on the surface of cathodes in previously reported studies were responsible for the higher values of the ignition voltage obtained by other researchers. In order to eliminate any single-atom layers on the cathode surfaces it is recommended that the cathodes be kept for a number of hours at incandescent temperature, that the non-active part of the chamber be coated inside with a layer of barium, and that the glass in the vicinity of the electrodes be coated inside with a protective layer of the metal of which the electrodes are made. There are 4 figures; and 12 references, 3 Soviet, 3 German, 5 Dutch, and 1 U.S. The U.S. reference is: Deuyvesteyn, M. J., and Penning, F. M., Rev. of Mod. Phys.,

On the Subject of the Right Hand Member of Relationship $U_2 = f(pd)$ for Inert Gases

75334
SOV/57-29-10-11/18

12, 87, 1940.

ASSOCIATION: Moscow Institute for Engineering Physics (Moskovskiy inzhenerno-fizicheskiy institut)

SUBMITTED: March 28, 1959

Card 3/3

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308910010-9"

Chistyakov, P.N.

82157
S/048/60/024/06/02/017
B019/B067

7.3120

AUTHORS: Tatarinova, N. V., Chistyakov, P. N.

TITLE: Electron Emission[1] From a Cold Barium Cathode[2] Occurring After a Current Pulse in a Gas

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 6, pp. 635-639

TEXT: This is the reproduction of a lecture delivered at the 9th All-Union Conference on Cathode Electronics from October 21 to 28, 1959 in Moscow. In the present paper the authors studied the time dependence of emission for barium cathodes up to currents which are commensurable with background currents caused by cosmic radiation. Besides, the influences exercised by the purity of the cathode and the gas (Ar), the surface properties of the cathode, and the amount of electricity flowing through the gas on the discharge were studied. The currents were measured by the pulse breakdown method which allows a recording of single electrons. The block diagram shown in Fig. 1 for measuring the emission is discussed, and the determination of the delay time of discharge is ex-

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Electron Emission From a Cold Barium Cathode Occurring After a Current Pulse in a Gas

plained by the two oscillograms shown in Fig. 2. The experimental arrangement is discussed with the aid of Fig. 3. The tube contains two electrodes consisting of high-purity nickel, and the coating of an electrode with Ba taking place on the evacuation is described. The tube was then filled with argon (11 torr). Fig. 4 graphically shows the time dependence of emission for ten test tubes. According to a paper by L. Malter (Ref. 5), the fading of emission is connected with the neutralization of a charge on a dielectric film by electrons emitted from the metal. A strong influence exercised by the purity of the metal and of the gas on the emission was observed in the experiment. Furthermore, the influence of gradual removal of the Ba-layer on the cathode was investigated by anomalous glow discharge. The state of the cathode surface was controlled according to the amount of V_{kn} ($V_{kn} = C\varphi_0$, where C is a gas constant, φ_0 the work function on the cathode) and also according to the voltampere characteristics of glow discharge (Figs. 5 and 6). It is concluded from a study of the dependence of the electron stream on V_{kn}: $I = f(V_{kn})$, in which case the empirical formula (3) given by A. Güntherschulze is regarded as correct, that the nature of emission is either thermoelectronic or

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Electron Emission From a Cold Barium Cathode Occurring After a Current Pulse in a Gas

autoelectronic. The latter of these two types is regarded as more probable. In the range of an amount of discharge from 10^{-4} to 10^{-8} coulomb, emission proved to be practically invariable which confirms the concept of the autoelectronic nature of emission. The experiments are being continued. There are 6 figures, 2 tables, and 8 references: 2 Soviet, 2 British, 2 German, and 2 American.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Physics and Engineering Institute)

Card 3/3

9.3150,24.2120

77313
SOV/57-30-2-10/18

AUTHORS: Burmakin, V. A., Gubanova, V. G., and Chistyakov, P. N.

TITLE: Some Results of the Large Current Corona Investigations in Hydrogen

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol 30, Nr 2 pp 199-205 (USSR)

ABSTRACT: The authors investigated the corona discharge in hydrogen using a coaxial system of electrodes (see Fig. 1) for currents up to 1 ma/cm. Some of the results were published earlier (I. Yevstigneyeva, Diplomnaya rabota (Thesis for Diploma), MFI, 1955; V. Grubanova, P. Ch styakov, Elektronika, 4, 67, 1958; V. Burmakin, Elektronika, 6, 115, 1958). Measurements were taken by means of the electrical setup shown on Fig. 2. The authors showed that for devices filled with pure hydrogen at relatively high pressures (around 1 atm) there is no one-sided

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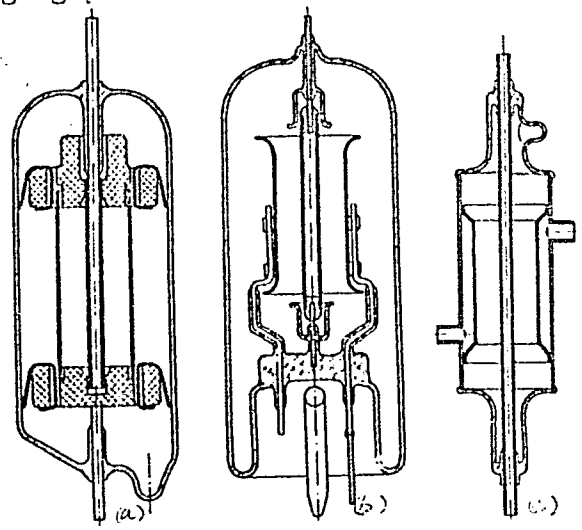
Fig. 1. Construction of experimental devices. Discharge gaps are indicated by heavy lines.



Some Results of the Large Current Corona Investigations in Hydrogen

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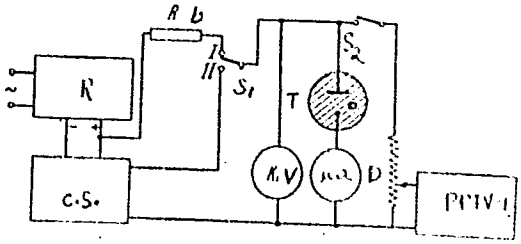

Fig. 2. Block diagram of the measurements of characteristics. (R) rectifier; (C. S.) current stabilizer; (R_b ballast resistance; (S_1) double-throw switch; (S_2) switch; (KV) electrostatic kilovoltmeter; (μa) microammeter; (D) precision-made potential divider; (PPTV) potentiometer; (T) tube under investigation.

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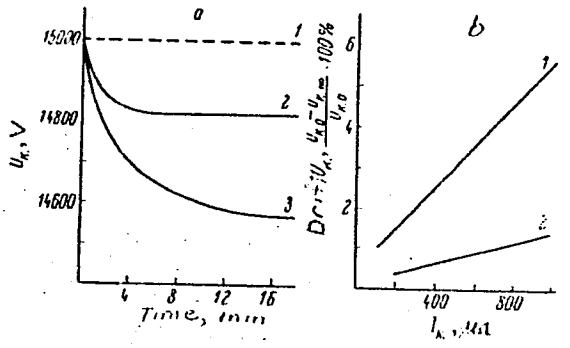
drift in the corona potential U_k, and in case of a current of $I_1 = 200\ \mu$ a/cm the change was not larger than 0.2% for 50 hours of uninterrupted work. This is of the same order of magnitude as for the best devices using glow discharge. They found, on the other hand, a strong relation between U_k and the temperature of the electrodes (Fig. 3). This causes a strong drift of U_k from U_{ko} at the start of the corona to an assymptotic value of U after a longer time. However, the tube c with artificial cooling showed no drift whatsoever. The same temperature effect is responsible for the so-called "negative" characteristic of the positive corona as seen on Fig. 4. While the naturally cooled tube showed the "negative" characteristics of curve 1, the same tube cooled by means of water showed normal positive characteristics of curve 2. The authors investigated also the limiting corona currents and

Fig. 3. Curves 1 and 2 correspond to the construction c on Fig. 1; curve 3 to the construction a on Fig. 1.



Some Results of the Large Current Corona Investigations in Hydrogen

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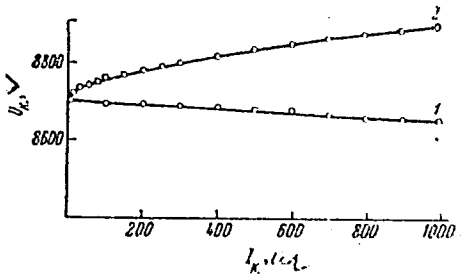
Fig. 4. The "negative" characteristic of the positive corona. Tube according to Fig. 1 c. p = 500 mm Hg; $D_{cathode}$ = 28 mm, D_{anode} = 10 mm; l_{height} = 100 mm.



