"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHRANOV, B.V.; OBUKHOV, V.M.

Automatic control of artesian wells. Prom.energ. 15 no.12:21-23 D '60. (MIRA 13:12)
(Pumping machinery, Electric) (Automatic control)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHBANOV, G.I.

Seismic logging of shot holes by means of a blow. Razved. i prom. geofiz. no.27:14-18 '59. (MIRA 12:7)
(Logging (Geology)) (Seismometry)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHBANOV, G.I.

Using the improved SS24-61M seismic station. Biul.tekh.-ekon inform.Gos.nauch.-issl.inst.nauch.i tekh.inform. no.8:7-9 Ag '65. (MIRA 18:12)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHBANOV, I.

Precast monolithic reinforced concrete shells. Na stroi.Ros no.2:11-12 F '61. (MIRA 14:6)

1. Upravlyayushchiy trestom Krasnoyarskshakhtostroy.
(Roofs, Shell)
(Krasnoyarsk—Precast concrete construction)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHUANOV, N., starshina vtoroy stat'i; MALYSHEV, A., starshiy matros.

Remote control of apparatus ST-35. Voen. aviat. 16 no.2:43 F '58.
(Remote control) (MIRA 11:3)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

YASINSKIY, A.G.; ZHBANOV, N.A.; GRIBKOV, A.M.; GRIBIN, G.P., otv.red.; PEVZNER, A.S., nav.red.izd-va; BOROVNEV, N.K., tekhn.red.

[Uniform time and pay standards for construction, assembly, and repair operations in 1960] Edinye normy i rastsenki na stroitel'nye, montazhnye i remontno-stroitel'nye raboty, 1960 g. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam. Sbornik 25. [Assembling equipment for petroleum refinaries] Montazh oborudovaniia neftepererabatyvaiushchikh zavodov. 1960. 37 p. (MIRA 13:6)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva. 2. TSentral'noye normativno-issledovatel'skoye byuro Ministerstva stroitel'stva RSFSR (for Zhbanov, Gribkov). (Wages) (Petroleum refinaries--Equipment and supplies)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHBANOV, P.

Let's improve the sharing of foreign trade experience. Vnesh. torg. 41 no.5:52-54 '61. (MIRA 14:4)

1. Upolnomochennyy Ministerstva vneshney torgovli SSSR pri Sovete Ministrov Uzbekskoy SSR.
(Uzbekistan--Commerce)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHBANOV, S.A.

Improve the signal-lamp posts. Put' i put. khoz. 8 no.10:40 '64.
(MIRA 17:12)

1. Inzh. otdela puti, zdaniy i sooruzheniy, stantsiya Dushanbe, Sredneaziatskoy dorogi.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHBANOV, S.A., inzh. (Stalinabad)

Track machinery stations and warning signals. Put' i put. khoz. no. 7:27 Jl '58. (MIRA 11:7)

(Railroads--Signaling)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

43325

S/040/62/026/006/014/015
D234/D308

13.2521

AUTHOR: Zhbanov, Yu.K. (Moscow)

TITLE: Theory of gyroscopic level compass

PERIODICAL: Prikladnaya matematika i mekhanika, v. 26, no. 6, 1962, 1130 - 1135

TEXT: The author deduces general equations of motion, neglecting the vertical component of the centrifugal force of the earth, reducing any disturbance to a certain moment and to the distortion of the angular velocity about the kinetic moment. Second order terms are neglected. A compass is considered in which the axes of rotation of the casings are not parallel, kinetic moments are not perpendicular to them and the centers of gravity are displaced from the axes. The period of pulsations of azimuthal oscillations is found to be $T = 24/|\sin\varphi + 144\,\delta/\cos\varphi|$, δ being the generalized unbalance angle. If the absolute velocity changes by Δv, the corresponding azimuthal deviation in the pulsation antinode is

$$\Delta\alpha_m = \frac{17}{\cos\varphi}\,\delta\,\frac{\Delta v}{v_1} \qquad (6.7)$$

Card 1/2

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHBANOV, Yu.K. (Moskva)

On the theory of a gyrohorizon compass. Prikl. mat. i mekh. 26 no.6:1130-1135 N-D '62. (MIRA 16:1)

(Gyrocompass)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHBANOV, Yu.K. (Moskva)

Studying free oscillations in a system of autonomous determination of the coordinates of a moving object. Prikl. mat. i mekh. 24 no.6:1024-1029 N-D '60. (MIRA 13:12)

(Giroscope)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

13.2500
16.6500

88753
S/040/60/024/006/007/024
C 111/ C 333

AUTHOR: Zhbanov, Yu. K. (Moscow)

TITLE: Investigation of the Free Oscillations in the System of Autonomous Determination of the Coordinates of a Movable Object

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol. 24, No. 6, pp. 1024-1029

TEXT: For determining the earth coordinates of an object A. Yu. Ishlinskiy (Ref.1) proposed a method which is based on the use of two gyroscopic instruments which give the angular velocities ω_y and ω_z of the gyroscopic deviations, and of a computing machine which has to solve the system of equations

$$(1.1)\quad \frac{d\varphi}{dt} = \omega_y(t)\sin\vartheta\,,\quad \frac{d\vartheta}{dt} = \omega_z(t) - \omega_y(t)\cos\vartheta\,\mathrm{tg}\,\varphi\,,$$

$$\frac{d\lambda}{dt} = \omega_y(t)\frac{\cos\vartheta}{\cos\varphi}\,.$$

φ and λ are here the latitude and longitude, ϑ the angle of

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

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S/040/60/024/006/007/024
C 111/ C 333

Investigation of the Free Oscillations in the System of Autonomous Determination of the Coordinates of a Movable Object

gradient of the path of the object to the line of latitude degree. If the initial conditions $\varphi_0, \lambda_0, \vartheta_0$ are given, then (1) determines a unique trajectory.

The author investigates the influence of the natural oscillations of the applied gyrocompass as well as the influence of errors in the initial conditions on the results of the determination of the coordinates. At first he shows that under absence of natural oscillations the erroneous initial conditions $\varphi_0, \lambda_0, \vartheta_0$ yield a trajectory congruent to the real one, where the error in the determined coordinates is not greater than a certain angle δ which only depends on the errors in the initial conditions; an accumulation of the error values does not take place. Then the author considers the general case, where the problem of the free oscillations of the system is reduced to the oscillations of the vertical of the gyrocompass. Under an arbitrarily movable base of the system there arises in the determination of the local coordinates only one accumulating error; this is the error which the compass shows in

Card 2/3

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

88753

S/040/60/024/006/007/024
C 111/ C 333

Investigation of the Free Oscillations in the System of Autonomous Determination of the Coordinates of a Movable Object

the determination of the local vertical. Finally the author gives a mechanic analogy with a spring in order to illustrate the behavior of the compass vertical under changes of position of the base.

