OSHCHEPKOV, A.A., sanitarnyy vrach

River sanitary inspection by a mobile unit of a sanitary and epidemiological control station. Gig. i san. 24 no.4:47-51 Ap '59. (MIRA 12:7)

1. Iz Altayskoy krayevoy sanitarno-epidemiologicheskoy stantsii.
(WATER SUPPLY,
rivers, sanit. control by mobile units (Rus))

OSHCHEPKOV, Aleksandr Aleksandrovich; YERSHOVA, I., red.

[Our drinking water] Voda, kotoruiu my p'em. Kaluga, Kaluzhskoe knizhnoe izd-vo, 1963. 33 p.
(MIRA 17:5)

OSHCHEPKOV, A.S., red.; YEVSTIGNEYEVA, V.S., tekhn. red.

[Time norms for fitting and assembling operations in the assembly of chemical and petroleum refining apparatus in machine shops; piece and small lot production] Normativy vremeni na slesarno-sborochnye raboty po sborke khimicheskoi i neftepererabatyvaiushchei apparatury v mashinostroitel'nykh tsekhakh; edinichnoe i melkoseriinoe proizvodstvo. Moskva, 1963. 266 p. (MIRA 17:4)

1. Moscow. TSentral'noye byuro promyshlennykh normativov po trudu.

OSHCHEPKOV, G. D.

Moscow - Buildings

Remodelling of the Moscow Hippodrome. Gor. khoz. Mosk. 26 no. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, April 1952. UNCLASSIFIED.

OSHCHEPKOV, G.Ya.

How to draw up a request for diamond tools, pastes and powders.
Mashinostroitel' no.10:33, 45 O '64. (MIRA 17:11)

OSHCHEPKOV, P. K.

USSR/Physics - High Vacuum Technique Sep 53

"Standard High-Vacuum Combination Apparatus for the New Building of Moscow University," P. K. Oshchepkov, E. M. Reykhrudel' and T. N. Stasyuk

Vest Mos Univ, Ser Fizikomat i Yest Nauk, No 6, pp 65-77

The article is in 6 parts. The first sets forth the requirements of high vacuum apparatus and gives a general description of types TVU-I, II, III and IV. Part 2 describes the TVU-I in detail and explains how it fulfills its requirements. Part 3

275T103

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describes schematically the vacuum communications of TVU-I. Parts 4 and 5 deal with different types of valves employed in high vacuum apparatus. Part 6 reviews all the good qualities of the apparatus and lauds its constructors. Presented 10 Jul 1952

OSHCHEPKOV, P.K.; ROZENBERG, L.D; SEMENNIKOV, Yu.B.

Electronic and acoustic converter for the visualization of sound patterns. Akust. zhur. 1 no.4:348-351 O-D '55. (MLRA 9:2)

1.Akusticheskiy institut i Institut metallurgii imeni A.A.Baykova AN SSSR.
(Electroacoustics) (Oscillators, Crystal) (Ultrasonic waves)

PA - 2468

AUTHOR: OSHCHEPKOV,P.K.

TITLE: Conference on the Destructionless Testing of Material. (Konferentsiya po ispytaniyu materialov bez razrusheniya,Russian)

PERIODICAL: Vestnik Akademii Nauk SSSR, 1957, Vol 27, Nr 1, pp 78 - 80 (U.S.S.R.)

Received: 5 / 1957 Reviewed: 5 / 1957

ABSTRACT: Following the initiative of the Czechoslovakian Academy of Science an international conference was held at Liblize near Prague from 29.10. to 3.11.1956, which dealt with the theory and practice of the application of ultrasonic waves, gamma radiation of radioactive isotopes, high-energy gamma quanta of betatrons, as well as other penetrating types of radiation, for the purpose of controlling the quality of material without their destruction. The aforementioned types of radiation make it possible to detect defects in the interior of untransparent and hard materials, and are used mainly for the purpose of production control. J.Oppelt (of the Czechoslovakian Radiologic Institute) demonstrated an apparatus of particular sensitivity and stability on the occasion of the determination of deviations of the wall thickness of metal tubes from standard specification. The tube investigated was not even touched. An interesting apparatus was shown by F.Gavelka. By the application of the differentiated compensation of two special magnetic fields he succeeded in inventing a highly-sensi-

Card 1/2

Conference on the Destructionless Testing of Material.

tive portable apparatus for the control of seamless tubes and metal constructions. As mentioned by Dr.M.Saidel and Dr.I.Kuba in the course of their lectures, the first betatrons of 15 MeV each were built in Czechoslovakia and they are now in the act of being completed. The author delivered a lecture on this conference on the principles developed by S.Ya.Sokolov for the construction of apparatus working with ultrasonics, a subject he had already dealt with in 1936. The lecture met with great success and was repeated at Prague by request of the Czechoslovakian Academy of Science. The following discussions show that the "progress made by Soviet scientists within this field is exemplary." The author recommends the pamphlet containing a collection of lectures delivered on the above conference, as well as a book published at the same time by Dr.V.Gajdovski and entitled "The application of X-Ray gamma Radiation in Industry."

ASSOCIATION: Not given.
PRESENTED BY:
SUBMITTED:
AVAILABLE: Library of Congress.
Card 2/2

OSHCHEPKOV, P. K.

AUTHOR: Oshchepkov, P. K., Doctor of Technical Sciences. 30-9-5/48

TITLE: The Electron-Accelerators and their Importance for Science and National Economy (Uskoriteli legkikh chastits v nauke i narodnom khozyaystve).

PERIODICAL: Vestnik AN SSSR, 1957, Vol. 27, Nr 9, pp. 25 - 30 (USSR).

ABSTRACT: When with the aid of the synchrophasotron constructed in the USSR mainly cardinal problems of today's nuclear physics are solved, the ordinary accelerators of β-particels, of which several dozen are already in operation in the USSR, are due to their great reliability not only of greatest importance to science, but also to economics. They became indispensable for medical and biological research-purposes. In the middle of April of 1957 a consultation was held - in accordance with the resolutions of the Presidium of the AN USSR - which dealt with the possibilities of utilization of these electron-accelerators. It became known that valuable works with regard to the biological action of the betatron are carried out in the Tomsk Polytechnic Institute. Due to the radiation-intensity of this electron-accelerator (3600-1800 roentgen) a strongly marked radiation-disease develops which causes an essential change in the structure of leucocytes. An extremely high reduction of lymphocytes was noticed. This process

Card 1/2

SOV/30-58-10-11/54

AUTHOR: Oshchepkov, P. K., Doctor of Technical Sciences

TITLE: Infra-Red Microscope (Infrakrasnyy mikroskop)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 10, pp 64-66 (USSR)

ABSTRACT: In the years 1956 and 1957 the project of an infra-red microscope was worked out in the elektro-fizicheskaya laboratoriya Instituta metallurgii im. A. A. Baykova Akademii nauk SSSR (Electro-Physical Laboratory of the Institute of Metallurgy imeni A. A. Baykov of the AS USSR). It represents a typical device for "introscopy", i.e. the visualization of details in opaque surroundings. It can be used for visualization in all kinds of materials and bodies of comparatively low absorption of infra-red rays: it permits enlargement by the 100- to 600-fold. The present electro-optical methods of transformation permit to turn any current of infra-red rays into an electronic current of the same distribution of density. The over-all system of this microscope is represented in the figure and described subsequently. In practical application it may be used for the examination of structural homogeneity and purity of materials. With this microscope objects of a thickness of several

Card 1/2

microns up to several millimeters and even more can be examined. There is 1 figure.

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

28(5)
AUTHOR: Oshchepkov, P. K. SOV/32-25-6-15/53

TITLE: On the "Introscopy" of Nontransparent Materials (Ob introskopii neprozrachnykh materialov)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 6, pp 684-689 (USSR)

ABSTRACT: At present, the necessity is greatly felt of working out direct visual control methods by the application of different penetrating radiations of the so-called introscopy (I). The progress achieved in technical electronics permits the solution of such tasks in a wide frequency range. The application of (I) is based on the physical properties of the penetrating rays. Damping of ultrasonics by dispersion on the crystal lattice of a material depends, for example, on the grain size (Fig 1, for ferrite in steel); thus, in fatigue phenomena of metals, variations are observable also on the penetrating ultrasonics (Fig 2, for various thermal treatments of steel). These "images" of ultrasonics are not determinable visually, but they can be rendered visible. Thus, by the aid of the ultrasonics (I) an electrical spot welding zone can be controlled (Figs 3,4). The possibility of converting the ultrasonic images into visible forms was

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On the "Introscopy" of Nontransparent Materials SOV/32-25-6-15/53

realized already in 1936 as per (Ref 1), but only recently Russian scientists succeeded in solving the technical problems involved and in devising electron acoustic transformers (Fig 5). The transformer consists of the input target which transforms the ultrasonic pressure into an electric relief, and the electronic apparatus which resembles an electronic beam tube. Piezoelectric materials in the form of lamellas, mosaics, and textures are used for the input receiving target. A figure is shown depicting a laboratory ultrasonic introscope with the required electrotechnical appliances (Fig 6). Besides ultrasonics, also longwave heat rays may be used for the (I), the visualization of which is obtained with electron optical transformers and light-sensitive layers. Electromagnetic rays with a greater wavelength may serve for the investigation of wood, concrete, tiles, etc. Shorter electromagnetic rays of the X-ray and gamma ray type are likewise used for (I) (Fig 8, scheme of an arrangement for television with gamma irradiations). There are 9 figures and 1 Soviet reference.

ASSOCIATION: Institut metallurgii Akademii nauk SSSR im. A. A. Baykova (Institute of Metallurgy of the Academy of Sciences of the USSR imeni A. A. Baykov)

Card 2/2

87370

S/120/60/000/004/009/028
E032/E414

9.4110 (1003, 1105, 1140)

AUTHORS: Oshchepkov, P.K., Skvortsov, B.N., Osanov, B.A. and Siprikov, I.V.