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the transition to other kinds of discharge at low pressures. They found that for a pressure 1,500 mm Hg the I_{lim} current raises to the enormous value for a corona discharge of 1.6 ma/cm, and one could expect still further increases with pressure. Figures 7a and 7b show the characteristics of transition from the corona into a high pressure glow discharge or an intermediate form between the glow and the arc. Values of currents at the transition point from corona into other forms of discharge were reproducible with a $\pm$ 10% accuracy which is acceptable in case of technical applications. The corona discharge region can be extended either by widening the corona gap or by increasing the gas pressure. All data were obtained during the development of a series of high voltage stabilotrons utilizing corona discharge. There are 7 figures; and 12 references, 6 Soviet, 1 German, 1 Dutch, 4 U.S. The U.S. references are: J. Cillinson, D. Hill J. Sci. Instruments, January, p 13, 1955;

Some Results of the Large Current Corona Investigations in Hydrogen

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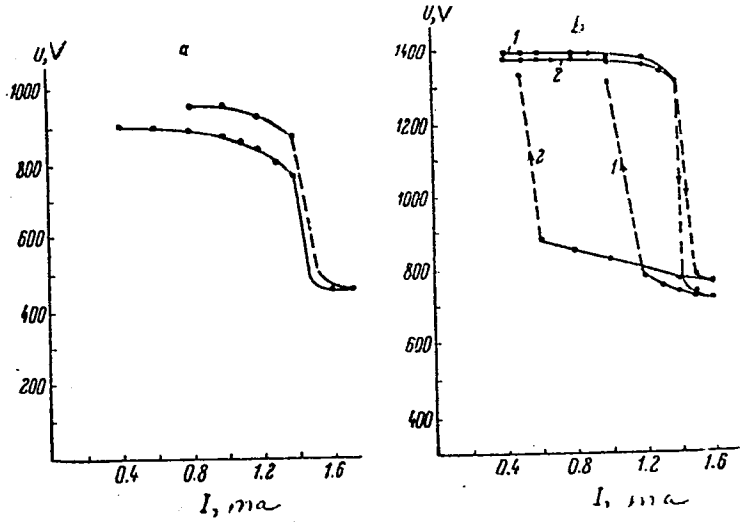

Card 8/10 Caption for Fig. 7 on Card 9/10

Fig. 7. Volt-ampere characteristics of the transition from corona to a new form of discharge. The tube construction is that on Fig. 1a. (a) p = 50 mm Hg, R_b = 50.5 MΩ ; (b) p = 100 mm Hg, R_b = 50.5 MΩ . Dashed lines indicate portions of curves where the current charges discontinuously. Curves 1 and 2 correspond to various setups.

Some Results of the Large Current Corona Investigations in Hydrogen

77313
SOV/57-30-2-10/38

E. Shelton, F. Wade, Electronic Eng., January, p 18, 1953; S. Lichtman, PIRE, 39, 419, 1951; J. Blifford a. other., Electronics, December, p 110, 1949.

Submitted: February 2, 1959

Card 10/10

23731

S/057/61/031/006/015/019
B116/B201

9, 4120

AUTHORS: Chistyakov, P. N. and
Milovanova, R. A.

TITLE: Values of $V_{K.H.}$ and φ for a molybdenum cathode in argon

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 6, 1961, 746 - 748

TEXT: A study has been made of the condition of a metal-cathode surface in an inert gas on the condition that an accurate and reproducible value of $V_{K.H.}$ of the cathode voltage drop was obtained in advance. The work function φ has been chosen as the quantity characterizing the condition of the cathode surface. In view of the fact that a cathode with a temperature of about 20°C was submitted to investigation, the authors applied the photoelectric method for determining φ. Mo was used as cathode material, and Ar as the inert gas. The experimental apparatus is

Values of $V_{K.H.}$ and φ...

shown in the accompanying figure. The piston was made of 3C - 5 (3S - 5) molybdenum gas. The window O made of fused optical quartz was soldered onto the piston with the aid of transition glasses. The cathode and anode, flat disks 20 mm in diameter, were made of 0.2 mm molybdenum sheet containing at most 0.03% impurities. A hole (5 mm in diameter) was cut out in the center of the anode. Through it, the light from the monochromator hit the cathode surface. The distance between cathode and anode was 6 mm and was chosen such as not to give rise to a potential drop at the anode with the argon pressure used in the system. The latter was evacuated to 12 mm Hg for about 30 hours, filled with fresh argon and sealed. The system was then treated with a glow discharge, first with alternating current of 80 ma for half an hour, and thereupon with pulsating current of 100 ma. An opaque molybdenum layer (C region in the figure) formed on the pist[illegible] around the discharge space during treatment (due to sputtering of the cathode). At the same time, $V_{K.H.}$ dropped rapidly at first, then very slowly, and after 10 - 15 hours it stabilized on the level indicated in the accompanying table ($V_{K.H.}$

Values of $V_{K.H.}$ and φ...

measurements were made at 8 ma with [illegible] voltmeter). At a pressure of p = 12 mm Hg, a $V_{K.H.}$ value of 100 ± 1 % was obtained for Ar-Mo with all devices. The potential gradient between cathode and anode was taken as $V_{K.H.}$, with the anode being situated in the Faraday dark space at a distance $d \simeq 0.5\, d_{critical}$ ($d_{critical}$ - distance at which a potential drop takes place at the anode) within the range of currents of a normal glow discharge (the range in which $V_{K.H.}$ is very little dependent on I). The instability of $V_{K.H.}$ in time was checked with a potentiometer for 30 hours, and was found to be less than 0.1%. The inclination of the volt-ampere characteristics within the range of normal glow discharge was very small. For currents ranging from 2 to 8 ma. the mean differential resistance was 50 ohms at most. The spectral characteristics of the photoelectric current were measured by a monochromator with quartz optics in the wavelength range between 2700 and 3100 Å. An evaluation of characteristics yielded the photoeffect threshold for a mean λ_o = 3068 Å

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Values of $V_{K.H.}$ and φ...

and $\varphi = 4.04 \pm 0.02$ v. This almost equals the value of $\varphi = 4.15 \pm 0.02$, obtained for a vacuum by L. Dubridge, W. Roehr (Ref. 8: Phys. Rev., 42, 52, 1932) with the aid of photoelectron and thermionic emission. The authors' experiments show that there are no adsorbed monolayers of inert gases (O, N, H, CO) on the cathode surface that would augment or modify by more than 0.1 v the work function φ of the atomically pure metal surface. The liberation of the cathode surface from adsorbed monolayers of inert gases is thus one of the conditions for obtaining accurate and reproducible $V_{K.H.}$ values. M. I. Epshteyn is thanked for his advice on spectroscopic measurements. There are 1 figure, 1 table, and 9 references: 2 Soviet-bloc and 7 non-Soviet-bloc. The references to the English-language publications read as follows: T. Jurriaanse, F. Penning, J. Moubis. Philips Research Report, 1, 225, 1946; F. Penning, J. Moubis. Physica, 15, 8-9, 721, 1949; T. Jurriaanse. Phil. Res. Rep., 1, 407, 1946.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering Physics Institute)

SUBMITTED: November 12, 1960

TYAGUNOV, Georgiy Aleksandrovich. Prinimali uchastiye: ZHIGAREV, A.A., kand. tekhn. nauk; VAL'DNER, O.A., kand. tekhn. nauk; SHAL'NOV, A.V., kand. tekhn. nauk; CHISTYAKOV, P.N., kand. tekhn. nauk; YUDINSKAYA, I.V., starshiy prepodavatel'; FRIDKIN, A.M., tekhn. red.

[Electron-tube and transistor devices (physics, fundamental theory, and principal designs)] Elektrovakuumnye i poluprovodnikovye pribory (fizika, elementarnaia teoriia, osnovnye konstruktsii). Moskva, Gos. energ. izd-vo, 1962. 398 p. (MIRA 15:4)

(Electron tubes) (Transistors)

MOROZOVA, I.G.; CHISTYAKOV, P.N.

Study of the spectrum of a heavy-current pulse discharge. Fiz. elek. no.1:107-117 '62. (MIRA 17:1)

L 13336-63 EWT(l)/EWG(k)/EWP(q)/EWT(m)/EDS/EEC(b)-2/ES(w)-2 AFFTC/
ASD/ESD-3/SSD Pz-4/Pab-4 AT/RH/JD
ACCESSION NR: AP3003725 S/0109/63/008/007/1246/1252

75

AUTHOR: Chistyakov, P. N.; Tsarinova, N. V.