There are 6 figures and 5 Soviet references.

SUBMITTED: May 30, 1960

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDANOV, Yu.K. (Moskva)

Gyrocompass on a maneuvering base. Prikl. mat. i mekh. 25 no.5:933-937 S-O '61. (MIRA 14:10)

(Gyrocompass)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

L 07941-67 EWT(d)/FSS-2/EWT(1)/EEC(k)-2/EWP(c) IJP(c)

ACC NR: AP6030814 (N) SOURCE CODE: UR/0424/66/000/003/0178/0179

43
B

AUTHOR: Zhbanov, Yu. K. (Moscow)

ORG: none

TITLE: Gyrocompass in wobble

SOURCE: Inzhenernyy zhurnal. Mekhanika tverdogo tela, no. 3, 1966, 178-179

TOPIC TAGS: gyrocompass, gyroscope, gyroscope motion equation

ABSTRACT: The free play motion in a two-rotor gyrocompass is investigated. Equations are obtained to determine the drift of the gyrocompass in wobbling motion caused by both inertial effects and elastic compliance. Change in the equilibrium position for the compass along its azimuthal angle is given by

$$\Delta\alpha = \frac{M_{z\Delta}^* + M_{z\mu}^*}{2U\cos\varepsilon\cos\varphi}$$

where M_{z_Δ} * is the sinusoidal wobble moment of the gyrocompass and M_{z_μ} * is

Card 1/2

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

L 07941-67

ACC NR: AP6030814

given by $M_{z\mu}^{*} = \frac{1}{8}\frac{(IP)^2}{\mu}\left(\frac{w^*}{g}\right)^2 G, \quad G = \sin 2\psi\left[\frac{1+0.5\,\varepsilon\,(1+2\varkappa)}{\cos^2\varepsilon} - \frac{1+\varepsilon\varkappa}{\sin^2\varepsilon}\right].$

A plot of $\Delta\alpha$ versus ε shows good agreement with experiments carried out with a "Kurs" type compass. Orig. art. has: 9 equations and 3 figures.

SUB CODE: 20/ SUBM DATE: 16Nov65/ ORIG REF: 002

Card 2/2 egh

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

SUKHOMLINOV, O.K. [Sukhomlynov, O.K.]; ZHBANOVA, N.M.

Qualitative analysis of ursal. Farmatsev. zhur. 15 no.1:42 '60. (MIRA 14:5)

1. Khar'kovskiy farmatsevticheskiy institut. (RAMSON)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

GOFMAN-KADOSHNIKOV, P.B.; ZHBANKIY, R.V.

Role of the functional condition of the central nervous system in the melanophore reaction of amphibia. Dokl.AN SSSR 94 no.2:357-360 Ja '54. (MLRA 7:1)

1. Smolenskiy gosudarstvennyy meditsinskiy institut.
(Chromatophores) (Frogs)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZABELIN, V.A.; ZHBRATOVA, T.M., mladshiy nauchnyy sotrudnik

Use of artificial fiber in twisted yarn. Tekst. prom. 18 no.11:18-20 N '58. (MIRA 11:12)

1.Rukovoditel' laboratorii kruchenykh izdeliy TSentral'nogo nauchno-issledovatel'skogo instituta lubyanykh volokon (for Zabelin).
2.TSentral'nyy nauchno-issledovatel'skiy institut lubyanykh volokon (for Zhbratova).

(Textile fibers, Synthetic)
(Yarn)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZABELIN, V.A.; ZHBRATOVA, T.M., mladshiy nauchnyy sotrudnik

Use of artificial fiber in twisted yarn. Tekst. prom. 18 no.11:18-20 N '58. (MIRA 11:12)

1.Rukovoditel' laboratorii kruchenykh izdeliy TSentral'nogo nauchno-issledovatel'skogo instituta lubyanykh volokon (for Zabelin).
2.TSentral'nyy nauchno-issledovatel'skiy institut lubyanykh volokon (for Zhbratova).

(Textile fibers, Synthetic)
(Yarn)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

GORDON, N.B.; ZHERATOVA, T.M.

Use of synthetic fibers in linen and hemp manufacture. Tekst. prom. 21 no.11:15-19 N '61. (MIRA 14:11)

1. Nauchnyye sotrudniki TSentral'nogo nauchno-issledovatel'skogo instituta promyshlennosti lubyanykh volokon (TSNIILV).
(Textile fibers, Synthetic)
(Rope) (Linen)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHCHAR, L.

Conference on semifinished aluminum products held in Szekesfehervar. p. 406

KOHASZATI LOPCK. (Magyar Banyaszati es Kohaszati Egyesulet) Budapest, Hungary. Vol. 15, no. 9, Sept. 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 9. no. 1, Jan. 1960

Uncl.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAKHIN, L.P.

Calculating walls of reinforced concrete bunkers according to tables compiled on the basis of limit stresses. Trudy Ural. politekh.inst. no.131:20-28 '63.

Study of unwelded joints of rod reinforcements. Ibid.:29-35 (MIRA 16:12)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAKHIN, I.P., kand.tekhn.nauk

Study of the behavior of walls of reinforced-concrete bins. Bet. i zhel.-bet. 8 no.3:109-113 Mr '62. (MIRA 15:3)
(Reinforced concrete construction--Testing)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAKHIN, L.P., dotsent, kand.tekhn.nauk

Designing the walls of reinforced concrete hoppers by the method of limiting equilibrium. Trudy Ural. politekh. inst. no.110:27-34 '61. (MIRA 14:7)
(Hoppers) (Reinforced concrete)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAKHIN, L.P., kand. tekhn. nauk; VILEN, F.I., aspirant

Calculation of walls of prestressed concrete hoppers for strength and rigidity. Sbor. trud. NII po stroi. ASiA [Sverd.] no.8:100-114 '63. (MIRA 16:10)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDANKHIN, L.P., dotsent, kand.tekhn.nauk

Study of square reinforced concrete slabs under the influence of eccentric stretching in two directions. Trudy Ural. politekh. inst. no.110:35-41 '61. (MIRA 14:7)
(Concrete slabs)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAKHIN, L.P., dotsent, kand.tekhn.nauk

Studying the performance of eccentrically stretched reinforced concrete slabs. Trudy Ural. politekh. inst. no.99:150-162 '60. (MIRA 14:5)

(Concrete slabs--Testing)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAKHIN, L.P., dots.