TITLE: Application of Continuous Secondary Electron Multiplication to the Amplification of Small Currents

PERIODICAL: Pribory i tekhnika eksperimenta. 1960, No 4, pp 89-91

TEXT: The principle of the multiplier is illustrated in Fig.1 in which 1 and 2 are contact rings. 3 is a cylindrical tube (secondary emitter), 4 is the electron collector, 5 is a microammeter and Φ_c is the incident radiation giving rise to secondary electron emission from the inner surface of the cylinder. It was found that the best results were obtained with a mixture of TiO_2 and MgO as the secondary emitter. The electrical conductivity of this mixture can be varied within relatively wide limits and after suitable treatment the material is capable of producing sufficiently high secondary emission. The material for the tube was prepared as follows: one part by weight of TiO_2 and one part by weight of MgO were soaked in ethyl alcohol and thoroughly mixed. The mixture was then dried in air in a drying cupboard at 100°C for 2 hours. The dried mixture was sifted and

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E032/E414

Application of Continuous Secondary-Electron Multiplication to the Amplification of Small Currents

baked in a furnace and the temperature was raised to 1200 °C at the rate of 200°C per hour and kept at 1200°C for 2 hours. The baked material was then sifted again using the 0053 sieve. The powder thus obtained was then used to prepare the following mixture: 1 kg of the above powder, 225 g of homogenized paraffin and 3 to 5 g of oleic acid. The cylindrical tube was made from this mixture by baking in an MgO powder at the rate of 50° per hour up to 1300°C. The specimen was kept at that temperature for 3 hours. It was then allowed to cool over a period of 12 to 15 hours. The tube thus manufactured was then placed in a hydrogen atmosphere and heated to 1200°C in 1 hour. It was kept at that temperature for 30 min and then cooled over a period of 2 hours. The tube was then placed in a special vacuum chamber in which oxygen activation was carried out under the following conditions: temperature 500 to 600°C, pressure of oxygen 0.1 to 0.01 mm Hg, activation time 1 to 3 min. Fig.4 and 5 show the results obtained. There are 5 figures and 13 references: 10 Soviet and 3 non-Soviet.

Card 2/5

87370
S/120/60/000/004/009/02?
E032/E414

Application of Continuous Secondary-Electron Multiplication to the Amplification of Small Currents

ASSOCIATION: Institut metallurgii AN SSSR
(Institute of Metallurgy AS USSR)

SUBMITTED: May 27, 1959

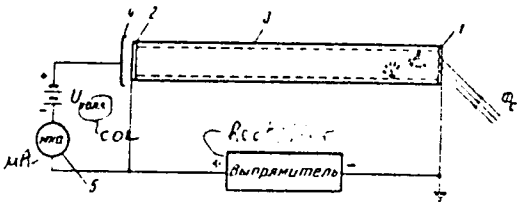

Рис. 1. Схематическое устройство непрерывного вторичноэлектронного умножителя. *1*, *2* — контактные кольца, *3* — цилиндрический канал, *4* — коллектор электронов, *5* — прибор, регистрирующий выходной ток, Φ_0 — первичная радиация, вызывающая с внутренней поверхности электронную эмиссию

Fig.1.

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SOV/14-6-/000/005/001/014
1007/1207

AUTHORS: D'yachenko,P.E., Oshchepkov,P.A., Polkacheva,N.M., Andreyev,G.A., Chudov,V.N., Goryunov,A.M., and Dubova,L.N.

TITLE: On the [illegible] of metal surface layers by irradiation

SOURCE: Akademiya nauk SSSR. Komissiya po tekhnologii mashinostroyeniya. Seminar po kachestvu poverkhnosti. Trudy. no. 5,1961. Kachestvo poverkhnosti detaley mashin; metody i pribory, uprochneniye metallov, tekhnologiya mashinostroyeniya, 27-31

TEXT: The thermal effect of nuclear irradiation in the surface layers of metals was investigated after electronic, ionic and deuteron irradiation. The equipment consisted of a voltage-pulse generator, electron gun and a vacuum unit. Considerable increase in the wear resistance of metals resulted from the levelling of micro-irregularities, fusion of micro-cracks and the sudden quenching of the surface layer. In a second test, ionic irradiation was achieved in a unit for the electromagnetic separation of isotopes by irradiation with titanium ions. The titanium diffused into the surface of the specimens to a depth of 1.0 microns and wear resistance
Card 1/2

S/514/62/000/005/001/014
E071/E207

On the hardening of metal...

increased by as much as 10 times compared to the initial resistance. Microhardness increased by as much as 1.5 times. Deuteron irradiation was performed in a cyclotron and resulted in an increase of microhardness by a factor of 2-3, and of wear resistance by a factor of 2-2.5. There are 4 figures.

Card 2/2

26248
S/194/61/000/001/012/038
D216/D304

1 8000

AUTHORS: Lushnikov, G.A. and Oshchepkov, P.K.

TITLE: Applications of an electron-acoustical transducer for the analysis of metal homogeneity

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 1, 1961, 2, abstract 1 E12 (V Sb. Primeneniye ul'traakust. k issled. veshchestva, no. 11, M., 1960, 123-134)

TEXT: The electron-acoustical transducer, designed in 1955 at the Institute of Metallurgy of the AS USSR, can be used for ultrasonic introscope-instruments for visual inspection in opaque materials. The experiments which have been carried out prove the possibility of applying it for defect analysis of metals and for the control of point-welding of sheet materials. The experiments have shown that the instrument can be used for determining the thickness of the electrically-hardened layers of various products. In work-

Card 1/2

Applications of an electron...

ing with the ultrasonic introscope it is necessary to be aware of the fact that in certain cases super-contrast pictures are obtained - due to the phase contrast effect. The instrument can be used for the control of mono-crystal growth, cementation layers, mechanical and thermal processing of products and many other, especially rapidly occurring processes. 7 references.

Card 2/2

OSHCHEPKOV, P.K.; ROZENBERG, L.D.; SEMENNIKOV, Yu.B.

Electronic acoustic transducer for the visualization of sound images.
Akust.zhur. 7 no.2:268 '61. (MIRA 14:7)

1. Akusticheskiy institut AN SSSR, Moskva.
(Sound waves) (Transducers) (Electron optics)

S/137/62/000/004/132/201.
A060/A101

AUTHORS: Lushnikov, G. A., Oshchepkov, P. K.

TITLE: On the use of an electronic-acoustic transducer for investigating the homogeneity of metals

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 87, abstract 4I525 ("Tr. In-ta metallurgii, AN SSSR", 1961, no. 8, 166-172)

TEXT: An unsoldered vacuum electron-acoustic transducer of a new type, whose service life is equal to the service life of electron-ray tubes is used for visualizing inhomogeneities in metal. A block-diagram of a supersonic introscope - device for examining in opaque media - is given. An experimental confirmation is obtained for the possibility of applying the ultrasonic introscope for flaw detection in metals, and in particular for the quality control of spot welding of sheet materials and for determining the thickness of electrically hardened layer of articles. The specimens for defectoscopic tests fabricated from Al, duraluminum, steel of various grades, and other metals had the shape of cylinders 65 mm long and 20 mm diameter, and the artificial defects in the butt portion of the specimen were located beyond the region of the near field of

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3/137/62/000/004/132/201
A060/A101

On the use of an electronic-acoustic ...

the supersonic emitter. The experiments were carried out at ultrasonic intensities acting upon the input of the receiving piezo plate corresponding to the linear work of the electron-acoustic transducer (10^{-3} - 10^{-6} watts/cm^2). The spot-weld control is carried out on sheet steel 2 mm thick at mean diameters of the spot-welds 4 - 9 mm. It is proven that the small difference in the active loads of the matel (composing the combined specimens) has practically no effect upon the formation of the supercontrast images. Extensive possibilities for the application of ultrasonic introscopes in metallurgy and metal physics are noted.

V. Ferenets

[Abstracter's note: Complete translation]

Card 2/2

USSR

L 20110-63 MLK(a)

ACCESSION NR: AP3006671 S/0286/63/000/008/0031/0031

AUTHOR: Siprikov, I. V.; Oshchepkov, P. K.; Grechanik, L. A.; Chuyko, G. A.; Faynberg, Ye. A.

TITLE: A method of producing emitters for electronic multipliers. Author's certificate NR 153979 class H 01j; 21g, 13 sub 19

SOURCE: Byul. izobreteniy i tovarny*kh znakov, no. 8, 1963, 31

TOPIC TAGS: emitter, electronic multiplier emitter, lead-silicate emitter

ABSTRACT: A method of producing emitters of electronic multipliers with continuous potential distribution on the surface of the emitters, characterized in that, to increase the coefficient of secondary emission of the emitter and its resistance against atmospheric influence, lead-silicate glass emitter blanks are fixed in a hydrogen atmosphere at 380-400C. Orig. art. has: no graphics.

ASSOCIATION: none

SUBMITTED: 05Feb62 DATE ACQ: 30Sep63 ENCL: 00

SUB CODE: SD, MA NO REF SOV: 000 OTHER: 000

Card 1/1

LYUBITOV, Yu.N.; OSHCHEPKOV, P.K., prof., doktor tekhn. nauk, otv. red.

[Calculating the interaction of molecular flows with the vessels containing them] Raschet vzaimodeistviia molekuliarnykh potokov s ograzhdaiushchimi ikh sosudami. Moskva, Nauka, 1964. 146 p. (MIRA 17:8)

OSHCHEPKOV, Pavel Konstantinovich, inzh.-izobr., prof., doktor tekhn. nauk, zasl. deyatel' nauki i tekhniki RSFSR; GUROV, S., red.

[Life and dream; notes of an engineer, inventor, designer and scientist] Zhizn' i mechta; zapiski inzhenera-izobretatelia konstruktora i uchenogo. Moskva, Moskovskii rabochii, 1965. 308 p. (MIRA 18:8)

37137-66 EWT(d)/EWT(l)/EWP(c)/T/EWP(k)/ EWP(l) LJP(c) CC
ACC NR: AP6014421 (A) SOURCE CODE: UR/0381/65/000/005/0030/0033

AUTHORS: Bekeshko, N. A.; Oshchepkov, P. K.

ORG: NII Introskopii, Moscow

TITLE: Infrared method for detecting hidden defects in resistors

SOURCE: Defektoskopiya, no. 5, 1965, 30-33

TOPIC TAGS: carbon resistor, resistor, ir analysis, ir detection

ABSTRACT: A method employing infrared radiation for the detection of defects in carbon, metallized and wire type electrical resistors is described. The method is based on the generation of local temperature gradients by the defects. A block diagram of the apparatus is presented (see Fig. 1), and the experimental results are

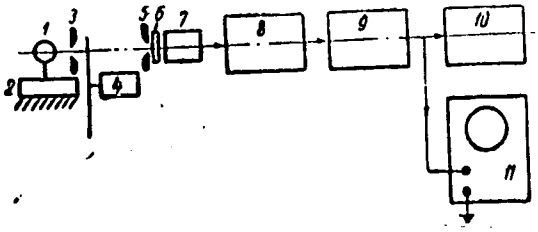

Fig. 1. Block diagram of the installation. 1 - resistor specimen; 2 - stand; 3 and 5 - slits; 4 - modulator; 6 - PbS filter; 7 - photo resistor; 8 - resonance amplifier; 9 - detector; 10 - potentiometer EPP-09; 11 - oscillograph.