TITLE: Statistical breakdown delays in inert gases for pure-metal and activated cathodes

SOURCE: Radiotekhnika i elektronika, v. 8, no. 7, 1963, 1246-1252

TOPIC TAGS: pure-metal molybdenum cathode, barium-activated molybdenum cathode, statistical breakdown delay, molybdenum-cathode initial current, pure-metal cathode, barium-activated cathode

ABSTRACT: The dependence of average statistical breakdown delays (t_d) and initial electron current in inert gases on applied voltage and time is investigated for the case of a pure molybdenum cathode, and an attempt to determine the variation of emission in time with the gradual removal of the active layer is made for the case of a barium-activated molybdenum cathode. The argon-filled experimental devices contained Mo electrodes (impurities not over 0.03%) 20 mm in diameter and 0.2 mm thick. The devices were heated up to 400C and the electrodes heated to a maximum temperature of 1100C. In the devices with activated cathodes, Ba was

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slowly deposited on the electrode, which was heated to 750—800C. The values of t_d were determined by applying controlled rectangular voltage pulse U to the electrodes. U varied from $U = U_{stat}$ to $U = 6U_{stat}$, where U_{stat} is the static breakdown voltage of the discharge gap. The current occurring in the devices after breakdown was limited by a ballast resistance, did not exceed 6 μamp, and had a duration of 10 sec for the pure-metallic and 0.1 sec for the activated cathodes. The recording of t_d was carried out by oscillographs and in the case of $t_d > 10$ sec by counting initial electrons by means of a special circuit. The following are the results of the experiments: a) all-metal cathodes had high t_d values (0.2 sec corresponding to a current of 5 electron/sec) and low initial currents (10^{-20} to 10^{-18} amp), and b) with the gradual removal of the active layer of activated cathodes the emission preserved a decaying nature which is inherent in postdischarge emissions. Although the last stage of processing by a high glow-discharge current (150 mamp) lasted 100 hr, it proved impossible to remove the active layer and to eliminate postdischarge emission entirely. It is suggested that postdischarge emission in this case is a field emission excited by pulses in the gas and passing through the dielectric layer. Orig. art. has: 4 figures, 1 table, and 3 formulas.

ASSOCIATION: none
SUBMITTED: 11Jun62 DATE ACQ: 02Aug63 ENCL: 00
SUB CODE: GE NO REF SOV: 005 OTHER: 004

S/057/63/033/003/015/021
B104/B180

AUTHORS: Milovanova, R. A., and Chistyakov, P. N.

TITLE: The work function and the normal cathode drop of molybdenum and nickel in inert gases

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 33, no. 3, 1963, 356 - 359

TEXT: The surface states of Mo and Ni are studied in conditions under which stable and reproducible cathode drops are achieved in instruments. The work function is taken as the characteristic of this state and is determined by a photoelectric method. The samples were refined and degased at temperatures between 800 and 1200° C. Then the electrodes were treated by the Penning method, using the same gas as that in the apparatus. After this the electrodes were refined by cathode sputtering and a metal layer was formed on the inner side of the envelope. The apparatus was filled with argon (12 mm Hg) or with neon (27 mm Hg). Results: The work function of a Mo cathode in inert gases is 0.1 - 0.2 v lower than the mean work function in vacuo, 4.27 v. This shows there are

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B104/B180

The work function and ...

no adsorbed monolayers of non-inert gases (C, N, H, CO). The work function of a nickel cathode is nearly the same as in vacuo, 61±0.05 ev. At 300° K inert gases have less influence on the work function of pure metal cathodes. There are 2 figures and 1 table.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering Physics Institute)

SUBMITTED: February 2, 1962 (initially)

June 26, 1962 (after revision)

Card 2/2

L 18482-63 EWT(1)/EWG(k)/BDS/EEC(b)-2/ES(w)-2 AFFTC/ASD/ESD-3/AFWL/
IJP(C)/SSD Pz-4/Pi-4/Po-4/Pab-4 AT
ACCESSION NR: AP3005509 S/0057/63/033/008/0967/0972

82
80

AUTHOR: Zubov, V.V.; Chistyakov, P.N.

TITLE: Comparison of the microwave and probe methods for measuring plasma densities

SOURCE: Zhurnal tekhnicheskoy fiziki, v.33, no.8, 1963, 967-972

TOPIC TAGS: plasma diagnostics, Langmuir probe, microwave absorption, electron density

ABSTRACT: In order to compare the two diagnostic methods, the electron density in the positive column of a steady mercury-vapor discharge was measured with a plane Langmuir probe and by microwave absorption. The discharge was contained in a glass tube 34 mm in diameter, the electrode separation being 320 mm. A hot oxide-coated cathode was employed. The gas pressure was controlled by adjusting the temperature of a side tube containing liquid mercury. The Langmuir probe was 3 mm in diameter, 0.3 mm thick and was located in the center of the tube 120 mm from the anode with its plane parallel to the axis. Curves of electron density versus discharge current at constant pressure, obtained in the usual way by analysis of the probe characteristic, were linear for discharge currents greater than 0.3 A. The microwave

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ACCESSION NR: AP3005509

2

measurements were made at six wavelengths from 2.3 cm to 4.4 cm. The discharge tube was located between two waveguide matching sections and the attenuation was determined at a fixed wavelength while the discharge current was varied. Small variations in the attenuation (amounting to 3-8 db and showing maxima and minima) were observed at low discharge currents. These variations were sensitive to tuning, but the large attenuation indicating critical density was not. The curves of electron density versus discharge current obtained from these measurements were linear. The ranges of current in which the two types of measurement were possible did not overlap. To compare the two methods, the density-current relations for fixed gas pressures were extrapolated linearly to a common current and two curves of density versus gas pressure, one for each method, were constructed. These two curves agree well (within 10-15%) for gas pressures below 1.5×10^{-2} mm Hg, but they deviate considerably from each other above this pressure. At 4×10^{-2} mm Hg the density obtained from the microwave measurements exceeds that obtained with the probe at about 75%. "In conclusion the authors convey their gratitude to Professor B.N.Klyarfel'd and to Docent V.Ye.Golant for consultations on problems relating to the work." Orig.art.has: 1 formula and 7 figures.

ASSOCIATION: none

SUBMITTED: 07Jul62	DATE ACQ: 06Sep63	ENCL: 00
SUB CODE: PH	NO REF SOV: 003	OTHER: 000

Card 2/2

CHISTYAKOV, P.N.

Detectability of residual dielectric films on metal surfaces. Zhur. tekh. fiz. 33 no.11:1395-1396 N '63. (MIRA 16:12)

1. Moskovskiy inzhenerno-fizicheskiy institut.

ACCESSION NR: AP5010320 UR/0051/65/019/001/1333/1335
537.521.7

AUTHOR: Christyakov, P. N.; Tatarinova, N. V.

TITLE: Weak postdischarge emission as an indicator of electrode surface condition in vacuum breakdown experiments

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 7, 1965, 1333-1335

TOPIC TAGS: electron emission, electrode, dielectric breakdown, vacuum

ABSTRACT: One of the authors has shown that after a gas discharge there occurs a weak emission of electrons from the electrodes (currents from 10^{-13} to 10^{-18} A) which is due to the presence of very thin dielectric films on the electrode surface (P.Christyakov, ZhTF, 33, 11, 1963). In the present work the authors investigated the relation between this postdischarge emission and the vacuum breakdown field. Two identical copper electrodes of approximately the Rogovskiy shape were employed, the gap between which could be varied from 0.2 to 5 mm. The postdischarge emission was measured in a 5 mm gap in argon at 6 mm Hg by the statistical breakdown delay method of H.Paetow (Zs. Physik, 111, 770, 1939) and the