Testing square reinforced concrete slabs under eccentric tension. Bet. i zhel.-bet. no.3:100-103 Mr '58. (MIRA 11:3)
(Concrete slabs--Testing)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAKHIN, L. P.

"Calculation of Noncentrally Tensioned Reinforced Slabs by the Method of Critical Equilibrium." Cand Tech Sci, Ural Polytechnic Inst, Sverdlovsk, 1954. (RZhMekh, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDANKO, O.

On the right path. Fin.SSSR 23 no.5:68-76 My '62. (MIRA 15:5)
(Saving banks) (Socialist competition)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAMIROV, I.T., master

Burning of waste products at thermal electric power plants.
Energetik 8 no. 12:12-13 D '60. (MIRA 13:12)
(Electric power plants) (Furnaces)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAN, A.G.

Interdepartamental seminar on the physical principles of cathode electronics (22d meeting). Radiotekh. i elektron. 8 no.8:1491-1495 Ag '63. (MIRA 16:8)

(Cathodes) (Electron tubes)

5

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAN, A.G.

Interdepartamental seminar on physical principles of cathode electronics (21st session). Radiotekh. i elektron. 8 no.6: 1088-1094 Je '63. (MIRA 16:7)

(Electron tubes--Congresses)
(Thermionic emission--Congresses)
(Cathodes--Congresses)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAN, A.G.

Interdepartamental seminar on the physical principles of cathode electronics (22d meeting). Radiotekh. i elektron. 8 no.8:1491-1495 Ag '63. (MIRA 16:8)

(Cathodes) (Electron tubes)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

SOV/109-4-1-22/30

AUTHORS: Yelinson, M.I. and Zhdan, A.G.

TITLE: Novel Properties of the Electron Emission of the Systems Containing Thin Dielectric Layers (Novyye svoystva elektronnoy emissii sistem, soderzhashchikh tonkiye dielektricheskiy sloi)

PERIODICAL: Radiotekhnika i Elektronika, 1959, Vol 4, Nr 1, pp 135 - 137 (USSR)

ABSTRACT: The electron emitters which were investigated (see Figure 1a) consisted of a tungsten point fixed to a semi-ring. The point was first given a coating of quartz whose surface was subsequently treated with carbon by employing the thermal diffusion method. The tungsten and the outer layer of the coating material are in contact (electrically). When investigating the field emission of this structure, it is found that a stable emission can be obtained at comparatively low operating voltages. However, at a certain value of the emission current, a breakdown effect is observed; this results in the appearance of a crater on the point of the emitter (see Figure 1), though the actual tungsten point is not

Card1/3

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

SOV/109-4-1-22/30

Novel Properties of the Electron Emission of the Systems Containing Thin Dielectric Layers

uncovered. The emission after the breakdown does not disappear and displays a number of novel interesting characteristics. These can be summarised as follows: 1) the emission commences at comparatively high voltages (5-10 kV); 2) a self-activating effect is observed; the increase in the emission current is not accompanied by the increase in the required voltage but, on the contrary, the voltage decreases; 3) the emission displays an anomalous temperature dependence; a decrease in temperature results in an increase of the current; 4) the emission is very stable and 5) in some cases the breakdown of the emitter does not lead to the appearance of the above effects but these may be stimulated by heating the emitter to a temperature of 1 200 °C. The above emission effects are illustrated by the curves of Figures 2 and 3. There are 3 figures and 2 references, 1 of which is Soviet and 1 German.

Card2/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

SOV/109-4-1-22/30

Novel Properties of the Electron Emission of the Systems Containing Thin Dielectric Layers

SUBMITTED: May 4, 1958

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

S/109/60/005/05/020/021
E140/E435

AUTHORS: Basalayeva, N.Ya., Vikhlyayeva, R.P., Zhdan, A.G. Zernov, D.V., Kofanova, T.I., Pervova, L.Ya., Politova, N.M., Polyakova, M.A., Popov, B.N., Spivak, G.V., Shabel'nikova, A.E. and Yasnopol'skaya, A.A.

TITLE: Report on the Ninth All-Union Conference on Cathode Electronics

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 5, pp 866-879 (USSR)

ABSTRACT: This conference took place in Moscow from 21-28th October 1959 with the participation of Soviet scientists and guests from Hungary, Eastern Germany, the Chinese Peoples' Republic and Czechoslovakia. The chairman of the organization committee was Academician Vekshinskiy. The report consists of brief abstracts of 125 papers presented at the plenary sessions and the sections of the conference. 15 Reports were presented in the section on surface properties of solids dealing with electron adsorption and structural properties of active surface films. Electron-optical studies of "patch fields" on emitting surfaces were discussed. 6 Papers on the

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

S/109/60/005/05/020/021
E140/E435

Report on the Ninth All-Union Conference on Cathode Electronics

physics of semiconductor cathodes were given in the section on thermionic emission. 17 Papers were presented in the section on photoelectric emission. Many papers discussed industrial technology of photocells and multipliers. 16 Papers were presented at the section on secondary-electron emission. The section on field emission heard 11 papers discussing pulse field emission at high current densities, surface phenomena, field emission of semiconductors and the "condenser" cathode. More than 30 papers and brief communications were presented at the section on properties, new types and technology of cathodes, relating to the technology of various types of cathodes, their behaviour in practical devices and the operating mechanisms of individual cathodes. 19 Papers were given at the section on interaction of solid bodies with streams of charged particles and residual gases. Notes of conference discussion indicated that several sharp and critical exchanges of views took place.

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

S/109/60/005/010/028/031
E033/E415

AUTHORS: Vikhlyayeva, R.P., Zhdan, A.G. and Shabel'nikova, A.E.