UDC: 621.384.3:620.179

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ACC NR: AP6014421

shown graphically (see Fig. 2). It is concluded the infrared method is a simple

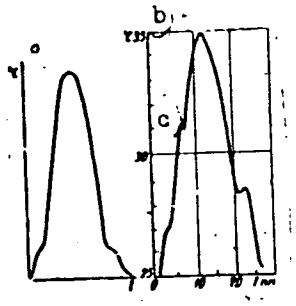


Fig. 2. A sample of the recording of the temperature distribution along the length of the resistor. a - normal resistor; b - resistor with defect; c - defect.

and effective means for the determination of defects in electrical resistors. Orig. art. has: 5 figures.

SUB CODE: 17, 09/ SUBM DATE: 02Aug65/ ORIG REF: 001/ OTH REF: 002

L 8325-66

ACC NR: AP5028047 SOURCE CODE: UR/0046/65/011/004/0438/0441

56
49
B

AUTHOR: Grasyuk, D.S.; Oshchenkov, P.K.; Rozenberg, L.D.; Semennikov, Yu. B.

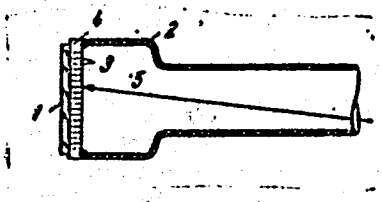
ORG: Institute of Acoustics, AN SSSR, Moscow (Akusticheskiy institut AN SSSR)

TITLE: An ultrasonic acoustic visor with a new U-55 electronic-acoustic image converter

SOURCE: Akusticheskiy zhurnal, v. 11, no. 4, 1965, 438-441

TOPIC TAGS: ultrasonic equipment, electronic device, acoustic equipment, image converter

ABSTRACT: The authors present a description of a new U-55 electronic-acoustic image converter in which the piezoelectric receiving plate is not one of the walls of the vacuum vessel, as opposed to image converters in common usage which use a wall (usually the front wall) of the vacuum vessel as the plate. A schematic diagram of the device is presented (Fig. 1). It is



1 - Receiving piezoelectric plate; 2 - Converter body; 3 - Thin metal lead-in; 4 - glass plate; 5 - electron beam.

Card 1/2

UDC: 620.179.16

2

L 8325-66

ACC NR: AP5028047

noted that the converter is capable of copying the image of any electric contour incident on its surface, regardless of the origin of the contour, i.e., it may be used in a system with any contour source such as infrared or electrolytic. It has been named a "unicon" (unikon) (universal converter) because of its universal applicability. An acoustic visor (introscope) designed on the basis of the new converter, operating in the 3--9 Mc range, has been tested. Several examples of its application are given and discussed. It is noted that the examples presented show that the introscope makes it possible to obtain satisfactory images of a great variety of objects and may become the prototype of industrial units for obtaining visible images of defects in metals and plastics, and may also be utilized in medical diagnostics. Authors express their gratitude to V.I. Rybalka, M.A. Gorodnicheva, T.I. Didyus', R.G. Molchanova, V.I. Stepanov, S.I. Filipov, and V.I. Fomin, who participated in the development, construction, and tests of the converter and the ultrasonic introscope. Orig. art. has: 8 figures.

SUB CODE: GP, IE / SUBM DATE: 17Aug65 / ORIG REF: 006 / OTH REF: 005

jw

Card 2/2

L 44716-66 EWT(d)/EWP(e)/EWA(v)/T/EWP(k)/EWP(l) IJP(c)

ACC NR: AP6023645 SOURCE CODE: UR/0381/66/000/002/0022/0029

AUTHOR: Oshchepkov, P. K.; Klimov, K. M.; Voronova, I. S.

ORG: NII Introscopy (NII introskopii)

TITLE: Development and investigation of an electromagnetic intrascope for recording 2-dimensional images of the magnetic relief of tubes on electrochemical paper

SOURCE: Defektoskopiya, no. 2, 1966, 22-29

TOPIC TAGS: flaw detection, magnetic recording, recording paper, METAL ~~steel~~ tube

ABSTRACT: The construction and use of an electromagnetic "intrascope" is described. Ferromagnetic tubes were inspected for artificially-induced and natural defects, by transferring 2-dimensional magnetic relief patterns of the defects to electrochemical paper. Schematic drawings of the intrascope components and their circuitry are presented. The original signal is emitted by an inductive probe transmitter, having a range of sensitivity of 0.015-0.1 v/oe relative to the external magnetic field. After boosting, the signal is sent through an amplitude modulator, a power amplifier, a rectifier, a signal synthesizer (the topograph) and finally, a recorder. Circumferential scanning of tubes with an outer diameter of 57.6 mm was done by rotating them at 2 rev/sec. In the longitudinal direction, the image scale was usually 1:1. In the transverse direction the image scale m was given by the formula

UDC: 620.179.14

Card 1/2

L 04714-66

ACC NR: AP6023645

$$m = \frac{l_{line}}{\pi(D+2h)},$$

where l_{line} is the line length of the paper (mm), D is the outer tube diameter (mm) and h is the clearance between the surface of the tube and the tip of the transmitter (mm). Other process parameters were: strength coefficient--10^6, recorder power--0.2 to 0.5 watt, recorder current--20 to 50 ma, ohmic resistance of the electrochemical paper--600 to 200 ohms, characteristic frequency--1500 cps. Inspection of tubes made from 20 steel was successful in locating defects as small as 5-10% of the area of the transmitter probe. A list of the artificially-induced defects is given, showing their positions along the axis and perimeter of the tubes. Intragrams illustrated the effect of different magnetic arrangements on the characteristics of the 2-dimensional images and also depicted natural forge and lap defects. The recording speed ranged from 1200-2500 m/sec depending on the quality of the electrochemical paper. The maximum scanning rate was 10 cm/sec for m=1:10 in the longitudinal direction and m=1:4 transversely. Orig. art. has: 5 figures, 1 table, 1 formula.

SUB CODE: 14,09/ SUBM DATE: 13Oct65/ ORIG REF: 005

Cord 2/2 fv

ACC NR: AP6029061 SOURCE CODE: UR/0413/66/000/014/0100/0100

INVENTOR: Vlasenko, V. I.; Oshchepkov, P. K.; Sorokin, V. I.

ORG: None

TITLE: A magnetic internal inspection unit for long parts. Class 42, No. 183999 [announced by the Scientific Research Institute of Internal Inspection (Nauchno-issledovatel'skiy institut introskopii)]

SOURCE: Izobret prom obraz tov zn, no. 14, 1966, 100

TOPIC TAGS: metal inspection, magnetic method, pipe

ABSTRACT: This Author's Certificate introduces: 1. A magnetic internal inspection unit for checking long parts, e. g. pipes, bars, etc. The device produces a two-dimensional image in the form of isolines of the magnetic fields surrounding the part when it is magnetized by any method. The installation contains a group of magnetic field intensity pickups, an open register, electronic switches controlled by the register for alternate connection of the pickups to a common busbar, an integrator which isolates the envelope of the series of amplitude-modulated pulses formed on the busbar, a line-scanning sawtooth voltage generator, a frame-scanning stepped voltage generator, a cathode ray tube with image persistence, and magnetic heads for recording and reading out magnetic marks in each cycle. The device is designed to

UDC: 620.179.143

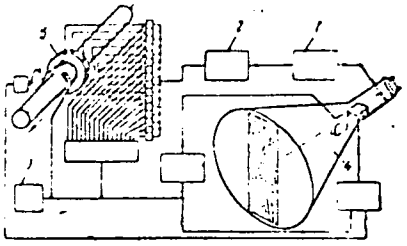
Card 1/3

ACC NR: AP6029061

produce a quantitative visual representation of the magnetic field intensity in isolines by using a multiple-level amplitude discriminator with input connected to the integrator and output connected to the control electrode of the cathode ray tube. This discriminator puts out a train of identical-amplitude pulses separated by time intervals which repeat the real-time moments when the pulse amplitude reaches the envelope of the given potential levels which is determined in the integrator. 2. A modification of this inspection unit in which the image scale is maintained regardless of the rate of motion of the article being checked. Incorporated in the installation is a marking device which contains a stable-frequency pulse generator. The pulses from this generator are recorded in the form of marks on the surface of the moving article. The pulses read out from these marks serve as the control signal for selection of the intervals in stepped frame scanning which move the beam along the frame in the cathode ray tube in inverse proportion to the magnitude of the interval. 3. A modification of this inspection unit which handles articles of any profile by assembling the pickups into a unit which holds them stationary along the perimeter of the article, repeating its profile.

Card 2/3

ACC NR: AP6029061



1--discriminator; 2--integrator; 3--pulse generator; 4--cathode ray tube; 5--pickup unit

SUB CODE: 13,20/ SUBM DATE: 30Jan65

Card 3/3

ACC NR: AP7002717 (A) SOURCE CODE: UR/0381/66/000/006/0035/0042

AUTHOR: Oshchepkov, P. K.; Kloyev, V. V.; Degterev, A. P.; Semenov, O. S.; Lyubynskiy, Ye. A.

ORG: Scientific Research Institute of Introscopy (NII introskopii)

TITLE: VTDN-1 installation for monitoring surface defects in ferromagnetic pipes

SOURCE: Defektoskopiya, no. 6, 1966, 35-42

TOPIC TAGS: pipe, ferromagnetic material, eddy current, nondestructive test/ VTDN-1 flaw detector

ABSTRACT: The authors describe an eddy-current flaw detector with contact-type pickups (type VTDN-1), intended to disclose external cracks, beads, films, deep scratches, hairlines and other defects on the outer surface of hot-rolled ferromagnetic pipes. The secondary-field indicator is a resonant pickup which is placed in contact with the pipe and which consists of a pair of coils. During the test, the pickup rotates around the linearly-moving pipe, thereby scanning the investigated surface along a helical line. The signals from the pickup are detected with a resonant amplifier. The operating principle is based on eddy currents induced in the pipe and an automatic comparison of two adjacent sections of the surface by two pipes. The apparatus consists of nechanical equipment for rotating the pickups, an oscillator block, pickup blocks, an interconnection block, amplifier blocks, an induction block, a blocking and synchronization block, a tuning indicator, and a power supply.

Card 1/2 UDC: 620.179.14

ACC NR: AP7002717

The instrument was tested at the Pervoural'skiy Novotrubnyy plant and was found suitable for nondestructive quality control of the outer surface of hot-rolled tubes. It is indicated that by slight modification it can be used for continuous monitoring of pipes as they are produced. Orig. art. has: 3 figures.