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L 60326-65

ACCESSION NR: AP5018320

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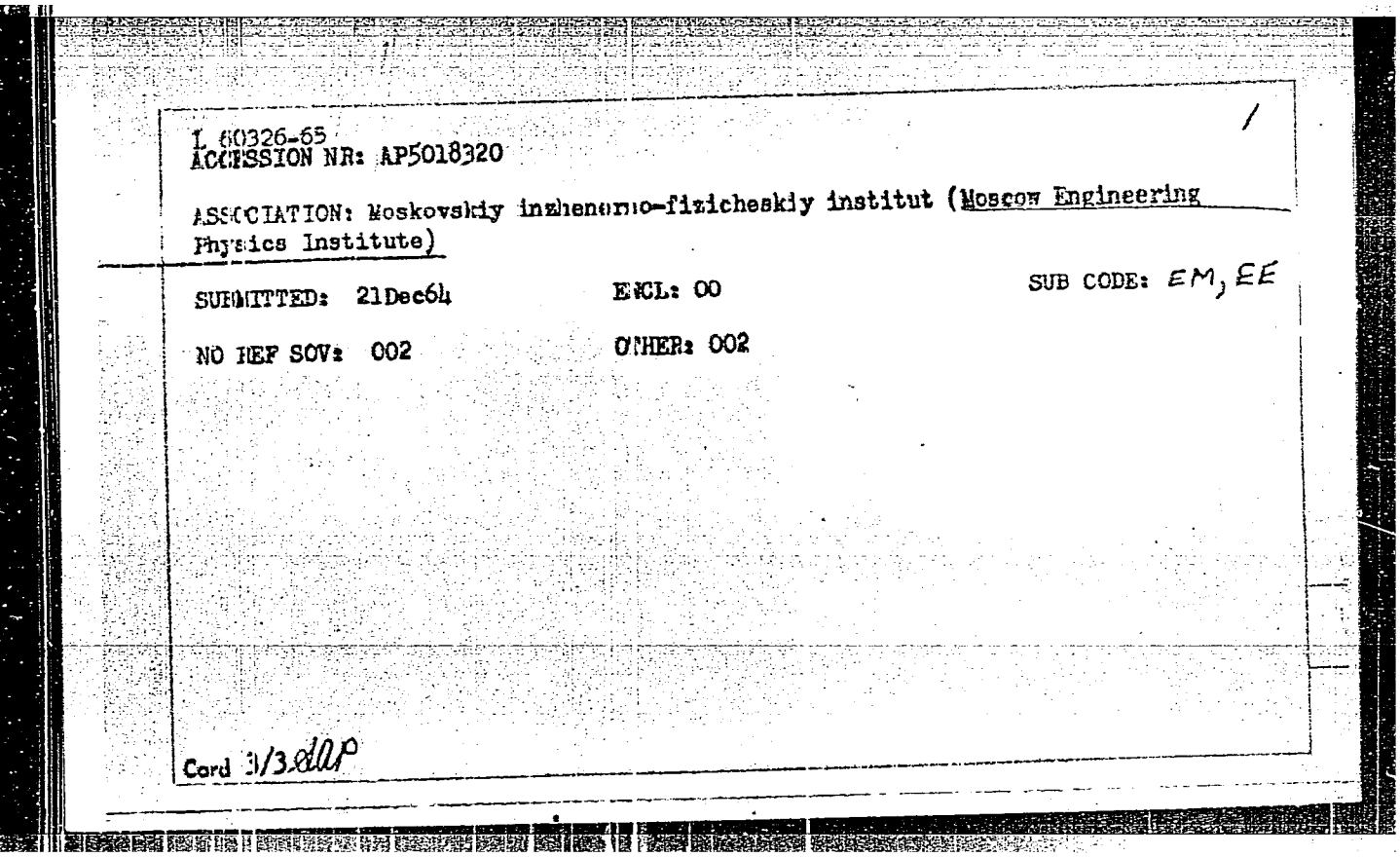
Vacuum breakdown potential was measured at 10^{-6} mm Hg with the use of a variable voltage (up to 20 kV) rectifier and an 0.6 megohm ballast resistor. The electrodes were subjected to one of the following treatments: 1) high vacuum heating at 250°C; 2) a 1.5 hr 40 mA pulsed glow discharge in argon at 26 mm Hg; and 3) a 1.5 hr continuous glow discharge in argon at 60 mm Hg during which the current rose from 50 to 120 mA and the electrodes were heated to 850°C. In passing from treatment 1) to treatment 3), the postdischarge emission decreased by a factor 32 and the vacuum breakdown potential measured in a 0.2 mm gap increased by a factor 3.5; when the electrodes were subjected to treatment 2) the results were intermediate. It is concluded that there is a definite relation between postdischarge emission and vacuum breakdown potential, and that postdischarge emission can serve as a useful indicator of electrode condition in high vacuum breakdown experiments. "Senior Engineer I.M.Pechatnikova participated in the measurements of the vacuum breakdown characteristics." Orig. art. has: 3 figures.

Card 2/3



L 60326-65
ACCESSION NR: AP5018320

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering Physics Institute)

SUBMITTED: 21Dec64 ENCL: 00 SUB CODE: EM, EE

NO REF SOV: 002 OTHER: 002

Card 1/3 dlp

L 23484-66 EWT(1)/EWT(m)/EWP(t) IJP(c) JD/AT

ACC NR: AP6007094 UR/0057/66/036/002/0392/0394

AUTHOR: Tatarinova,N.V.; Chistyakov,P.N.

ORG: Moscow Engineering Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut)

TITLE: Postdischarge emission of some electronic component materials

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 2, 1966, 392-394

TOPIC TAGS: postdischarge emission, copper, brass, steel, duraluminum, metal polishing, oxide formation

ABSTRACT: The authors have measured postdischarge emission currents in helium at 8 mm Hg from copper, grass, steel, and duraluminum electrodes. Since postdischarge emission occurs only when there is a thin dielectric film on the electrode surface, it is felt that the data may be useful for characterizing the condition of metal surfaces in electrical apparatus. The electrodes were 2 cm diameter spheres. Prior to measurement, about 1 mm of metal was turned off the electrode surface with a lathe, using no lubrication. Some of the electrodes were subsequently polished to a mirror surface with emery cloth followed by oiled felt, and some of them were not. The electrodes were washed with alcohol and acetone. About 30 minutes elapsed between final preparation of the electrodes and reaching a vacuum of 10^{-5} mm Hg in the apparatus. The postdischarge emission currents were determined by observing the statistical distribution of delay

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UDC: 537.533

L 23484-66

ACC NR: AP6007094

times between application of a square voltage pulse and breakdown of the gas, as described by H.Paetov (Zs.Physik, 111, 770, 1939) and by N.V.Tatarinova and P.N.Chistyakov (Izv. AN SSSR. seriya fiz., 24, 1246, 1963). Postdischarge emission currents exceeding 10^{-17} A and dropping below 10^{-18} A after 3 min were observed with all the metals. The postdischarge currents of the polished copper and brass electrodes were less than those of the unpolished ones; polishing had no effect on the postdischarge currents of the steel electrodes. The postdischarge currents are tentatively ascribed to the presence of thin oxide films resulting from the mechanical working in air. Orig. art. has: 2 figures.

SUB CODE: 20/11, 13 SUBM DATE: 31Mar65/ ORIG REF: 003/ OTH REF: 001

Card 2/3 UDC

L 25507-66 EWT(1)/EWT(m)/ETC(f)/EPF(n)-2/EWG(m)/T/EWP(t) IJP(c) DS/JD/AT

ACC NR: AP6011408 SOURCE CODE: UR/0057/66/036/003/0566/0568

AUTHOR: Tatarinova, N.V.; Chistyakov, P.N.

ORG: Moscow Engineering Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut)

TITLE: Dependence of the low postdischarge emission from a cold barium cathode on the experimental conditions

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 3, 1966, 566-568

TOPIC TAGS: electron emission, barium, ultra high purity metal,

ABSTRACT: The authors have investigated postdischarge emission from high purity barium films in order to determine whether postdischarge emission is due in the case of barium, as in the case of less active metals, to the presence of nonmetallic impurities. After the apparatus was cleaned by the usual high vacuum techniques it was sealed off at a vacuum of 10^{-7} mm Hg and barium was deposited on a molybdenum substrate. Xenon, purified by a high current glow discharge and containing less than one part per million of active impurities, was admitted from another part of the apparatus by breaking a glass partition, and the postdischarge emission of the barium film was recorded. The emission current one minute after cessation of the initiating discharge was 10^{-17} A; this is less by a factor of 1000 than the postdischarge emission previously observed by the authors (Radiotekhnika i elektronika, VIII, 7, 1246, 1963)

Card 1/2 UDC: 537.533

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ACC NR: AP6011408

for less carefully purified barium. The barium was then burned off the substrate with a high current glow discharge, the xenon was frozen into a side tube with liquid nitrogen, a fresh layer of barium was deposited, the apparatus was warmed to room temperature, and the measurements were repeated. This time the postdischarge current after one minute was 3×10^{-18} A. It is concluded that postdischarge emission of barium is due to the presence of impurities, most likely of BaO, and it is suggested that postdischarge emission measurements could be used to verify the purity of barium films. Engineer N.Ye.Novikov participated in the work. Orig. art. has: 2 figures.