TITLE: Inter-Institutional Seminar on Cathode Electronics (15th Meeting)

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.10, pp.1747-1748

TEXT: Six reports were heard at the 15th Meeting of the Inter-Institutional Seminar on Cathode Electronics held on April 4, 1960 at the Institut radiotekhniki i elektroniki AN SSSR (Institute of Radioengineering and Electronics AS USSR). In his "The Application of Thermo-Electronic Emission for Direct Conversion of Heat Energy into Electrical", N.D.Morgulis gave a review of the work carried out at the Institut fiziki UkrSSR (Institute of Physics AS UkrSSR) and also at the Kiyevskiy gosudarstvennyy universitet (Kiyev State University). Some general physical properties of such converters, using pure tungsten, barium and cesium on tungsten, and thorium bicarbide cathodes had been investigated. For ThC_2 cathodes at 1900 to 2100°K, the efficiency was 8 to 15% and the e.m.f. 1.7 V. L.N.Dobretsov and N.D.Devyatkov took part in the discussion. V.B.Sandomirskiy reported on his and Sh.M.Kogan's work on the

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external emission of "hot" electrons from homeopolar semiconductors with a strong applied homogeneous electric field. The emission current is very dependent on the field particularly in the region corresponding to the horizontal part of the semiconductor volt-amp characteristic. M.I.Yelinson and A.G.Zhdan gave a report on the emission of "hot" electrons from quartz, activated by carbon. The authors had observed the emission of "hot" electrons from thin layers (approximately 5 microns) of SiO_2 + C, depending on the voltage at the layer, the anode voltage and temperature. A.L.Shustina communicated her observations on self-maintained emission from nickel-based, magnesium-oxide, cold-cathodes. The emission was excited by either visible light or electron bombardment and was accompanied by a uniform blue glow. The relation between the current and the collector potential is exponential and the maximum current density was 7 mA/cm^2. The emission current is relatively stable (3% fall over a period of 8 hours). D.V.Zernov pointed out that self-maintaining emission also occurs in films of other materials, e.g. KCl and borium anhydride. N.L.Yasnopol'skiy, N.A.Karelina and V.S.Malysheva reported on secondary emission under (primary

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E033/E415

Inter-Institutional Seminar ...

electron) irradiation of thin layers of magnesium oxide on a thin aluminium base (approximately 400 Å) with current density approximately 10^{-6} A/cm^2. Secondary emission coefficients $\sigma = 7.5 - 8.5$ were obtained for primary electron energies $V_p = 3.5 - 4.5$ kV and $\sigma_{max} = 9$ when $V_p = 5$ kV on MgO film formed by activation of Mg in air. Stable values were somewhat lower. In the report "Secondary Emission under (Primary Electron) Irradiation from some Dielectrics" M.M.Sheftel' communicated that the maximum values of the secondary emission coefficient σ_{max} were: for KCl 4.2 with $V_p = 3$ kV; for NaCl 5.4 with $V_p = 3.5$ to 4 kV; for MgO 8.8 to 9.8 with $V_p = 6$ kV and current densities $\sim 10^{-9}$ A/cm^2. The base was aluminium. It was stated that a thin layer of gold between the Al and the dielectric led to an increase in σ. The "outflight" angular distribution of secondary electrons did not conform to a cosine law. A.Ya.Vyatskin pointed out the necessity of careful separation of "true" secondary electrons from reflected primary electrons. L.N.Dobretsov mentioned that the field of the charged spot can reduce δ and

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distort the angular distribution of secondary electrons. V.I.Fomina in the report "Investigation of Induced Conductivity of Some Chalcogenides of Antimony" gave results obtained on thin layers of Sb_2S_3 and Sb_2Se_3. For Sb_2S_3, gain coefficients of 500 to 600 and "multiplicity" coefficients of 100 to 200 were obtained. For Sb_2Se_3, corresponding figures were 1500 to 1700 and 2 to 3. The induced current depended on the exciting current density by $I_{in} = aI_p^n$, where n varies from 0.5 to 1 at room temperature and above. The induced current also depends on the temperature in an exponential manner.

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88164

S/109/60/005/011/013/014
E032/E514

9,3120 (1003, 1137, 1140)

AUTHORS: Yelinson, M.I. and Zhdan, A. G.

TITLE: Cold Emission of Electrons from Thin SiO_2 + C Films on Tungsten

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.11, pp. 1862-1865

TEXT: The emission of electrons from thin carbon activated quartz films on tungsten has been investigated as a function of the applied electric field. The thin quartz films and their activation were prepared by the method described by the present authors in Ref.6. The method is as follows. Tungsten wires, bent into the forms illustrated in Fig.1, were polished electrolytically and were then placed in a tetraethyl silicate vapour at 1100°C. The thickness of the quartz films deposited in this way lay between 3 and 10 μ, depending on the duration of the treatment. Next, the tungsten wires were placed in a methane atmosphere with a pressure of about 10 mm Hg for 4 to 8 hours at 1300°C. The second lead was in the form of a platinum, tungsten or copper spiral winding on the quartz film. Measurements of the electric field at the layer, the current through it and the emission current were carried out both under

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88164
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E032/E514

Cold Emission of Electrons from Thin SiO_2 + C Films on Tungsten

static and pulsed conditions and the duration of the pulses and their repetition frequency was varied within wide limits. Figs.2,3 and 4 show the experimentally obtained characteristics. Fig.2 shows the dependence of the emission current $i_э$ on the current through the film (or the potential difference across the film) at various temperatures (curve 1 - 25°C, curve 2 - 1200°C, curve 3 - 1350°C; anode voltage U_a = 200 V). As can be seen, the emission current increases very rapidly with increasing internal field in the film. It was found that for a given field at the film, the emission current is practically independent of the temperature. An appreciable emission begins at a field of $E \sim 10^4$ V/cm. Fig.3 shows the emission current as a function of the anode voltage at 25°C (for currents through the film of 650 and 600 mA, respectively). The absence of saturation in these curves is noticeable. Fig.4 shows a typical volt-ampere characteristic of a quartz film. Ohm's law holds up to 5000 V/cm and beyond this point all the currents are higher than those predicted by Ohm's law. The emission is stable in time but is sensitive to fluctuations in the potential

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Cold Emission of Electrons from Thin SiO_2 + C Films on Tungsten

difference across the film. It was found that the emission takes place at small local centres and the emission current density is rather high. The current density was found to be of the order of about 1 mA/cm^2. The nonuniform distribution of emission over the emitting surface means that the properties of the film are very dependent on the technology of preparation.
There are 5 figures and 6 references: 2 Soviet and 4 non-Soviet.

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20421
S/109/60/005/012/019/035
E192/E382

9.4300 (1043, 1143, 1150, 1161)

AUTHORS: Yelinson, M.I., Zhdan, A.G. and Vasil'yev, G.F.