SUB CODE: 14/ SUBM DATE: 07Feb66

Card 2/2

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

OSHCHEPKOV, V.Ye., mashinist elektrovoza

Practical recommendations concerning the VL22M electric locomotive with regenerating braking. Elek i tepl. tiaga 4 no.11:36-37 N '60. (MIRA 13:12)

1. Depo Chusovskaya Sverdlovskoy dorogi.
(Electric locomotives)

OSHCHEPKOV, V.Ye., mashinist

Practical advice to the engineers of VL22^{M} electric locomotives.
Elek.i tepltiaga 7 no.1:37 Ja '63. (MIRA 16:2)

1. Depo Chusovskaya Sverdlovskoy dorogi.
(Locomotive engineers) (Electric locomotives)

OSHCHEPKOV, Yu.P., inzh.

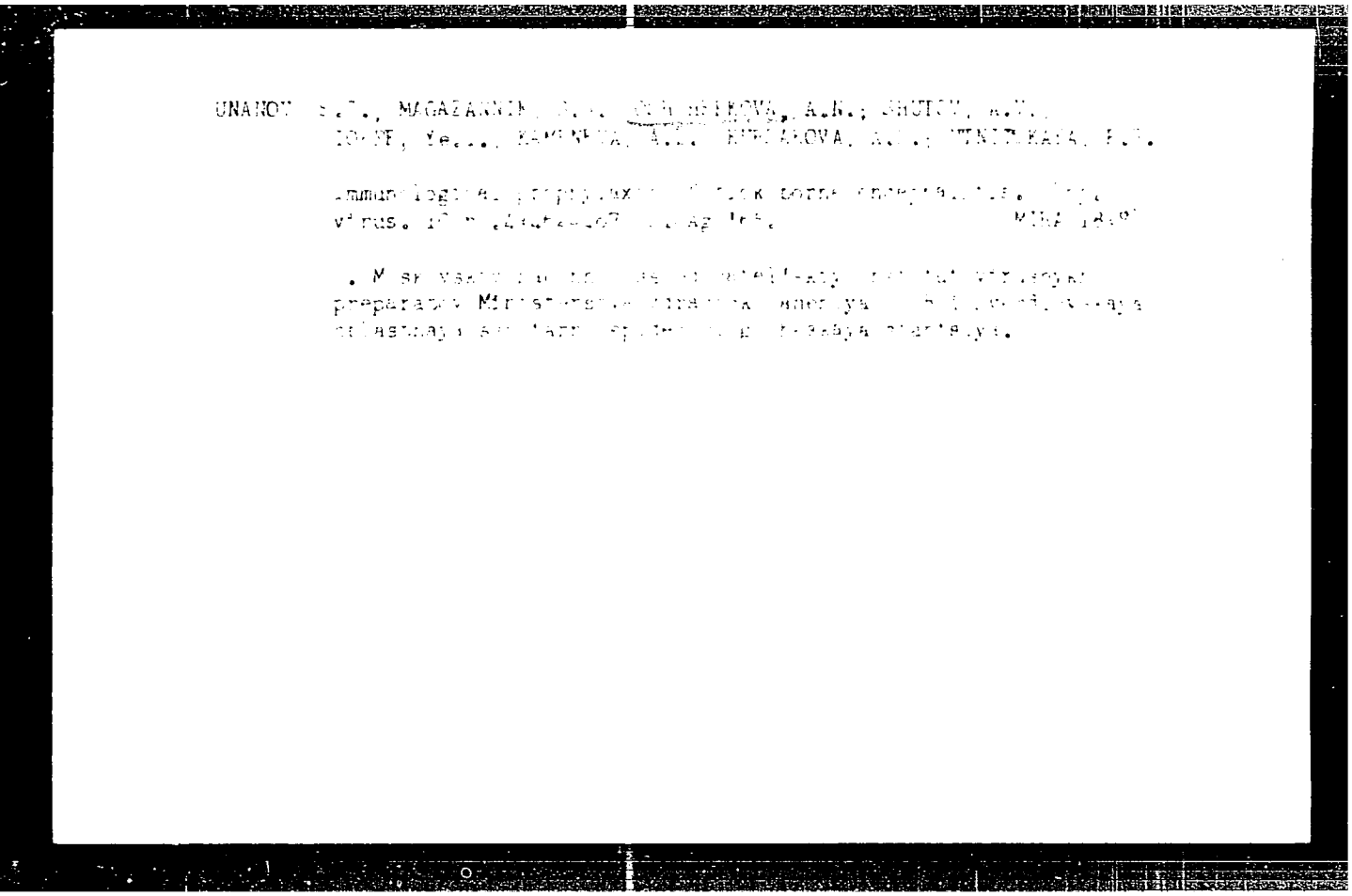
Investigation of contact fatigue strength of low-nickel steel. Izv. vys. ucheb. zav.; mashinostr. no.9:60-71 '63. (MIRA 17:3)

1. Chelyabinskiy nauchno-issledovatel'skiy institut avtomatizatsii i mekhanizatsii mashinostroyeniya.

ANTROPOV, V.P., kand. tekhn. nauk; OSHCHEPKOV, Yu.P., aspirant

Strength of a case-hardened layer subjected to compression. Izv. vys. ucheb. zav.; mashinostr. no.8:67-71 '64.
(MIRA 17:11)

1. Moskovskoye vysshaye tekhnicheskoye uchilishche imeni Baumana.



VISHNEVSKIY, V.L., glav. red.; MILLER, S.V., prof., red.; MAIS, OSHCHEPKOVA, A.N., red.; SAKULIN, I.I., kots., red.; KOSTIK, M.B., red.

[Materials of the Second Scientific and Practical Conference of Sverdlovsk City and Province Sanitary and Epidemical Station] Materialy Vtoroi nauchno-prakticheskoi konferentsii Sverdlovskoi gorodskoi i oblastnoi sanitarno-epidemiologicheskikh stantsii. Sverdlovsk, 1962. 223 p. (MIRA 17:5)

1. Nauchno-prakticheskaya konferentsiya Sverdlovskoy gorodskoy i oblastnoy sanitarno-epidemiologicheskikh stantsii. 2d, Sverdlovsk, 1961. 2. Zaveduyushchiy Sverdlovskim oblastnym otdelom zdravookhraneniya (for Vishnevskiy). 2. Sverdlovskaya gorodskaya sanitarno-epidemiologicheskaya stantsiya (for Kostik).

OSHCHEPKOVA, E.I., starshiy prepodavatel'

Preparation for the mechanization of accounting at a branch [illegible] accounting service center. Trudy Ural. politekh. inst. no.[illegible] 92-97 '61. (MIRA [illegible]

(Sverdlovsk--Machine accounting)

SHEMERYANKIN, B.V.; KOPELIOVICH, L.V.; DOBROVOL'SKIY, I.P.; OSHCHEPKOVA, N.V.

Studying the formation of the porous structure of pitch coke. Koks i khim. no.3:25-28 '63. (MIRA 16:3)

1. Chelyabinskiy metallurgicheskiy zavod (for Shemeryankin, Kopeliovich, Dobrovol'skiy, I.P.). 2. Gosudarstvennyy nauchno-issledovatel'skiy institut elektrodnoy promyshlennosti (for Oshchepkova).
(Coke)

OSHCHEPKOVA, N.V.; KUVAKIN, M.A.; ZELENINA, V.V.

Microscopy of electrode materials. TSvet. met. 36 no.12:51-54 D '63.
(MIRA 17:2)

SUKHORUKOV, I.F.; [illegible]YAROV, V.I.; O[illegible], [illegible]

Determining the thermal [illegible] [illegible]
neftekhim. [illegible]

L 34006-65 EWG(j)/EWT(m)/EPF(c)/EPR/EWA(d)/EWP(e)/EWP(t)/EWP(b) Pz-4/Pe-4 WH/
ACCESSION NR: AP5007676 WW/JD/WB S/0032/65/031/003/0330/0332

AUTHORS: Oshchepkova, N. V.; Sukhorukov, I. F.; Bochagov, Yu. N. 34 33 B

TITLE: Determining the grain size of artificial graphite filler by thermal oxidation 15

SOURCE: Zavodskaya laboratoriya, v. 31, no. 3, 1965, 330-332

TOPIC TAGS: graphite, thermal treatment, grain size, metallographic examination/ MIM 7 microscope

ABSTRACT: When artificial graphite is prepared, the structure and reflectivity of the components (petroleum coke, coal pitch) are too nearly alike to give optical contrast between grains and bond. No etching method has been developed to produce such contrast. The authors

L 34006-65
ACCESSION NR: AP5007676

time. They were then taken from the furnace and examined on the microscope stage. It was found that the oxidation removed the bright luster of the graphite and gave rise to a well-defined relief that permitted grain shape, structure, and size to be determined. Experiments were made over a range of temperature and treatment periods, and it was found that best results were obtained at 800C and 2 min 30 sec for fine-grained graphite, 900C and 2 min 15 sec for medium-grained graphite. After oxidation, the petroleum coke constituent developed a distinctive fibrous structure. It was concluded that the nature of the structure and

1 table.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut elektrodnoy promyshlennosti (State Scientific Research Institute of the Electrode Industry)

SUBMITTED: 00 ENCL: 00 SUB CODE: OP, MT, SS

NO REF SOV: 004 OTHER: 000

Card 2/2

L 2789-66 EWP(e)/EWT(m)/EPF(c)/EWP(i)/T/EWP(t)/EWP(k)/EWP(b)/EWA(c) IJP(c) JD/WW/HW/WH

ACCESSION NR: AP5022245 UR/0363/65/001/007/1005/1009
546.26-162:539

AUTHOR: Shulepov, S. V.; Oshchepkova, N. V.; Sukhorukov, I. F.; Rodionov, S. G.; Pronyushkina, M. V.