SUB CODE: // SUBM DATE: 23Aug65 ORIG. REF: 005 OTH REF: 004

Card 2/2 ULR

ACC NR: AP7001950 (N) SOURCE CODE: UR/0120/66/000/006/0137/0140

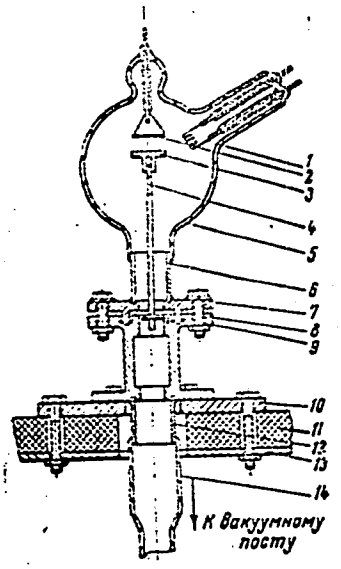
AUTHOR: Tatarinova, N. V.; Chistyakov, P. N.

ORG: Moscow Engineering and Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut)

TITLE: Outfit for detecting thin dielectric films on metal surfaces

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1966, 137-140

TOPIC TAGS: surface film, thin film, dielectric ~~film~~ property



ABSTRACT: As a clean metal surface does not yield any post-discharge emission, the method is based on detection of small electron emission from a test surface excited by a current pulse in gas. The outfit (see figure) comprises a vacuum-pumping unit, a detachable gas-discharge chamber containing the test specimen, and an electronic circuit for measuring the post-discharge emission current. The parts are: 1 - tungsten helix, 2 - Mo anode, 3 - test specimen, 4 - holder, 5 - glass envelope, 6 - kovar nipple,

Card 1/2 UDC: 621.317.799:539.216.22

ACC NR: AP7001950

7, 8 - flanges, 9 - copper gasket; 14 - tubing to vacuum pump. Tests of metal specimens whose surfaces were oxidized and cleaned by various methods showed that the above outfit could detect oxide films as thin as 10^{-7} cm; both continuous and spotty films could be detected. Orig. art. has: 5 figures.

SUB CODE: 13, 20 / SUBM DATE: 08Dec65 / ORIG REF: 004 / OTH REF: 001

Card- 2/2

CHISTYAKOV, R.

GINKEN, S. (Moskva); AKIMOV, N. (Moskva); BERESLAVSKIY, S. (Moskva); BULANOVICH, P. (Moskva); MAL'KIN, S. (Moskva); MARTYNOV, A. (Moskva); CHISTYAKOV, R. (Moskva).

Let's mark the occasion of the 40th anniversary of the Great October with new successes in mass defense work; appeal of members of the All-Union Volunteer Society for Assistance to the Army, Air Force, and Navy of the Ordzhonikidze Factory in Moscow to all primary organizations. Voen.znan. 32 no.11:4 N '56. (MIRA 10:10)

1. Predsedatel' komiteta pervichnoy organizatsii Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu (for Ginken). 2. Chlen komiteta pervichnoy organizatsii Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu (for Akimov, Bereslavskiy, Bulanovich, Mal'kin, Martynov). 3. Sekretar' komiteta Vsesoyuznogo Leninskogo kommunisticheskogo soyuza molodezhi (for Chistyakov).
(Military education)

CHISTYAKOV, S. F.

Engineer. Thermal Control Trust "An Aid to Those who Work with Thermal Control Gages". (bk) by N.Ye. Nikodimov. Reviewed by S. F. Chistyakov. Tsvet. Met 14, No. 6, 1939.

U-1506, 4 Oct. 1951/

CHISTYAKOV, S. F. and KOZ'MIN, A.F.

"Avtomatizatsiya teplosilovykh ustanovok," Gosenergoizdat, 1940

CHISTYAKOV, S. F.

"Avtomatizatsiya elektrostantsiy i elektroagregatov", Moskva, Oborongiz, 1948

CHISTYAKOV, S. F., GERASIMOV, S.G. and DUDNIKOV, Ye. G.

"Avtomaticheskoye regulirovaniye kotel'nykh ustanovok," Gosenergoizdat, 1950

IVANOV, V.M.; CHISTYAKOV, S.F., red.; MIKHAYLOVA, V.V., tekhn. red.

[Reference manual on heat regulation and automatic control in ferrous metallurgy] Spravochnik po teplovomu kontroliu i avtomatike v chernoi metallurgii. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1951. 603 p. (Heating engineering) (Metallurgy) (Automatic control)(MIRA 11:9)

1. CHISTYAKOV, S. F., RADUN, D.V.

2. USSR (600)

4. Cement Industries; Kilns, rotary

7. Measuring the temperature of material in the clinkering zone of rotary kilns. TSement No. 2 (1952) Dotsent.

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

CHISTYAKOV, S. F.

Ekspluatatsiya i naladka teplotekhnicheskikh priborov i regulyatorov (Operation and Maintenance of Heat Engineering Instruments and Regulators), Gosenergoizdat, 1953.

The booklet describes the operation and maintenance of the most widely used types of heat measuring instruments and automatic regulators. Much space is devoted to possible errors in measurement. A description of tuning automatic regulators to the optimum work rate is included.

The booklet is intended chiefly for heat measurements, and may be used as an aid for improving the skills of engineering workers concerned with problems of heat control and regulation.

SO: Sovetskiye knigi (Soviet Books), No. 183, 1953, Moscow, (U-6472)

CHISTYAKOV, S. F.

5063. AUTOMATIC CONTROL OF BOILER PLANTS. Gerasimov, S.G., Dudnikov, E.G. and Chistyakov, S.F. (U.S.S.R.; transl. into German, Berlin: VEB Verlag Technik 1956, 35 pp., 35 DM).

LL

CHISTYAKOV, S.F., kandidat tekhnicheskikh nauk.

Determining the dynamic characteristics of controlled apparatus by means of static characteristics. Trudy MEI no.25:197-222 '55. (MIRA 9:7)

(Mechanical engineering) (Automatic control)

CHISTYAKOV, S. F.:

Chistyakov, S. F.: "Dynamic calculations of thermal regulated installations." Min Higher Education USSR. Moscow Order of Lenin Power Engineering Inst imeni V. M. Molotov. Moscow, 1956. (Dissertion for the Degree of Doctor in Technical Science)

SO: Knizhnaya letopis', No 27, 1956. Moscow. Pages 94-109;111.

CHISTYAKOV, S. F. (Candidate of Technical Sciences)

Moscow. Energeticheskiy institut

Istoriya energeticheskoy tekhniki SSSR v trekh tomakh. t. 1: Teplotekhnika (History of Power Engineering in the USSR in Three Volumes. v. 1: Heat Engineering Moscow, Gosenergoizdat, 1957. 497 p. 5,000 copies printed.

Ed.-Compiler: Konfederatov, I.Ya., Doctor of Technical Sciences; Authors: Badyl'kes, I.S., Doctor of Technical Sciences; Belindkiy, S.Ya., Candidate of Technical Sciences; Gimmel'farb, M.L., Candidate of Technical Sciences; Kalafati, D.D., Candidate of Technical Sciences; Kertselli, L.I., Professor; Kovalev, A.P., Doctor of Technical Sciences; Konfederatov, I.Ya., Doctor of Technical Sciences; Lavrov, V.N., Doctor of Technical Sciences; Lebedev, P.D., Doctor of Technical Sciences; Lukinskiy, V.V., Doctor of Technical Sciences (deceased); Petukhov, D.S., Doctor of Technical Sciences; Satanovskiy, A.Ye., Doctor of Technical Sciences; Semenenko, N.A., Doctor of Technical Sciences; Smel'nitskiy, S.G., Candidate of Technical Sciences; Sokolov, Ye.Ya., Doctor of Technical Sciences; Chistyakov, S.F., Candidate of Technical Sciences, and Shcheglyayev, A.V., Corresponding Member, USSR Academy of Sciences; Editorial Board of set: Bel'kind, L.D., Doctor of Technical Sciences; Glazunov, Doctor of Technical Sciences; Golubtsova, V.A., Doctor of Technical Sciences; Zolotarev, T.L., Doctor of Technical Sciences; Izbash, S.V., Doctor Technical Sciences; Kirillin, V.A., Corresponding Member, USSR Academy of Sciences;

Konfederatov, I.Ya., Doctor of Technical Sciences; Margulova, T.Kh., Doctor of Technical Sciences; Meshkov, V.V., Doctor of Technical Sciences; Petrov, G.N., Doctor of Technical Sciences; Sirotinskiy, L.I., Doctor of Technical Sciences; Styrikovich, M.A., Corresponding Member, USSR Academy of Sciences; and Shneyberg, Ya.A., Candidate of Technical Sciences. Ed.: Matveyev, G.A., Doctor of Technical Sciences; Technical Ed.: Medvedev, L.Ya.

PURPOSE: The book is intended for technicians in all branches of heat engineering.