TITLE: Interpretation of the Shape of Voltage-current Characteristics of the Field Emission in Semiconductors

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol. 5, No. 12, pp. 2004 - 2008

TEXT: A typical voltage-current characteristic in lg j and 1/E coordinates for metals is in the form of a straight line for a wide range of currents i and voltages u. Such a characteristic is shown in Fig. 1. However, at current densities $j > 7 \times 10^6$ A/cm^2 a considerable deviation from the linearity is observed. Thus, a characteristic bend appears in the vicinity of the point A (Fig. 1) which occurs at lower j. Further, in the vicinity of the point B the rate of the current increase becomes greater again. The deviation at the point A can be explained by the effect of the space charge of the emitted electrons and by the deviation of the true form of the potential barrier

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E192/E382

Interpretation of the Shape of Voltage-current Characteristics of the Field Emission in Semiconductors

from the classical law of the image forces. Also it should be taken into account that at high electron energies the transfer coefficient of the potential barrier is given by

$$\left\{1 + \exp\left[-\frac{4\sqrt{2}\, m^{1/2} \left|E_x\right|^{3/2}}{\hbar e E} \Theta(y)\right]\right\}^{-1} .$$

The reason for the rapid increase of j in the vicinity of point B is not yet clear. For the semiconductors a typical voltage current characteristic for field emission at low temperatures is also in the form of a straight line. However, very often the experimental characteristics deviate from rectilinear form and these deviations can be of various types. Such characteristics for the emitters made of

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E192/E382

Interpretation of the Shape of Voltage-current Characteristics of the Field Emission in Semiconductors

SiO_2 + C and Al_2O_3 + C were investigated in an earlier work (Ref. 2). It was found that the possible reason for the deviation of these characteristics from linearity is the influence of the strong internal field in the semiconductor, which changes the distribution function and the electron concentration. The characteristics of SiC, Ge and ZnS (taken from Refs. 3, 4, and 5) are also shown. The peculiarity of these three characteristics is the deviation from linearity at small currents. A new type of voltage-current characteristic was discovered. The materials used in the investigation were semiconductors based on SiO_2 and Al_2O_3. In order to make these emitters conducting, SiO_2 was activated with carbon and tungsten was added to Al_2O_3. The particular feature of these substances is their low electron affinity coefficient χ ~ 1 eV (Ref.2).

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E192/E382

Interpretation of the Shape of Voltage-current Characteristics of the Field Emission in Semiconductors

The voltage-current characteristics of three emitters made from SiO_2 + C is shown in Fig. 6. It is seen that the characteristics deviate from linearity at low currents (see point G). These characteristics are novel in that the bend at point G has nothing to do with the barrier produced by the presence of the surface charges since this is overcome at comparatively low electric fields. This is due to the fact that emitters have a very high resistance and in the investigated range of currents they have considerable internal fields. Secondly, the space-charge effect is insignificant due to the fact that the emitted currents are very low. In general, the characteristics of the type shown in Fig. 6 can be obtained at higher temperatures; in fact, at room temperatures the characteristics are often rectilinear while at higher temperatures they have the shape shown in Fig. 6.

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E192/E382

Interpretation of the Shape of Voltage-current Characteristics of the Field Emission in Semiconductors

The shape of the characteristics can be explained if it is assumed that $\Theta(y) \simeq 0$, where Θ is the Nordheim function. This means that the potential barrier at the boundary between the semiconductor and vacuum practically disappears and the exponential emission law is replaced by a comparatively slowly increasing function such as $i = kE^2$.
There are 7 figures and 6 references: 3 Soviet and 3 non-Soviet.

SUBMITTED: March 12, 1960

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E192/E382

Interpretation of the Shape of Voltage-current Characteristics of the Field Emission in Semiconductors

Fig. 1:

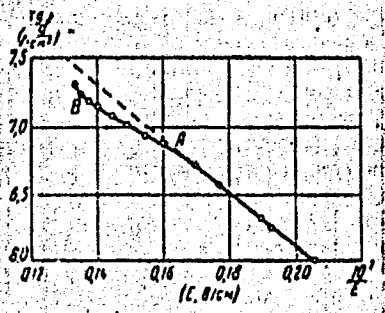
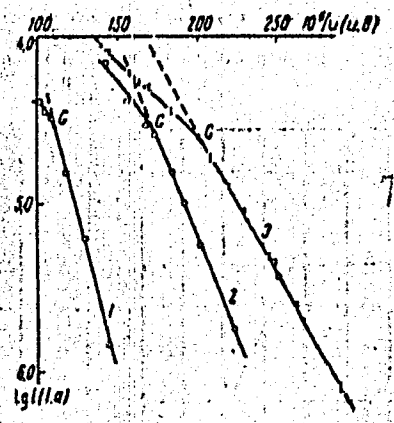


Fig. 6:



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22908

S/109/61/006/004/023/025
E140/E163

9,4300 (1158, 1137, 1147)

AUTHORS: Zhdan, A.G., and Yelinson, M.I.

TITLE: The energy distribution of field emission electrons from semiconductors

PERIODICAL: Radiotekhnika i elektronika, Vol.6, No.4, 1961, pp. 671-672

TEXT: This note is a continuation of previous work by Yelinson and colleagues (Refs. 1, 2), on the theoretical and experimental study of the influence of internal electric fields on semiconductor field emission. It was found earlier that the emission in the presence of an internal field is substantially non-equilibrium. The apparatus used in the present study is similar to that of R.D. Young and E.W. Müller (Phys.Rev., 1959, 113, 1, 115). It was found that the field emission of high-resistance semiconductors does in fact have a non-equilibrium character; at internal fields of the order of 10^4 V/cm there is a substantial increase of electron temperature; with increase of lattice temperature the rate of increase of electron temperature decreases; at large internal fields a substantial number of

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E140/E163

The energy distribution of field emission electrons from semiconductors

emitted electrons occur above the potential barrier. There are 2 figures and 3 references: 2 Soviet and 1 English.

SUBMITTED: January 3, 1961

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S/109/61/006/006/016/016
D204/D303

AUTHORS: Vikhlayeva, R.P., Gor'kov, V.A., and Zhdan, A.G.