TITLE: Defects of the microstructure of synthetic graphite

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1005-1009

TOPIC TAGS: graphite, carbon product

ABSTRACT: The purpose of the work was a microscopic study of fine- and medium-grained hot-extruded graphite and the determination of the microstructural defects and their influence on the basic physicomechanical properties of the material. Electrode material, "green" and heat treated electrode blanks, and graphitic carbon materials produced by domestic electrode plants were investigated. Defects in the form of conglomerates, i.e., round masses with a circular particle orientation, were observed in all the samples. The properties of the uniform material and material containing conglomerates are compared. It is found that the density does not determine the quality of the microstructure and remains

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L 2789-66
ACCESSION NR: AP5022245

practically constant at 1.6-1.7 g/cm^3. The compressive strength of the uniform material is 25-30% higher than that of the material with conglomerates (350 and 475 kg/cm^2, respectively); the oxidizability of the uniform material during 2 hr at 700C is 28.5%, and its pulverization during physical vacuum tests almost 20% less than that of the material with conglomerates. The microstructural defects observed are stable and do not disappear as the extrusion temperature and pressure are raised, and disturb the isotropy of the properties of the material. An interpretation of the mechanism of defect formation is given. Orig. art. has: 3 figures.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut elektrodnoy promyshlennosti (State Scientific Research Institute of the Electrode Industry)

SUBMITTED: 07Jan65 ENCL: 00 SUB CODE: MT

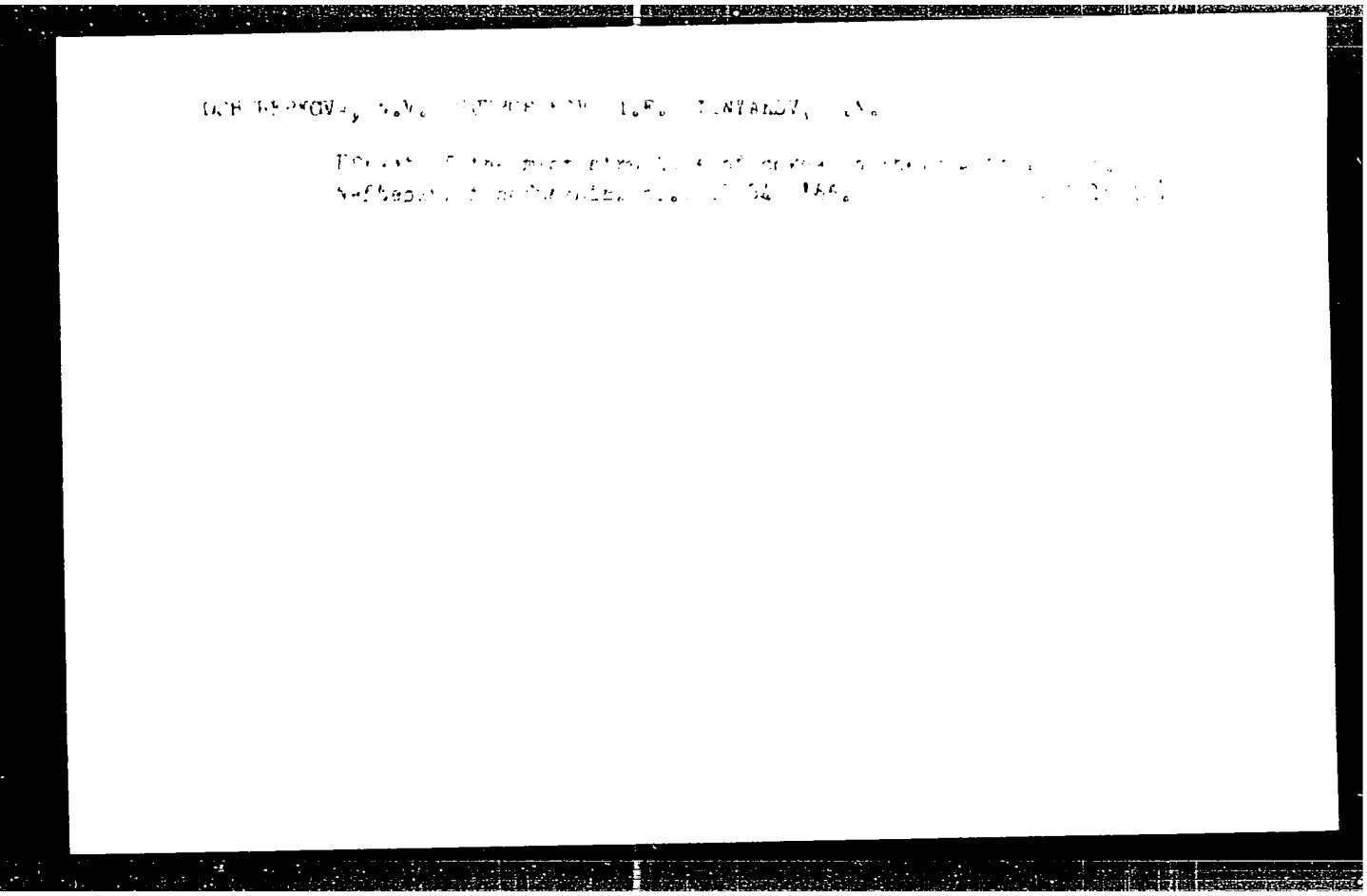
NO REF SOV: 004 OTHER: 000

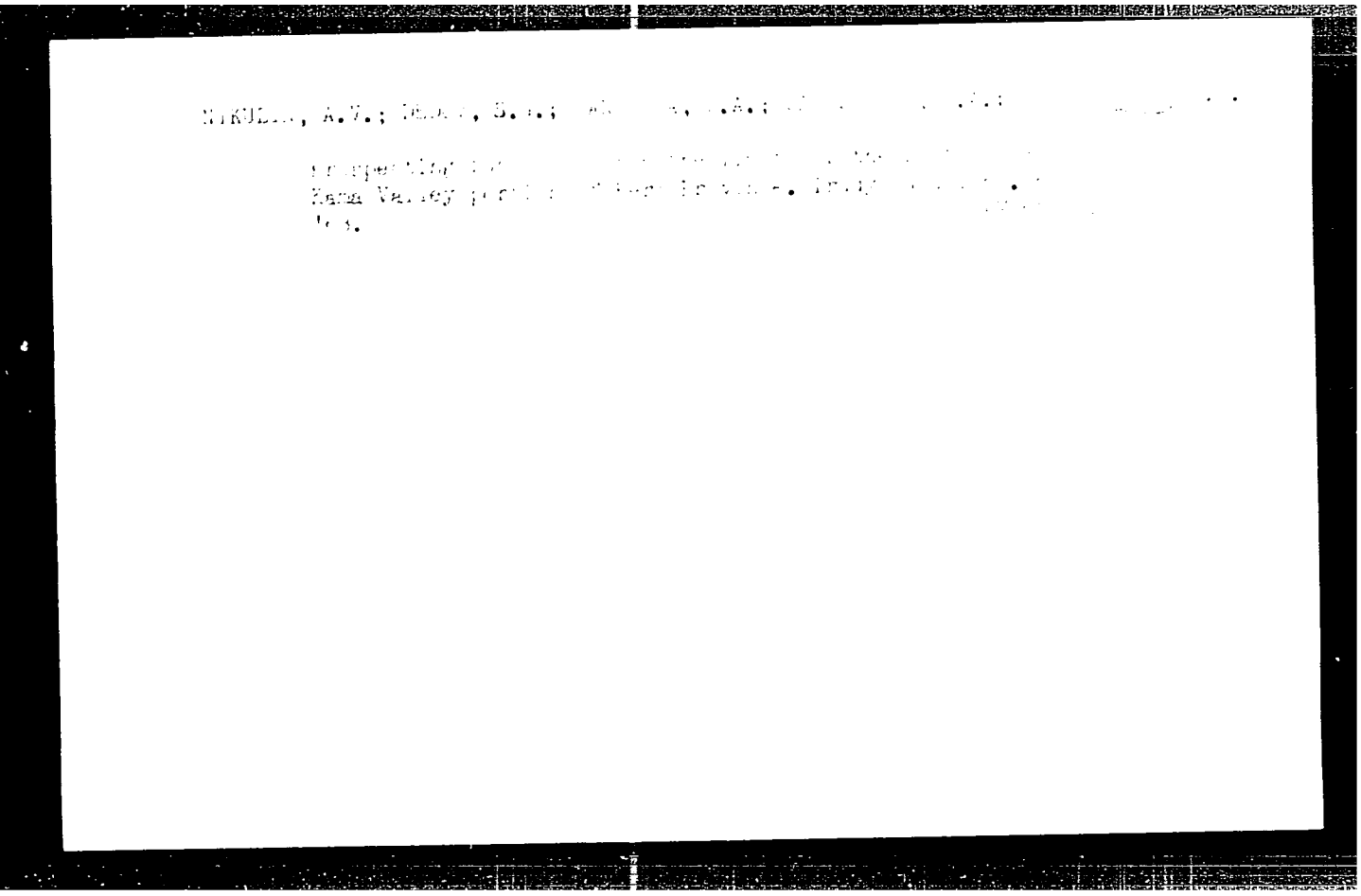
Card 2/2 nd

OSHCHERKOVA, N.V.; SHKHOPINSKIY, I.F.; BUCHNOV, Yu.N.

Use of the thermal oxidation method in determining the grain size of a synthetic graphite filler. Zav.lab. 31 no.3:330-332 '65. (MIRA 18:12)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut elektrodnoy promyshlennosti.





L 17797-65 EWP(e)/EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/EPR/EPA(w)-2/EWP(j)/EWP(b) Pc-4/ Pab-10/Pr-4/Ps-4/Pt-10/Pi-4/Pu-4 RPL/ASM(p)-2/ASD(p)-3/AEDC/BSD JD/WW/JW/HM/WH

ACCESSION NR: AP5001159 S/0294/64/002/006/0946/0949

AUTHOR: Oshcherin, B. N.

TITLE: Relation between the ratio of specific heats and the structure of materials

SOURCE: Teplofizika vysokikh temperatur, v. 2, no. 6, 1964, 946-949

TOPIC TAGS: specific heat equation, thermodynamic calculation

ABSTRACT: An expression for the ratio of specific heats is derived, valid for isotropic solids or liquids or for anisotropic crystals along a particular direction in the monocrystal. A simple calculation gives: $C_p/C_v =$

$$\gamma = 1 + \frac{3\alpha T}{a},$$

where α is the isobaric expansion coefficient and T is the temperature. The atomic packing density $\pi\sqrt{2}/6 = 0.74$; (face-centered cubic), $\pi\sqrt{3}/8 = 0.68$, (body-centered cubic), and $\pi\sqrt{3}:16 = 0.34$. (diamond type). For liquids

$$a = \frac{d4\pi r^2 N}{3M},$$

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L 17797-65
ACCESSION NR: AP5001159

where d is the density, r is the atomic radius, N is Avogadro's number, and M is the atomic weight. This expression is simpler to use in practice, since the usual thermodynamic expression contains the isothermal compressibility which is difficult to determine accurately. Values of γ computed from the derived expression and from the thermodynamic expression are given for a number of solids and liquids. The agreement is excellent. It is pointed out that the derived expression is more accurate than the empirical equation of Nernst-Landemann, particularly for solids of the diamond type (e.g., semiconductors). Orig. art. has: 7 equations and 1 table.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut im. Lensoveta (Leningrad Technological Institute)

SUBMITTED: 25May63 ENCL: 00

SUB CODE: TD NO REF SOV: 013 OTHER: 014

Card 2/2

OSHCHERIN, B.N.