COVERAGE: This book presents the development of the basic branches of heat engineering in the Soviet Union and it is the first volume of 3 volumes entitled History of Power Technology in the USSR. The first chapter gives a concise history of the development of heat engineering from its very beginning to the middle of the 19th Century when the fundamentals of the theoretical heat engineering were established. A detailed description of the development of heat engineering in pre-Revolutionary Russia is given in Ch. 2 to 5 and its status before 1917 is described. In the main part of the volume, Ch. 6 to 16, the development of various branches of the Soviet heat engineering is presented. The theoretical fundamentals of heat engineering, of manufacturing boilers, turbine installations of heat power plants, district heating, heat control, automation of thermal processes, and cooling techniques are covered extensively. Each chapter is supplemented with a bibliography. The book is illustrated with photographs, charts and diagrams, worked out by the authors of the respective chapters. At the end of the book there is a chronological list of significant events in the development of heat engineering.

CHISTYAKOV, S.F.

CHISTYAKOV S.F.

14(1); 15(6) PHASE I BOOK EXPLOITATION SOV/1499

Teplotekhnicheskiy spravochnik, t. 2 (Heat Engineering Handbook, Vol. 2) Moscow, Gosenergoizdat, 1958. 672 p. 40,000 copies printed.

Compilers (All Instructors of the Moscow Power Institute): V.V. Luknitskiy, Doctor of Technical Sciences (Deceased); Ye.Ya. Sokolov, Doctor of Technical Sciences; P.D. Lebedev, Doctor of Technical Sciences; M.L. Gimmel'farb, Candidate of Technical Sciences; N.V. Lavrov, Doctor of Technical Sciences; G.P. Ivantsov, Candidate of Technical Sciences; B.N. Golubkov, Candidate of Technical Sciences; A.N. Sherstyuk, Candidate of Technical Sciences; S.P. Nikitin, Candidate of Technical Sciences; S.F. Chistyakov, Candidate of Technical Sciences, Ye.G. Dudnikov, Doctor of Technical Sciences; A.M. Baklastov, Candidate of Technical Sciences; and M.I. Berba, Candidate of Technical Sciences. Ed.: I.I. Ayzenshtat; Tech. Ed.: K.P. Voronin, and O.Ye. Larionov; Eds. of Set: S.G. Gerasimov, Professor; Ya.A. Kagan, Docent; P.D. Lebedev, Professor (Chief Ed.) and V.V. Lukmitskiy, Professor (Deceased).

Card 1/6

Heat Engineering (Cen.) SOV/1499

PURPOSE: This book is intended for students of power engineering and polytechnical vuzes. It may also be used by engineering and technical personnel engaged in the design, construction and operation of thermal equipment of thermoelectric power stations and industrial plants.

COVERAGE: This is the second volume of a two-volume heat-engineering handbook compiled by a group of professors and docents of the Moscow Power Engineering Institute. This volume deals with thermo-electric power plants, heating and ventilating systems, industrial plant thermal equipment, heat measuring instruments and automatic control of thermal processes. Special chapters are devoted to boiler materials, piping and other equipment. Brief information on the following subjects is given: heat-exchangers, evaporating and fractionating equipment, refrigeration systems and heat pumps, industrial furnaces, production, transportation and storage of fuel gases, pumps, fans, compressors, hoisting and transporting mechanisms, and temperature, pressure and flow measuring instruments. Standard graphical symbols for heat-power plant equipment and instruments and also the letter symbols and corresponding dimensions of various engineering quantities are given. Changes in the GOST (All-

Card 2/6

PHASE I BOOK EXPLOITATION SOV/2699

24(8)

Chistyakov, Sergey Fedorovich

Raschet dinamicheskikh kharakteristik teplovykh reguliruyemykh ob"yektov (Design of Dynamic Characteristics of Controlled Thermal Systems) Moscow, Metallurgizdat, 1959. 186 p. Errata slip inserted. 3,000 copies printed.

Ed.: A.P. Kopelovich; Ed. of Publishing House: A.A. Vagin; Tech. Ed.: A.I. Karasev.

PURPOSE: The book is intended for engineers and technicians in the metallurgical and machine-building industry and for students of vuzes.

COVERAGE: The author uses liquid-level analogs in analyzing problems of behavior of controlled thermal systems during transition from one steady-state regime to another (necessary for solution of automatic control problems and for improving the quality of systems). A new graphical-analytical method for determining the behavior of controlled thermal systems in transition regimes based on the use of statical characteristics of systems is presented. Examples of the application of this method to design of transition processes of

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Design (Cont.)

AVAILABLE: Library of Congress

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Card 3/3

PHASE I BOOK EXPLOITATION SOV/4988

Chistyakov, Sergey Fedorovich

Kratkiy spravochnik po teplotekhnicheskim priboram i regulyatoram (Concise Handbook on Thermal Instruments and Controllers) Moscow, Gosenergoizdat, 1960. 1960. 111 p. 30,000 copies printed.

Ed.: A.P. Vyatkin; Tech. Ed.: T.I. Pavlova.

PURPOSE: This handbook is intended for technical personnel working in heat control and automatic regulation.

COVERAGE: The handbook contains concise information on the principal thermal instruments and automatic controllers used in thermal engineering which are manufactured in series. No personalities are mentioned. There are 6 references, all Soviet.

TABLE OF CONTENTS:

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KOKORIN, O.Ya.; CHISTYAKOV, S.F.

Operation of central air conditioners in case of adiabatic regimes under climatic conditions prevailing in the village of Bhilai. Vod.i san.tekh. no.7:31-34 Je '60. (MIRA 13:7)
(Bhilai, India--Metallurgical plants--Air conditioning)

CHISTYAKOV, Sergey Fedorovich; NIKOLAYEV, V.V., red.; LARIONOV, G.Ye., tekhn.red.

[Principles of designing, installing, and operating automatic control and heat engineering control devices] Osnovy proektirovaniia montazha ekspluatatsii ustroistv teplotekhnicheskogo kontrolia i avtomatiki. Moskva, Gos.energ.izd-vo, 1961. 255 p. (MIRA 14:6)

(Temperature regulators)
(Heat engineering--Electronic equipment)

ROTACH, Vitaliy Yakovlevich; CHISTYAKOV, S.F., red.; BORUNOV, N.I., tekhn. red.

[Calculation of the adjustment of industrial automatic control systems] Raschet nastroiki promyshlennykh sistem regulirovaniia. Moskva, Gos. energ. izd-vo, 1961. 343 p. (MIRA 14:9)
(Automatic control)

ZAKHARASHEVICH, I.A.; SMAGIN, D.V.; GRINFEL'D, R.N.; CHISTYAKOV, S.F., kand. tekhn. nauk, retsenzent

[Concise manual on automatic controllers of boiler systems] Avtomaticheskie reguliatory kotel'nykh ustanovok; kratkii spravochnik. Moskva, Izd-vo "Mashinostroenie, 1964. 175 p. (MIRA 17:7)

MAKOVSKIY, Vitaliy Anatol'yevich; CHISTYAKOV, S.F., kand. tekhn. nauk, dots., retsenzent; VARSHAVSKIY, O.G., kand. tekhn. nauk, red.; GINZBURG, V.M., red.

[Control and automatic regulation of industrial processes in ferrous metallurgy] Kontrol' i avtomaticheskoe regulirovanie proizvodstvennykh protsessov v chernoi metallurgii; sbornik zadach. Moskva, Metallurgiia, 1965. 382 p. (MIRA 18:8)

CHISTYAKOV, S.I.

Maksimov, P.M. and Chistyakov, S.I. "Autoclave sterilization of blood stabilizer solutions in the light of experiments", Perelivaniye krovi, Collection 3, (Ivanovo), 1948, p. 5-17.

SO: U-3042, 11 March 53, (Letopis 'zhurnal 'nykh Statey No. 7, 1949)

CHISTYAKOV, S.I.

Maksimov, P.M. and Chistyakov, S.I. "Errors in determining blood-group compatibility of recipients, their forms, principles, and treatment," (Investigations carried on during the war), Perelivaniye krovi, Collection 3, (Ivanovo), 1948, p. 27-48.

SO: U-3042, 11 March 53, (Letopis 'zhurnal 'nykh Statey No. 7, 1949)

CHISTYAKOV, S.I.

Chistyakov, S.I. and Dobrovskaya, A.M. "Methods of separating plasma and therapeutic serum used at the Ivanovo Blood Transfusion Station", Perelivaniye krovi, Collection 3, (Ivanovo), 1948, p. 140-46.

SO: U-3042, 11 March 53, (Letopis 'zhurnal 'nykh Statey No. 7, 1949)

CHISTYAKOV, S.I.

Chistyakov, S.I. and Maksimov, P.M. "A cloth isothermic container for transporting blood", Perelivaniye krovi, Collection 3, (Ivanovo) , 1948, p. 176-85.

SO: U-3042, 11 March 53 (Letopis 'zhurnal 'nykh Statey No. 7 1949)

CHISTYAKOV, S.I.