TITLE: Inter-departmental seminar on cathode electronics (18th Meeting)

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 6, 1961, 1031 - 1032

TEXT: This is a report on the 18th meeting of the mezhduvedomstvennyy Seminar po Katodnoy elektronike (Inter-departmental Seminar on Cathode Electronics) held February 6, 1961 at the Institut radiotekhniki i elektroniki (Institute of Radio Engineering and Electronics) AS USSR. 10 papers were read. V.A.Grodko, B.N. Markar'yan, V. S. Zolatarevskiy and I.M. Rubanovich, in their paper "The Conditions of Applicability of the Richardson - Dushman Equation in Analyzing Characteristics of a Thermo-Electric Converter", analyzed the characteristics of a thermo-electric diode converter and showed that the emission coefficients $A = A_0(1 - \bar{R})$, where A_0 =

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Inter-departmental seminar ... S/109/61/006/006/016/016
D204/D303

120.4 amp/cm^{-2} (^{o}C)$^{-2}$, $\bar{\bar{R}}$ - the reflections determined by basic laws of thermodynamics. A method of determining the characteristics of such converter was suggested, based on the application of existing experimental data on thermionic emission of materials which answer the requirements of the laws of thermodynamics. L.N. Dobretsov and I.A. Rezgol, who participated in the discussion, pointed out several inaccuracies resulting mainly from the interpretation by the authors of quantity A. G.V. Stepanov, V.I. Pokalyakin and M.T. Elinson presented the paper "Peculiarities of the Emission of Hot Electrons from Spontaneous p - n Junctions in SiC Crystals". The authors have been observing the high current density emissions from small size cuminescent points, at various temperatures and various values of back bias applied to the junction. A sharp increase of emission current and tendency of saturation were observed up to the moment of the carrier avalanche effect. A sprayed coating of BaO at the junction surface produces a large increase of the emission current. I.M. Bronshteyn and B.S. Frayman read two papers: "The Inelastic Scattering of Electrons and Secondary Electron Emis-

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sion from Thin Layers of Certain Metals and Semi-Conductors" and "The Influence of Work Function on the Secondary Emission". In the first work, the authors experimentally established all possible presentations of the $\delta - \eta$ diagrams (where δ and η - the slow and fast components respectively of the secondary emission) when depositing one material onto a base made from a different one. The diagrams $\delta - \eta$ permit evaluation of the effectiveness δ_0 of primary electrons penetrating in depth and of inelastically reflected electrons S and also of the trajectories of slow truly secondary electrons. The results were given for sprayed coating of Pb on Si and Al; of Ti on Ag, Be and Al; of Al on Pb and Ti; of Si on Pb. In their second work with the help of $\delta - \eta$ diagrams it was shown that with the change of the work function of the emitter and as a result of absorption at its surface of foreign matter (Ca on Be and Ag; Ba on Be and Ti; Be, Ti, Ag on Ba; Be on Ca), the observed change in the coefficient of secondary emission depends basically on the change in δ. The values of δ_1, δ_0, and S were obtained for

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Ba and Ca and the role of the "reflected" stream, in the generation of truly secondary emission electrons, is now established. Yu. G. Anikeyev and B.N. Popov read the paper "Secondary Emission of Barium Oxide"; they measured the secondary emission of BaO under pulse voltages and with cathodes having a wide range of their parameters variation, such as the pressure of CO_2 (from 10^{-8} to 10^{-5} mm Hg) and excess of barium in the cathode. The obtained absolute value of the coefficient of secondary emission was in good agreement with values obtained by other authors. At temperatures below 550°C this coefficient is independent of T for all states of activity of the cathode. At high temperatures the coefficient is independent of T if the cathodes have low activation, rises exponentially for medium activated cathodes and falls slightly if cathodes are highly activated. S.V. Izmaylov presented a paper on "The Theory of Secondary Electron Emission". He analyzed the influence of primary electrons, being reflected in the layer of the material on the emission of secondary electrons. Developing the assumptions of D. Youker, the author succeeded in obtaining a more accurate

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analytical expression for the current of secondary emission electrons. E.S. Parilis and P.M. Kishinevskiy read two papers, "Energy Spectrum of Ion-Electron Emission" and "The Mechanism of Ion-Electron Emission and its Dependence on the Ion Velocity". In the first a mechanism of emission of excited electrons from the metal was suggested which could explain theoretically the form of the energy spectrum and evaluate the position of the maximum, its half-width and the maximum energy of electrons. The emission of electrons in vacuum is considered as a result of Auger recombination of the conduction electron with a hole in the filled zone, formed by collisions of ions with the atoms of metal, the probability of Auger recombination being evaluated using the wave functions of Bloch. The authors gave a comparison of theoretical curves with experimentally obtained data. The second paper is a further development of the mechanism of the kinetic ion-electron emission suggested earlier by the authors, based on a statistical analysis of an inelastic collision of the ion with the metal atoms, accompanied by a hole formation in the filled band with a consequent Auger re-

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combination with conduction electron, which reduces to the emission of electron into the vacuum. The movement of the electron is analyzed using the classical method of the Thomas-Fermi model. A formula for the coefficient γ of ion-electron emission was obtained, which determines the dependence of γ on the velocity (u) of the ion; the authors also compared the theoretical curves $\gamma = f(u)$ with the experimental data for different ions in W and Mo, which proved to be in good agreement. The paper on "Mobility of Anti-Emitting Properties of Metals under the Influence of Carbon Dioxide" was presented by B.Ch. Dyubua and B.N. Popov. The authors determined the heat absorption of Ba at the surface of various metals. According to the decrease of absorption the metals can be put in the following sequence: Rh, Sr, Pt, Re, Mo W, Ti, Hf, Zr. Experimental data have been produced which confirm the theory. It has been established that Zr has the best anti-emission properties. It was shown that both pure and coated Ba, Ti, Zr and Hf possess increased emission stability under the action of O_2 as compared with W. The composition of gases in the experiments was controlled by means of a

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simple omegatron. In their paper Ye.S. Zhmud', Ye.P. Ostapchenko, A.I. Figner and I.V. Yudniskiy, "Certain Physical Properties of Complex Compounds, Based on Barium and Maximum Oxides" presented the results of investigations into the physico-chemical and thermoelectric properties of systems based on oxides of barium and of hafnium taken in various molar proportions. The systems were prepared by sintering together the mixtures of powdered raw materials. The phase composition of samples having different molar ratios of constituents was determined using x-ray analysis. As the result of their study the authors discussed the presence of a chemical compound of $BaHfO_3$.

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CHAYNOVET, A. [Chynoweth, A.G.]; COR'KOV, V.A. [translator]; ZHDAN, A.G. [translator]

Internal field emission. Usp. fiz. nauk 75 no.1:169-196 S '61. (MIRA 14:9)

(Semiconductors) (Field emission)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

S/109/62/007/004/010/018
D290/D302

24,7700

AUTHORS: Zhdan, A.G., Yelison, M.I., and Sandomirskiy, V.B.