Interrelation of the boiling temperatures of elementary substances and the propagation velocity of longitudinal sound waves. Prim. ul'traakust. k issl. veshch. no.15: 211-217 '61. (MIRA 16:8)

(Boiling points) (Ultrasonic waves--Speed)

OSHCHERIN, B.N.

Theoretical calculation of the propagation velocity of longitudinal sound waves in elementary substances. Prim. ul'traakust. k issl. veshch. no.15:235-248 '61. (MIRA 16:8)

(Ultrasonic waves--Speed)

37566

S/226/62/000/001/002/014
I003/I201

Author. Oshcherin, B. N.

Title. A NEW FORMULA FOR THE CALCULATION OF THE CHARACTERISTIC TEMPERATURE FROM THE MELTING POINT

Periodical: *Poroshkovaya metallurgiya*, no. 1 (7) 1962, 11-16

Text. A simple formula is proposed for the calculation of the characteristic temperature for chemical elements, chemical compounds and intermetallic compounds from their melting points. The universality of the formula is confirmed by its successful application to chemical compounds (salts); there is good agreement between the calculated Θ values and those determined near the absolute zero from calorimetric data and the values of Θ calculated and discussed by S. Mitra and S. Joshi in Phisica, 26, 284, 1960. The equation $T_n^{\frac{1}{2}} = 3.1 \times 10^{-3}(2n^2 + 1)\Theta$ may be applied for the tentative estimation of melting points and characteristic temperatures. For the metals of the transitional group it may be used for the determination of any possible strengthening of the metal acquired as a result of various treatments. There are 5 tables. The most important English-language references read as follows: N. Wolcott, Proc. Phys. Soc., 77, 1, 218, 1961; G. Alers, Rev. mod. Phys., **31**, 3, 676, 1959; D. Martin, Can. J. Phys., 38, 17, 1960.

Association: Leningradskiy Tekhnologicheskiy Institut im. Lensoveta (Leningrad im. Lensoviet Technological Institute).

Submitted: June 22, 1961

Card 1/1

OSHCHERIN, B.N.

New formula for calculating characteristic temperatures by melting points. Porosh.met. 2 no.1:11-16 Ja-F '62. (MIRA 15:3)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Metals--Thermal properties)
(Nonmetallic materials--Thermal properties)

OSHCHERIN, B.N.

New formula for determining certain physical characteristics of matter. Porosh. met. 2 no.6:3-11 N-D '62. (MIRA 15:12)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Matter—Properties) (Metals) (Gases)

OSBCHERIN, B.N.

Theoretical justification of the empirical coefficient in the Grüneisen formula for the determination of characteristic temperatures. Porosh. met. 2 no.6:12-13 N-D '62. (MIRA 15:12)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
(Metals--Thermal properties)

L 17135-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD
ACCESSION NR: AP3000440 S/0170/63/006/005/0023/0028

AUTHOR: Oshcherin, B. N.

TITLE: Calculation of boiling points

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 5, 1963, 23-28

TOPIC TAGS: Boiling point, quantum mechanics, alkali metal, high-boiling substance, boiling point prediction, Debye temperature

ABSTRACT: Present methods of determining the boiling point, particularly of high-boiling substances, are not always satisfactory. Similarly, there is a dearth of semiempirical expressions linking the boiling point with other easily determinable characteristics of matter. A relation between the boiling point, Debye temperature, and principal quantum number has been established for substances with uniform bonds on the basis of quantum mechanical principles (equation 4a of Enclosure). When applied to the alkali metals this equation must be modified by introducing a correction to the principal quantum number (equation 7 of Enclosure). Expressions previously derived by Oshcherin B. N. (Poroshkovaya metallurgiya, 2, No. 6, 1962) have been used to obtain formulas linking the boiling point with easily measured atomic, thermal, and elastic parameters (equations 5, 6,6b). These formulas are useful for

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L 17135-63
ACCESSION NR: AP3000440

estimating the boiling point when direct determination is impractical. Orig. art. has: 12 formulas and 4 tables.

ASSOCIATION: Tekhnologicheskiy institut im Lensoveta, Leningrad (Technological Institute)

SUBMITTED: 08Sept62 DATE ACQ: 10Jun63 ENCL: 01

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

Card 2/2

OSHCHERIN, B.N.

Calculating boiling points of inert gases and molecular crystals. Inzh.-fiz. zhur. 6 no.9:97-99 S '63.
(MIRA 16:8)

1. Tekhnologicheskiy institut imeni Lensoveta, Leningrad.

OSHCHERIN, B. N.
TITLE: Seminar on refractory metals, compounds, and alloys (Kiev, April 1963).
SOURCE: Atomnaya energiya, v. 15, no. 3, 1963, 266-267.

ACCESSION NR: AP3008085

5a metals and carbon; mutual solubility of transition metals.

L. N. Komissarova and others. Investigation of the physical properties of scandium and its compounds.

L. M. Kovba, V. K. Trunov. Investigation of the composition and structure of transition-metal oxide compounds.

A. P. Epik. Laws governing the change of the activation energy in the reaction diffusion of nonmetals in refractory transition metals.

B. N. Oshcherin. New formulas for calculating the activation energy of self-diffusion.

The special equipment used in the investigation of refractory materials such as Nb, Mo, Ta, W, and monocarbides at temperatures above 2000—2500C was described by A. Ye. Sheyndin (metals), A. Novitskiy (hard materials), and D. L. Timrot (alloys and compounds).

Card 7/11

OSHCHERIN, B.N.

Relationship between the activation energy of self-diffusion and the temperature of melting. Zhur. fiz. khim. 39 no.8 1983-1836 Ag '65. (MIRA 18:9)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

L 02238-67 EWT(1) IJP(c) WW

ACC NR: AR6013707 SOURCE CODE: UR/0058/65/000/010/H070/H070

54
B

AUTHOR: Oshcherin, B. N.

TITLE: Some problems in the relation between the speed of propagation of sound waves and the physical properties of matter

SOURCE: Ref. zh. Fizika, Abs. 10Zh471

REF. SOURCE: Sb. Primeneniye ul'traakust. i issled. veshchestva. Vyp. 20. M., 1964, 111-116

TOPIC TAGS: acoustic speed, acoustic propagation, solid physical property, elastic modulus, metal property, temperature dependence

ABSTRACT: It is shown that the density at which the space is filled with atoms or molecules must be taken into account in the Laplace equation that relates the speed of propagation of longitudinal sound waves with the compressibility in the condensed state. A relation is derived between the characteristic temperature and the normal modulus of elasticity. The empirical coefficient in this relation is expressed in terms of universal constants. The expression derived contains the atom packing density, and should therefore be applicable for all metals and semiconductors. [Translation of abstract]

SUB CODE: 20

Card 1/1

GOFMAN, I.L.; OSHCHEROVICH, R.Ye.

Phosphate fertilizer. Patent U.S.S.R. 76, 783 , Dec. 31, 1949.
(CA 47 no.19:10166 '53)

OSHCHIPKOV, Fedor Paramonovich; TSARITSYN, Mikhail Alekseyevich; GUROV, S., red.; KRECHETOV, A., tekhn.red.

[Glass in technology] Steklo v tekhnike. Moskva, Mosk.rabochii, 1960. 109 p. (MIRA 13:12)
(Glass)

VEKLICH, P.M.; OSHCHEPKOV, F.P.; FROLOV, V.K.; NILENDER, R.A., prof., red.; YENYUTIN, V.V., red.; BORUNOV, N.I., tekhn. red.

[Manufacture of glass for electronic vacuum devices] Tekhnologiia elektrovakuumnogo stekla. Pod obshchei red. R.A.Nilendera. Moskva, Gos.energ.izd-vo, 1961. 261 p. (MIRA 15:1)
(Glass manufacture) (Electron tubes)

OSHCHIPKOV, F.P.; KAPLAN, I.M.

Assemblage of glass-metal casings for 53LK4Ts kinescopes.
Sbor. mat. po elektrovak. tekh. no.28:5-8 '61.
(MIRA 16:8)

OSHCHIPKOV, F.P.; FROLOV, V.K.; Prinimali uchastiye: SAVKINA, G.A., inzh.; LYAKHOVETSKAYA, M.A., inzh.; SLIVINSKIY, I.G., inzh.; PARASHINA, Z.V., tekhnik; NIKIFOROVA, Z.V., tekhnik

Pounding of ZS-4 glass in pot furnaces. Stek. i ker. 18 no.7:5-8 Jl '61. (MIRA 14:7)

(Glass manufacture)

Country : USSR

CATEGORY : CULTIVATED PLANTS. Fruits, Berries. Nuts. Tea

ABS. JOUR. : Khim., No. : 1959, No. 1837

AUTHOR : Yakovleva, A.S.

INST. : --

TITLE : Propagation of Black Currant [illegible]

ORIG. PUB. : S. Kh. Sibiri, 1957, [illegible]

ABSTRACT : When black currants are propagated [illegible] woody grafts in western Siberia they proved poorly viable. A study was made at Omsk Agricultural Institute in 1952-1955 of the rooting ability of green grafts in relation to grafting time, substratum and the arrangement of the bud position on the shoot. The planting material consisted of a mixture of forms of the Prodtil [illegible] seedlings and partially of Champion Primor [illegible]

CARD: 1/2

[illegible], A.I., Cand Chem Sci--(diss) "[illegible]tion [illegible] electrol[illegible] [illegible]gen into iron and its effect on the [illegible]rtension of hydrogen." [illegible], 195[illegible]. 11 pp (Inst of Physical Chemistry Acad Sci USSR), [illegible] bibliography [illegible] text. ([illegible], [illegible], 1[illegible])

Zhurnal Fizicheskoy Khimii
1958, Vol 32, Nr 7

THE EFFECT OF SURFACE ACTIVE SUBSTANCES ON THE RATE OF DIFFUSION OF ELECTROLYTIC HYDROGEN THROUGH IRON

Distr: 4E4j/4E2a

A. I. Oshe (Moscow)

Summary

A study has been made of the effect of halide anions and of a number of organic addition agents of high molecular weight in combination with the former both on the hydrogen overvoltage η and on the rate of diffusion V of electrolytic hydrogen through iron membranes during cathodic polarization in $1N$ H_2SO_4.