Chistyakov, S.I. "Modification of testing for a standard blood bank," Pereliyanye krovi, Collection 3, (Ivanovo), 1948, p. 186-88.

SO: U-3042, 11 March 53, (Letopis 'zhurnal 'nykh Statey No. 7 1949)

CHISTYAKOV, S.I.

Bobrovskaya, A.N. and Chistryakov, S.I. "Dried serum in village medical practice", Perelivaniye krovi, Collection 3, (Ivanovo), 1948, p. 189-96.

SO: U-3042, 11 March 53, (Letopis 'zhurnal 'nykh Statey No. 7, 1949)

CHISTYAKOV, S. I.

CHISTYAKOV, S. I. -- "Experimental Verification of Autoclave Procedures as Applied to the Problems of Preserving Blood." Min Health RSFSR. Ivanovo State Medical Inst. Hospital Surgical Clinic. Ivanovo, 1956. (Dissertation for the Degree of Candidate in Medical Sciences).

So.: Knizhnaya Letopis', No. 6, 1956.

CHISTYAKOV, S.I., kand.med.nauk (Ivanovo (obl), ul.Arseniya, d.54/32)

Apparatus for induction of local anesthesia without a syringe by a closed method. Vest.khir. 80 no.4:139-141 Ap'58 (MIRA 11:5)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof. P.M. Maksimov) Ivanovskogo meditsinskogo instituta.
(ANESTHESIA, LOCAL, appar. & instr.
appar. for local anesth. without a syringe (Rus))

ACC NR: AP6035655 SOURCE CODE: UR/0133/66/000/011/1041/1044

AUTHOR: Chistyakov, S. L.; Mokhir, Ye. D.; Filatov, S. K.

ORG: Zlatoustov metallurgical plant (Zlatoustovskiy metallurgicheskiy zavod)

TITLE: Effect of cerium on the structure and properties of OKh23N18 steel

SOURCE: Stal', no. 11, 1966, 1041-44

TOPIC TAGS: cerium, oxidation resistant steel, stainless steel, chromium nickel steel, cerium containing steel, steel structure, steel property/ OKh23N18 stainless steel

ABSTRACT: Several heats of OKh23N18 stainless steel were melted in a 10-ton basic arc furnace, with ferrocerium added as the finishing period, and cast into 2.7-ton ingots. It was found that the presence of cerium in the solid solution affects the diffusional processes taking place in steel during its crystallization and thus helps to reduce dendritic nonuniformity. This in turn results in a more uniform structure which makes it possible to expand the hot-working temperature range without danger of cracking. Orig. art. has: 6 figures.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 005

Card 1/1 UDC: 669.15-194

ACC NR: AP6035655 SOURCE CODE: UR/0133/66/000/011/1041/1044

AUTHOR: Chistyakov, S. I.; Mokhir, Ye. D.; Filatov, S. K.

ORG: Zlatoustov metallurgical plant (Zlatoustovskiy metallurgicheskiy zavod)

TITLE: Effect of cerium on the structure and properties of OKh23N18 steel

SOURCE: Stal', no. 11, 1966, 1041-44

TOPIC TAGS: cerium, oxidation resistant steel, stainless steel, chromium nickel steel, cerium containing steel, steel structure, steel property/ OKh23N18 stainless steel

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SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 005

Card 1/1 UDC: 669.15-194

TRAKHIMOVICH, V.I., inzh.; CHISTYAKOV, S.I., inzh.; MOKHIR, Ye.D., inzh.; FILATOV, S.K., inzh.; YAKOBSON, V.Z., inzh.

Improving the technology of the production of OKh23N18 and Kh23N18 steels. Stal' 25 no.12:1092-1094 D '65.
(MIRA 18:12)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni I.P. Bardina i Zlatoustovskiy metallurgicheskiy zavod.

CHISTYAKOV, S.V.

CHISTYAKOV, S.V., inzhener.

Large scale topographic map compilation on stereoplanigraph. Trudy VNIMI no.25:150-156 '52. (MLRA 8:3)
(Aerial photogrammetry)

3(2) 3(4) PHASE I BOOK EXPLOITATION SOV/1283

Kell', L.N., Doctor of Technical Sciences; S.A. Filatov, Candidate of Technical Sciences; S.V. Chistyakov, Candidate of Technical Sciences; and Ye.L. Astvatsaturov, Engineer

Metodicheskiye ukazaniya po nazemnoy stereofotogrammetricheskoy s"yemke kar'yerov (Practical Instructions for Terrestrial Stereophotogrammetric Surveys of Open-pit Mines) Moscow, Ugletekhizdat, 1957. 141 p. 1,100 copies printed.

Sponsoring Agency: Vsesoyuznyy nauchno-issledovatel'skiy markscheyderskiy institut.

Ed.: Omel'chenko, A.N.; Tech. Eds.: Korovenkova, Z.A. and Aladova, Ye.I.

PURPOSE: This book is intended as a manual for surveyors of open-pit mines.

COVERAGE: The subject text is the result of experiments and tests of the All-Union Scientific Research Institute of Mine Surveying (VNIMI) during the 1951-1955 Five Year Plan. It is devoted solely to the

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Practical Instructions (Cont.) SOV/1283

terrestrial stereophotogrammetric technique. However, preparatory reconnaissance, field measurements and photo-lab procedures are also described. The following scientists reviewed and made contributions to the text: Professor D.N. Ogloblin, Professor F.F. Pavlov , Professor F.V. Drobyshev, Docent M.N. Yutanov , Docent D.M. Kudritskiy, Candidate of Technical Sciences M.A. Peregudov and Candidate of Geological and Mineralogical Sciences Yu.G. Staritskiy as well as the mine-surveyors of the Korkinugol'Trust. There are 7 Soviet references.

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Practical Instructions (Cont.)

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Card 5/5

Chistyakov, S.V.

NIKIFOROV, Dmitriy Ivanovich; CHISTYAKOV, S.V., otvetstvennyy redaktor; KUZNETSOV, A.D., redaktor izdatel'stva; KOTLYAKOVA, O.I, tekhnicheskiy redaktor.

[Photogrammetry in marine studies below hydraulic structures] Fotogrammetriia v morskikh issledovaniiakh pod gidrotekhnicheskie sooruzheniia. Leningrad, Izd-vo "Morskoi transpor," 1957. 149 p. (MLRA 10:5)

(Photogrammetry) (Hydraulic engineering)

CHISTYAKOV, S.V., kand.tekhn.nauk

Aerophotographs in special geological cartography of coal deposits. [Trudy] VNIMI no. 33:131-146 '58. (MIRA 14:5)
(Coal geology--Maps)

TRUNIN, A.P.; FINAREVSKIY, I.I.; CHISTYAKOV, S.V.; PETUKHOVA, V.A., tekhn. red.

[Practical handbook on large scale phototheodolite surveying] Fototeodolitnaia s"emka v krupnykh masshtabakh; prakticheskoe rukovodstvo. Leningrad, 1960. 240 p. (MIRA 16:6)

1. Leningrad. Vsesoyuznyy nauchno-issledovatel'skiy markshey-derskiy institut.
(Photographic surveying) (Theodolites)

CHISTYAKOV, S.V., kand.tekhn.nauk

Using a radioaltimeter and a statoscope for bringing photogrammetric nets to scale. [Trudy] VNIMI no.45:74-90 '62. (MIRA 16:4)
(Photographic surveying)

ASTVATSATUROV, Ye.L., inzh.; ZABRODIN, A.S., kand. geol.-mineralogicheskikh nauk; KOKOREVA, K.L., inzh.; TARKANOV, R.A., inzh.; CHISTYAKOV, S.V., kand.tekhn.nauk

[Photogrammetric method for the geological documentation of underground mines; methodological instructions] Fotogrammetricheskii metod geologicheskoi dokumentatsii podzemnykh gornykh vyrabotok; metodicheskie ukazaniia. Leningrad, 1963. 25 p. (MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gornoy geomekhaniki i marksheyderskogo dela. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut gornoy geomekhaniki i marksheyderskogo dela.

CHISTYAKOV, S.Ya.

Autoplasty of the femoral artery with a venous segment of large diameter under experimental conditions. Trudy LSGMI 59:109-112 '60. (MIRA 14:9)

1. Kafedra operativnoy khirurgii i topograficheskoy anatomii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy - prof. K.A.Grigorvich).
(FEMORAL ARTERY) (VEINS--TRANSPLANTATION)

TARTAKOVSKIY, D.F.; CHISTYAKOV, V.A.