TITLE: Spectra of autoelectrons emitted from semiconductors

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 4, 1962, 670 - 686

TEXT: The energy spectra of autoelectrons emitted from the semiconductor SiO_2 + C were measured in detail for various autocurrent densities and emitter temperatures; the results are compared with the current-voltage characteristics of the emission, and with theoretical predictions that assume spherical energy surfaces and approximate electron temperatures. The present work was carried out in order to test a theory of autoelectron emission that relates the autocurrent density to the average internal electric field in the semiconductor, and hence to explain the experimental results at high autocurrent densities (previous theories are inadequate at autocurrent densities of above about 500 - 1000 amp./cm^2); also, the results give information about the energy distribution of the elec-

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trons in a semiconductor. The results show the non-equilibrium nature of the emission at high current densities. The electrons in the semiconductor are superheated by the strong internal field, which increases as the emission current density increases. In some cases electrons with energies of about 10 eV are found; the corresponding electron temperatures are about 10,000 - 15,000°K compared with equilibrium emitter temperatures ranging from about 300 - 1600 °K. The electron temperature decreases as the lattice temperature increases. The autoelectrons have a Maxwellian energy distribution at higher energies; therefore the energy distribution of the electrons in the semiconductor is probably also Maxwellian at these energies. There are 18 figures, 2 tables and 11 references: 7 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: R.D. Young, E.W. Muller, Phys. Rev., 113, 1, 115, 1959; R.D. Young, Phys. Rev., 113, 1, 110, 1959; R. Stratton, Proc. Phys. Soc. B, 1955, 68, 430, 746.

SUBMITTED: November 24, 1961

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BALASHOVA, A.P.; GOR'KOV, V.A.; ZHDAN, A.G.; KUL'VARSKAYA, B.S.; PARILIS, E.S.; POLYAKOVA, M.A.; YURASOVA, V.Ye.; YASNOPOL'SKIY, N.L.

Tenth Congress on Cathode Electronics. Radiotekh. i elektron 7 no.7:1258-1272 '62. (MIRA 15:6)

(Electronics—Congresses)

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YELINSON, M.I.; SANDOMIRSKIY, V.B.; GOR'KOV, V.A.; ZHDAN, A.G.

Reply to G.N. Shuppe's and A.S. Kompaneits letter to the editor concerning V.A. Gorkov's article "The first symposium on field emission." Radiotekh. i elektron. 7 no.9:1686-1688 S '62. (MIRA 15:9)

(Field emission) (Shuppe, G.N.) (Kompaneits, A.S.) (Gor'kov, V.A.)

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L 17286-63 BDS/EWP(j)/EWG(k) EWP...
ASD/AFFTC/ESD-3/...

ACCESSION NR: AP3004387

AUTHOR: Zhdan, A. G.

TITLE: Interdepartmental seminar on the physical fundamentals of cathode electronics. 22nd Session (11-12 March 1963)

SOURCE: Radiotekhnika i elektronika, v. 8, no. 8, 1963, 1491-1495

TOPIC TAGS: cathode electronics, seminar, physics seminar

ABSTRACT: Titles and annotations of 17 reports delivered at the Seminar are briefly reported: (1) A. P. Komar and N. N. Syutkin, "Field emission from aging Ni-Be alloy"; (2) A. P. Komar and V. P. Savchenko, "Field emission from metal-like molecules and polymers of C, Se, Sb, Te, Bi"; (3) V. N. Shrednik and Ye. V. Taskayeva, "Field emission from Na on W"; (4) Yu. V. Zubenko, "Field emission from Re coated with Th"; (5) I. L. Sokol'skaya and N. V. Mileshkina, "Energy distribution of electrons in field emission from Ge layers

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ACCESSION NR: AP3004387

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on W"; (6) E. L. Nagayev, "Electric current in a gas-filled diode with potential jumps near electrodes"; (7) N. A. Letunov and M. V. Gomoyunova, "Nonelastic reflection of electrons"; (8) A. M. Tyutikov and T. A. Tumareva, "Variation of coefficient of secondary electron emission of BeO under electron bombardment"; (9) V. L. Borisov, "Peculiarities of the effect of temperature on the coefficient of secondary electron emission from MgO films"; (10) A. Ye. Iorish, B. Ya. Moyzhes, O. V. Sorokin, and F. A. Chudnovskiy, "Temperature distribution in a cathode oxide coating"; (11) B. V. Filippov, "Mechanism of thermal [illegible] in the near-threshold region"; (12) B. V. Filippov, "New scheme of adsorption"; (13) Ye. A. Tishin, "Effect of crystalline structure on the work function [illegible] metals"; (14) K. S. Beynar and B. P. Nikonov, "Measuring the work function of oxide-coated cathodes by the contact-potential-difference method"; (15) N. L. Yasnopol'skiy and N. A. Karelina, "Secondary-electron through emission from MgO treated in Cs vapor"; (16) I. P. Bonomorskiy, "Two types of secondary-emission characteristics of Molter emitters"; (17) I. P. Bonomorskiy and A. A. Peresleni, "Some results of an experimental investigation of secondary-emission

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ACCESSION NR: AP3004387

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MgO and KCl coatings." The following specialists took part in discussions: N. D. Morgulis, G. F. Vasil'yev, V. N. Shishkin, A. A. Komar, A. R. Shul'man, A. G. Naymovets, G. N. Shuppe, V. N. Lepeshinskaya, M. I. Yelinson, P. G. Borzyak, N. I. Ionov, L. N. Dobretsov, Yu. G. Ptushinskiy, I. M. Bronshteyn, B. N. Popov, B. P. Nikonov, I. A. Rezgol', D. V. Zernov, S. A. Fridrikhov, and G. S. Kreynina. Orig. art. has: no figure, formula, or table.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR (Institute of Radio Engineering and Electronics, AN SSSR)

SUBMITTED: 00 DATE ACQ: 20Aug63 ENCL: 00

SUB CODE: PH NO REF SOV: 000 OTHER: 000

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

MOTT, N.F.; TUZ, U. [Twose, W.D.]; SANDOMIRSKIY, V.V. [translator]; GOR'KOV, V.A. [translator]; ZHDAN, A.G. [translator]

"The theory of impurity conduction". Usp. fiz. nauk 79 no.4: 691-740 Ap '63. (MIRA 16:3)

(Electric conductivity)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

L 01827-66 EWT(1)/EWT(m)/EWP(n)-2/EWG(m)/EPA(w)-2/T/EWP(t)/EWP(b) IJP(c)
AT/JD

ACCESSION NR: AP5020129 UR/0109/65/010/008/1500/1506
537.525.2+537.533.2

AUTHOR: Yelinson, M. I.; Zhdan, A. G.; Kudintseva, G. A.; Chugunova, M. Ye.