The addition of halide anions has been shown to lead to a passage of V through a maximum with time, whereas η increases. The effect grows in regular order in accordance with the series Cl^-, Br^-, J^- as well as with increasing halide and acid concentrations. Despite their belonging to different chemical species and their possessing opposite charges the organic additions intensify the halogen anion effect. A suggestion has been made as to the possible mechanism of this effect.

AUTHORS: Oshe, A. I., Bagotskaya, I. A. SOV/ 76-32-6-29/46

TITLE: The Effect of Diffusing Atomic Hydrogen on the Hydrogen Excess Voltage η on Iron and Its Galvanic Coatings in Basic and Acid Solutions (Vliyaniye diffundiruyushchego atomarnogo vodoroda na perenapryazheniye vodoroda η na zheleze i nanesennykh na nego gal'vanicheskikh osadkakh v rastvore shchelochi i kisloty)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 6, pp 1379-1388 (USSR)

ABSTRACT: Investigations on the effect of an artificial increase of the concentration of atomic hydrogen at the electrode surface on the kinetics of its electrochemical separation may supply information on the mechanism of this reaction, which fact had already been observed by A. N. Frumkin (Ref 1). In the present paper the problem mentioned in the title was investigated in the case of galvanic copper and nickel depositions on iron and in 1n NaOH solutions, as well as on pure iron and on iron blanched with tin and mercury; it was also investigated in the case of galvanic depositions of tin, nickel and copper in 1n H_2SO_4 solutions, the method applied remaining the same as in an earlier paper. As may be seen

Card 1/3

The Effect of Diffusing Atomic Hydrogen on the Hydrogen Excess Voltage η on Iron and Its Galvanic Coatings in Basic and Acid Solutions

SOV/76-32-6-29/46

from an experimental part the authors used Armco iron; the graphically represented experiments in the NaOH solution show that η increases in the case of the nickel deposition with small cathode polarization under the action of diffusing hydrogen, and that it decreases with a higher one; in the case of galvanic copper depositions, however, η always increases. In the case of a treatment of the galvanic depositions with mercury these effects change, however. The investigations in sulfuric acid solutions in the case of pure iron, iron blanched with lead and the galvanic depositions tin and copper did not display any influence of the diffusing hydrogen on η, while in the case of iron blanched in mercury a smaller effect was observed; this may be explained by a higher velocity of reformation of the atomic hydrogen (as compared to the alkaline medium). In the explanations of the observed effects the works by Gerischer and Mehl (Refs 8,9) are mentioned and it is pointed out that the dependence on the electrode polarization could not be taken into account. In order to obtain a comparison of the theoretical derivations with the experiment the influence of the amperage of the diffusing hydrogen i' on η

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The Effect of Diffusing Atomic Hydrogen on the Hydrogen Excess Voltage on Iron and Its Galvanic Coatings in Basic and Acid Solutions

AT 76-32-6-29/46

in the case of an electrode polarization with constant amperage was carried out, and it was found that in the beginning there is an increase which later on converges to a certain value, or that the decrease of the excess-voltage grows in the beginning and then approaches a limit value in the case of a polarization increase with constant i'/i. The observed effects of the decrease of the excess voltage were greater than those calculated theoretically. Finally the authors thank A.N. Frumkin, Member, Academy of Sciences, USSR. There are 3 figures and 9 references, 4 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii, Moskva (Moscow, Institute of Physical Chemistry, AS USSR)

SUBMITTED: February 22, 1957

1. Hydrogen--Diffusion 2. Hydrogen--Electrochemistry 3. Metal coatings--Electrochemistry 4. Sodium hydroxide--Electrochemistry 5. Mercury--Electrochemistry

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SOV [illegible]

AUTHOR. Oshe, A. I.

TITLE: The Effect of Surface-Active Substances on the Rate of Diffusion of Electrolytic Hydrogen Through Iron (Vliyaniye poverkhnostnoaktivnykh veshchestv na skorost' diffuzii elektroliticheskogo vodoroda cherez zhelezo)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 7, pp 1622 - 1631 (USSR)

ABSTRACT: No uniform opinion is found in publications on the mechanism of the above mentioned effect; the assumption that the diffusion rate can only be increased by substances which increase the hydrogen overvoltage is disproved by the data obtained by Z.A.Iofa and E.I.Lyakhovetskaya (Ref 3), and I.A.Baotskaya and A.N.Frumkin (Ref 4). A study has been made of the effect of halide anions and of a number of organic addition agents of high molecular weight in combination with the former both on the hydrogen overvoltage η and on the rate of diffusion v of electrolytic hydrogen through iron membranes during cathodic polarization in 1 N H_2SO_4. Halogen anions as well as the not charged compound camphor $C_6H_{10}O$, the anion β-naphthalene sulfonic

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acid $C_{10}H_7O_3S^-$ and the cation tetrabutyl ammonium $/(C_4H_9)_4N/^+$ are used. The method employed was similar to that mentioned in reference 4 with a gas cell (for the production of which acknowledgement is given to the glass blower P V Shchelkov) being used; the technique of work is described. From the experimental results obtained it may be seen that the rate of diffusion in the course of time passes a maximum whereas C_H increases. The effect grows in regular order in accordance with the series. Cl^- Br^-, J^-. Some rules governing this process were found. In agreement with the data obtained by V V Losev it was found that on the addition of J_2 to KJ solutions at the same time with an increase of the rate of diffusion an abrupt decrease (instead of an increase) of the overvoltage takes place. On the addition of organic substances (in the presence of halogen ions) no or almost no effect was observed. In the evaluation of the results obtained the observations made by Z.A.Iofa and L.A.Medvedeva (Ref 8), Ya.M.Kolotyrkin (Ref 9), Z A Iofa (Ref 10) and N.A.Balashova (Ref 11) are explained and it is

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assumed that the above mentioned maximum is caused by the effect of the halogen ions, which on the one hand can effect an increase of the overvoltage by adsorption, and on the other hand by a change of the iron crystal lattice decrease the rate of diffusion. The increase of the effect of organic substances in the presence of halogen ions, observed already earlier by Z.A.Iofa et al .(Ref 13), V.V.Losev (Ref 14) and A.T.Petrenko (Ref 15) is explained by the rendering hydrophobic of the surface by the halogen ions as well as by a change of the charge. Finally the author thanks A.N.Frumkin, Member Academiy of Sciences, USSR, I.A.Bagotskaya and Professor Z.A Iofa. There are 9 figures and 15 references, 14 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii (Institute of Physical Chemistry, AS USSR)

SUBMITTED: March 17, 1957

The Effect of Surface-Active Substances on the Rate of SOV/76-32-7-21 ...
Diffusion of Electrolytic Hydrogen Through Iron

1. Hydrogen---Diffusion 2. Diffusion--Velocity 3. Iron--Analysis 4. Wetting agents---Chemical effects 5. Diffusion--Test results

Card 4/4

'OSHE A.I.

5(4) PHASE I BOOK EXPLOITATION SOV/2216

Soveshchaniye po elektrokhimii. 4th, Moscow, 1956.

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

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk.

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

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

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

Bagotskaya, I.A., and A.I. Oshe (Institute of Electrochemistry, Academy of Sciences, USSR). Effect of Atomic Hydrogen Diffusion on the Potential of Polarized Iron Electrodeposits on It 82

Vishomirskis, R.M., and Yu. Yu. Matulis (Institut khimii i khimicheskoy tekhnologii AN Lit. SSR-Institute of Chemistry and Chemical Technology, Academy of Sciences, Lithuanian SSR). Role of Inorganic Ions in The Process of Electrolytically Separating Hydrogen Free Acid Solutions at a Rotating Cathode 86

Iofa, Z.A., and E.A. Maznichenko (Moskovskiy gosudarstvennyy universitet—Moscow State University). Influence of the Nature of Cations on Overvoltage During the Separation of Hydrogen From Alkaline Solutions at a Mercury Cathode 91

Kuchinskiy, Ye. M., and I. Ye. Veselovskaya. Dependence of Hydrogen Overvoltage on the Surface Condition of an Iron Cathode in an Alkaline Solution 96

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Durdin, Ya. V., L. Kish, and V.I. Kravtsov, (Leningradskiy gosudarstvennyy universitet imeni A.A. Zhdanova - Leningrad State University imeni A.A. Zhdanov). Use of the Oscillographic Method in Investigating the Kinetics of Electrode Processes Which Take Place at the Surface of Dissolving Metals 102

Losev, V.V., and A.M. Khopin, (Institute of Electrochemistry, Academy of Sciences, USSR). Using Radioactive Indicators to Study Processes of Ionization and Discharge of Metals Ions at Amalgam Electrodes 116

Podvyazkin, Yu. A., and A.I. Shlygin (Moscow State University) Charging Curves of Powdery Catalysts and Adsorbents 1[illegible]

Discussion [illegible] Knash, [illegible] Krishtalik, A.L. Rotinyan, N.P. Zhuk, I.P. Anokhin, V.V. Krasnoyarskiy, M.A. Gerovich (Deceased), A.G. Stromberg and contributing authors) 1[illegible]

Card 6/34

S/076/60/034/007/020/042/XX
B004/B068

AUTHORS: Bagotskaya, I. A., Kovba, L. D., and Osne, A. I.