Experimental determination of the thermal inertia of a resistance thermometer. Nov. nauch.-issl. rab. po metr. VNIIM no.1:35-39 '63. (MIRA 17:9)

DUDCHENKO, Maksim Andreyevich, dots.; CHISTYAKOV, V.A., red.

[Urolithiasis and its treatment at the Truskavets Health Resort] Mochekamennaia bolezn' i ee lechenie na kurorte Truskavets. Kiev, Zdorov'ia, 1964. 108 p. (MIRA 18:1)

L 52701-65 EWT(l)/EPA(s)-2/EWP(m)/EPF(n)-2/EPR/EWP(t)/EPA(bb)-2/EWP(b)
Pz-6/Pe-4/Pt-7/Pu-4 IJP(c) JD/WW/JG/AT

ACCESSION NR: AP5016472

AUTHOR: Gordov, A. N.; Krivtsov, V. A.; Fraktovnikova, [illegible]

TITLE: Experimental study of the inertia[illegible]

SOURCE: [illegible]

TOPIC TAGS: thermocouple, heat transfer coefficient, [illegible]

ABSTRACT: Five types of miniature thermocouples [illegible] oped at FEI (V. Ye. Mikhailin at al., Voprosy teploobmena [Problems of Heat Transfer] [illegible] [illegible] of varying [illegible] were mounted in capillary tubes, and [illegible] liquid tin, depending on the thermocouple diameter, [illegible]

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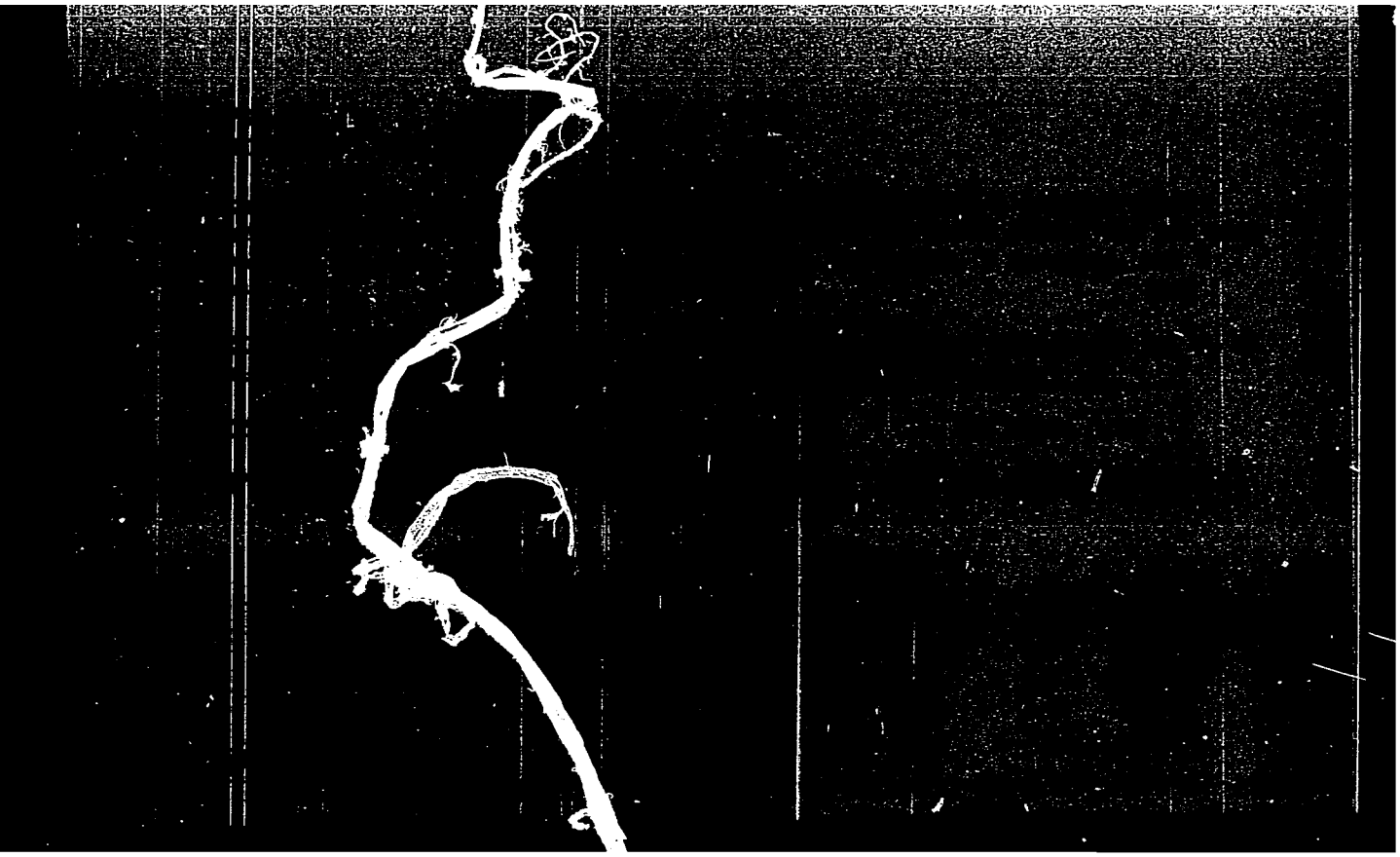

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308910010-9"

ACC NR: AR6025358 SOURCE CODE: UR/0269/66/000/004/0070/0070

AUTHOR: Chistyakov, V. F.

TITLE: The minimum solar activity

SOURCE: Ref zh. Astronomiya, Abs. 4.51.524

REF SOURCE: Astron. tsirkulyar, no. 331, maya 19, 1965.

TOPIC TAGS: sun, sunspot, solar activity, sunspot cycle

ABSTRACT: The concept "minimum" denotes the lowest level of solar activity in the junction of adjoining 11-yr cycles. In addition, at the instant the minimum occurs the activity of the old cycle at low latitudes becomes equal to that of the new cycle at high latitudes. According to the proposed method, the instant of minimum is to be related to such a month in which the predominance of spots of the new cycle is first observed. Such a method gives a systematic delay of 0.15 yr in fixing the month of minimum solar activity. On the basis of an analysis of data of sunspot observations, conducted at the Ussuriyskaya station in 1964, the instant of minimum solar activity is considered to be July of 1964. [Translation of abstract] V. Ch.

SUB CODE: 03

Card 1/1 UDC: 523.745

KISELEV, A.A., kand. tekhn. nauk; ANTIPOV, K.I., inzh.; LAPSHOVA, M.P., inzh.; CHISTYAKOV, V.F., inzh.

Increasing the density of 45G2 and other structural steel ingots. Stal' 25 no.12:1090-1091 D '65. (MIRA 18:12)

1. Zavod "Krasnyy Oktyabr'".

ACC NR: AR6033095 SOURCE CODE: UR/0269/66/000/007/0055/0055

AUTHOR: Chistyakov, V. F.

TITLE: Structure of sunspot penumbra

SOURCE: Ref. zh. Astronomiya, Abs. 7.51.387

REF SOURCE: Sb. Solnechn. aktivnost', No. 2. M., Nauka, 1965, 157-167

TOPIC TAGS: sunspot, magnetic field, penumbra, sunspot penumbra, magnetic tube, sunspot magnetic tube

ABSTRACT: A mechanism is described which explains the structural characteristics of sunspot penumbras: the reaction between a sunspot magnetic tube and a convective zone. In a collision between the turbulent element and the sunspot magnetic tube (caused by convection), the sunspot magnetic field does not reach the turbulent element, because of self-induction. If the condition $E_{mag} > E_{kin}$ prevails, the motion of the element, following a collision, is determined by the magnetic field of the sunspot: the magnetic tube at first inhibits the motion of the element, simultaneously undergoing a certain amount of deformation itself; then, because they are elastic,—the magnetic lines of force straighten out and the turbulent

Card 1/2 UDC: 523.746

ACC NR: AR6033095

element is deflected aside, such as in an elastic collision. The proposed scheme explains the limitations of the convection and dispersion of turbulent elements away from the axis of the magnetic tube. It also explains the basic elements in the fine structure of the penumbra, the formation of light Secchi rings and bright "bridges" between adjacent nuclei in some sunspots, the sharpness of sunspot edges, and the characteristics of Evershed velocities in the sunspot penumba. A bibliography of 42 references is included. B. Shel'ting. [Translation of abstract] [SP]

SUB CODE: 03/

Card 2/2

CHUKOV, V.A., kand. tekhn. nauk, dotsent (Leningrad); CHISTYAKOV, V.I., inzh. (Leningrad); TSIRKIN, Ye.B., inzh. (Leningrad)

Method for the complete utilization of peat for the production of synthetic ammonia and metallurgical coke. Trudy LIEI no.37:168-178 '61. (MIRA 18:4)