TITLE: Study of the Effect of Diffusing Atomic Hydrogen on the Kinetics of Its Electrochemical Evolution

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 7, pp. 1508-1516

TEXT: The effect of hydrogen diffusion on the kinetics of its electrochemical evolution was studied in Refs. 1-4 using an iron membrane fixed between two vessels and sealed with vacuum grease. Since a disturbing effect of the vacuum grease on the overvoltage η was suspected, the authors repeated their experiments with a new device shown in Fig. 1. A dish made of Armco iron (2 cm in diameter; about 1 cm high; wall thickness: 0.1 to 0.07 mm) was connected to a platinum contact by means of an iron clamp. The outside surface of the dish was polarized, and the inside surface was exposed to diffusion. Cell 1 contained hydrogen gas. The dish was filled from containers 2 and 3 with 1 N NaOH saturated with H_2 to a height of 2 to 3 mm. The inside surface of the dish was cathodically polarized with

the platinum anode 4, and the diffusion potential φ_d was measured with respect to the reference anode 5. As soon as φ_d had reached a constant value, 2 N H_2SO_4 saturated with H_2 and containing traces of $Pb(NO_3)_2$ was pumped from container 8 into cell 1 such that it touched the bottom of the dish. The dish was temporarily polarized anodically. Hydrogen diffusion was discontinued by using hydrogen-saturated NaOH from container 11 instead of the acid solution. These experiments were performed with pure Armco iron, mercury-poisoned iron, and zinc-plated iron. The results were in agreement with the ones obtained previously. Overvoltage η was increased on non-poisoned iron and lowered on Hg-poisoned iron by hydrogen diffusion. The increase in Δi of the rate of electrochemical hydrogen evolution in the presence of diffusing atomic hydrogen was determined on Hg-poisoned iron and zinc-plated iron with η = const. For a given rate of diffusion i', the amperage i was measured. For $\Delta i/i'$, the following values were found:

Study of the Effect of Diffusing Atomic Hydrogen on the Kinetics of Its Electrochemical Evolution

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Electrode	Electrolyte	η	$(\Delta i/i')$
Fe + Hg	3 N NaOH	0.600	1.72
Fe + Hg	0.5 N NaOH	0.790-0.875	1.37
Fe + Zn	4 N NaOH	0.610	0.24
Fe + Zn	0.5 N NaOH	0.690	0.1

Moreover, the effect of i', of the cathodic polarization of the electrode, and of the pH of the solution on $\Delta\eta$ was examined on Armco iron and nickel-plated iron. With constant cathodic polarization of the electrode $\Delta\eta$ increased with i' and approached a limit. Increase of η and decrease of pH led to a decrease of $\Delta\eta$. A. N. Frumkin is thanked for a discussion. There are 7 figures, 1 table, and 6 Soviet references.

ASSOCIATION: Akademiya nauk SSSR, Institut elektrokhimii
(Academy of Sciences USSR, Institute of Electrochemistry)

SUBMITTED: September 25, 1958

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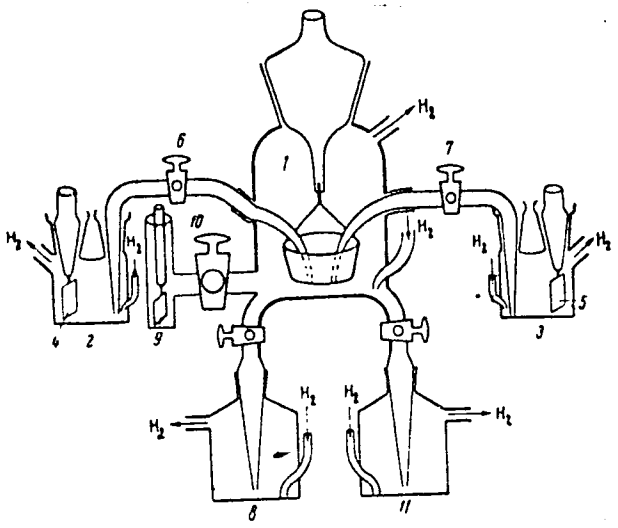
S/076/60/034/007/020/042/XX
B004/B068



Card 4/4

OSHE, A.I.; ASTAKHOV, I.I.; NIKITINA, Z.Ya.; REZNIK, I.F.; BAGOTSKIY, V.S.

Change of the structure of a negative electrode in a silver-zinc storage cell in operation. Zhur.prikl.khim. 34 no.10:2254-2260 O '61. (MIRA 14:11)

1. Institut elektrokhimii AN SSSR i Vsesoyuznyy nauchno-issledovatel'skiy institut istochnikov toka.
(Electrodes)

OSHE, A.I.; BAGOTSKIY, V.S.

Mechanism of the cathodic reduction of zinc oxide phase layers on a zinc electrode. Zhur. fiz. khim. 35 no.7:1641-1642 Jl '61. (MIRA 14:7)

1. Institut elektrokhimii AN SSSR.
(Zinc oxide) (Reduction, Electrolytic)

TIKHOMIROVA, N. I.; OSHE, A. I.; BAGOTSKIY, V. S.; LUK'YANYCHEVA, V. I.

State of oxygen adsorbed on platinum. Dokl. AN SSSR 159 no.3: 644-647 N '64 (MIRA 18:1)

1. Institut elektrokhimii AN SSSR. Predstavleno akademikom A.N. Frumkinym.

OSHE, A.I.; TIKHOMIROVA, V.I.; BAGOTSKIY, V.S.

Oxygen ionization on an oxidized platinum cathode in acid solutions. Elektrokhimiia 1 no.6:688-691 Je '65. (MIRA 18:7)

1. Institut elektrokhimii AN SSSR.

AUTHOR ROZENFELD, I.L., OSHE, Ye.K.

TITLE On the Modification of the Electrochemical Activity of Zirconium Under the Effect of Radiation.
(Ob izmenenii elektrokhimicheskoy aktivnosti tsirkoniya pod deystviyem izluchenly - Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 114, Nr 1, pp 143-145 (U.S.S.R.)

ABSTRACT When irradiating the elements Zr -- Al and Zr -- Fe in a moving electrolyte (3% NaCl) by an electron flux of high energy a considerable increase of the current i was found. Experiments, on the occasion of which only the anode and the cathode were irradiated, showed that the effect found occurred only in connection with an irradiation of the cathode (Zr). When the anode was irradiated (Al or Fe) no effect was observed (tables 1 and 2). Electrodes, which worked in the capacity of anodes, were subjected to much greater destruction in the course of these experiments than was the case with experiments carried out at equal conditions but without radiation. The effect observed can therefore not be described as the result of the effect exercised by any factors which hitherto manifested themselves in the capacity of principal stimulators of the velocity of electrode processes under the effect of irradiation. Among other things it must be pointed out that the problem concerning the influence exercised by short-lived products of radiolysis remains unsolved for the time being.
(3 drawings)

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On the Modification of the Electrochemical Activity of Zirconium Under the Effect of Radiation. 20-1-39/64

ASSOCIATION Not Given.
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Card 2/2

OSHE, Ye. K.

in collection of articles-
Effect of Ionizing Radiation (Sent.) on Inorganic and Organic Systems, [illegible], Izd-vo AN SSSR, 1958, 419 pp. (Most works a continuation of [illegible] relat to radiat[illegible]

Rozenfeld, I.L., Oshe, Ye.K. Mechanism of Activation of Electrodes of Local Cells During Irradiation 103

This paper discusses the effect of radiation on the properties of semiconducting oxide films of the electrodes. It was determined that only irradiation of the cathode intensifies the corrosion of metals in electrolytes. This is due to the sharp increase in the cathode efficiency resulting from "radiation conductivity" in the protective film which is regarded as a semiconductor. The radiation dependence of the corrosion current is expressed by:

$$I_k = I_k^0 + A\sqrt{I},$$

where A is the constant for the given pair of electrodes. Candidate of physical and mathematical sciences V.B. Sandomirskiy participated in this work. There are 10 figures and 6 references of which 1 is Soviet, 3 English, 1 French and 1 Czech.

Card 10/31

SOV/81-59-19-67382

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 19, p 69 (USSR)

AUTHORS: Rozenfel'd, I.L., Oshe, Ye.K.

TITLE: On the Mechanism of Activation of Electrodes of Local Elements at Irradiation

PERIODICAL: V. sb.: Deystviye ioniziruyushchikh izlucheniy na neorgan. i organ. sistemy. Moscow, AS USSR, 1958, pp 103 - 113

ABSTRACT: The effect of electron radiation on the corrosion rate of the couples Zr-Al, Zr-Fe and Fe-Al in a 3% NaCl solution has been investigated. The dependence of the intensity of corrosion current on the duration of irradiation and the intensity of radiation has been determined. At irradiation of the cathode the corrosion rate rises sharply; irradiation of the anode has no effect on the corrosion current. The authors assume that under the effect of irradiation the electroconductivity of the oxide film, which has semiconductor properties, on the cathode increases so that an acceleration of the cathode reaction and of the corrosion process of the couple on the whole is caused.

Card 1/1

Yu. Pleskov

AUTHORS: Rozenfel'd, I.L., Oshe, Ye.K. 32-3-33/52

TITLE: A Device for the Investigation of the Corrosion- and Electrochemical Behavior of Metals Under the Action of Ionizing Radiation (Pribor dlya issledovaniya korrozionnogo i elektrokhimicheskogo povedeniya metallov pri vozdeystvii ioniziruyushchego izlucheniya)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 3, pp. 346-348 (USSR)

ABSTRACT: A simple method of determining is recommended which, among other things, also makes it possible to determine the influence exercised by ionizing radiation on anode- and cathode processes. This device consists essentially of a cell through which the electrolyte circulates and in which the samples to be investigated are fixed, one of them being connected as an anode, the other as a cathode. During the test a milliammeter measures the amperage from which it is possible to draw conclusions as to the course taken by corrosion. In the case of electron radiations the front sample is earthed by way of another milliammeter. In the case described

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A Device for the Investigation of the Corrosion- and Electrochemical Behavior of Metals Under the Action of Ionizing Radiation

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here a 3% common salt solution is used. The results of the investigation showed that irradiation of the sample as a cathode caused corrosion to increase sharply, whereas this was not the case when the sample took the place of an anode. Data concerning measurements carried out with zirconium iron in a 3% NaCl-solution are given. The phenomena observed were mentioned already in previous papers. There are 2 figures and 3 references, 3 of which are Slavic.

ASSOCIATION: Institute of Physical Chemistry AS USSR (Institut fizicheskoy khimii Akademii nauk SSSR)

AVAILABLE: Library of Congress

1. Anode corrosion-Ionizing radiation effects. 2. Milliammeter-Applications 3. Cathode corrosion-Ionizing radiation effects

Card 2/2

AUTHORS: Rozenfel'd, I. L., Oshe, Ye. K. SOV/[illegible]

TITLE: The Effect of Ionizing Radiation on the Electrochemical Activity of Metals Coated With Semiconducting Oxide Films (Vliyaniye ioniziruyushchego izlucheniya na elektrokhimicheskuyu aktivnost' metallov, pokrytykh okisnymi plenkami poluprovodnikovogo kharaktera)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 1, pp 139-142 (USSR)

ABSTRACT: The present paper deals with the influence exercised by electronic irradiation ($E = 0.8$ MeV, $I = 10\ \mu a/cm^2$) upon the electrochemical reaction of some metals within a range of the densities of the ionizing current. By electronic bombardment the authors tried to find a difference in the electrochemical activity of metals which on the surface exhibit semiconducting oxide films with different mechanisms of conductivity (due to electrons and holes). In this connection the activity of the metals refers to reactions on the cathode and anode. The experiments were made with zirconium and titanium with electronic mechanism of conductivity (films of the n-type) as well as with nickel and

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