TITLE: Thermionic and field emissions from stannic oxide

SOURCE: Radiotekhnika i elektronika, v. 10, no. 8, 1965, 1500-1506

TOPIC TAGS: thermionic emission, field emission, stannic oxide

ABSTRACT: Thin (0.1—0.3 μ) polycrystalline SnO_2 films deposited on an optically-polished quartz were subjected to constant and pulsed (100 pps) voltages. A very intense hot-electron emission was observed at low voltages, which demonstrates the possibility of a strong "overheating" of the electron gas in thin SnO_2 films. The curve of film voltage vs emission current was typical of previously studied emission systems; viz., the emission current first increased rapidly and then tended to saturate. The current-voltage characteristic of the film is linear within a wide range of voltages; the curve of emission plotted against the film voltage had its maximum at a low voltage. A controllable high-current-density stable field emission from a SnO_2 film having a thin break was observed at low voltages. "The authors wish to thank V. B. Sandomirskiy and Sh. M. Kogan for a useful discussion of the

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

L 01827-66

ACCESSION NR: AP5020129

results and also T. K. Likhacheva and V. Ye. Filippov for their help in the experimental work." Orig. art. has: 7 figures. [03]

ASSOCIATION: none

SUBMITTED: 13May64 ENCL: 00 SUB CODE: EC

NO REF SOV: 00 OTHER: 001 ATD PRESS: 4086

Card 2/2

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

L 07360-67 EWT(m)/EWP(t)/ETI IJP(c) JD/GD

ACC NR: AT6033657 SOURCE CODE: UR/0000/66/000/000/0384/0389

AUTHOR: Zhdan, A. G.; Abbyasov, Z.; Yelinson, M. I.; Chugunova, M. Ye.

ORG: none

TITLE: Studies of thin-film field-effect transistors based on CdS

SOURCE: Voprosy plenochnoy elektroniki (Problems in thin film electronics); sbornik statey. Moscow, Izd-vo Sovetskoye radio, 1966, 384-389

TOPIC TAGS: field effect transistor, thin film circuit, volt ampere characteristic

ABSTRACT: Operating characteristics of thin film FET's were measured, with particular interest in the effect of temperature extremes on transient response. Samples were vacuum-deposited, and consisted of CdS-Al sources and drains, with $SiO(CaF_2)Al$ gates. Film thickness was from 2 to 5 mm; gate widths were either 9 or 18 μ. Response to square wave pulses varied widely, depending on both pulse length and differences in the crystalline structure among samples. Fig. 1 shows the different responses to 100-sec pulses obtained from three samples. The action of "fast" and "slow" trapping is described as governing the observed rise and decay effects. Temperature tests,

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L 07360-67

ACC NR: AP6033657

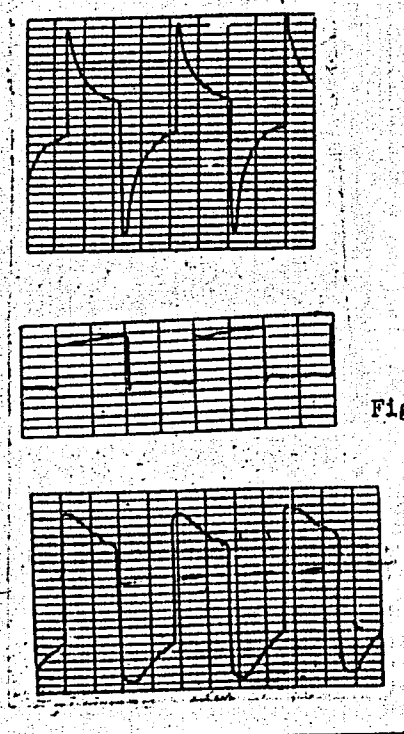

Fig. 1. CdS FET response to 100-sec pulses

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ACC NR: AP6033657

done at 10^{-2} mm Hg from 20C to 130C, showed general improvement in characteristics with increased temperature, including an increase in gain. This indicates that at higher temperatures the deeper lying traps play a predominant part. Volt-ampere characteristics as functions of temperature are also given. Orig. art. has: 5 figures.

SUB CODE: 09/ SUBM DATE: 27Jun66/ ORIG REF: 001/ ATD PRESS: 5101

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ACC NR: AP6027249 SOURCE CODE: UR/0109/66/011/008/1536/1537

AUTHOR: Zhdan, A. G.; Sheftal', R. N.; Chugunova, M. Ye.; Yelinson, M. I.

ORG: none

TITLE: Properties of cadmium-sulfide films produced by vacuum-spraying onto directive backings

SOURCE: Radiotekhnika i elektronika, v. 11, no. 8, 1966, 1536-1537

TOPIC TAGS: microelectronic thin film, cadmium sulfide

ABSTRACT: C. A. Escoffery did not obtain high-quality single-crystal CdS films apparently because of nonoptimal experimental conditions (Solid State Electronics, 1963, 7, 1, 31). The present article reports the successful preparation and testing of CdS films sprayed onto muscovite, flogopite, NaCl, KCl, and α-Al_2O_3; R. Zuleeg's method of spraying was used (Solid State Electronics, 1963, 7, 1, 31).

Card 1/2 UDC: 539.216.22:546.48'22

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ACC NR: AP6027249

Exact data re the spraying process yielding high-quality single-crystal CdS films is reported. Test results: resistivity of muscovite-deposited CdS film was 10^7 ohms·cm; Hall mobility, 110 cm^2/v sec; at low spraying temperatures, 0.05 ohm·cm and 10 cm^2/v sec, respectively. Glass-deposited films showed 10^4 ohms·cm and 1 cm^2/v sec, respectively. Other data is reported. Orig. art. has: 5 figures.

SUB CODE: 09 / SUBM DATE: 07Apr66 / ORIG REF: 002 / OTH REF: 007

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

YELINSON, M.I.; ZHDAN, A.G.; KRAPIVIN, V.F.; LINKOVSKIY, Zh.B.; LUTSKIY, V.N.; SANDOMIRSKIY, V.B.

Theory of a "noncontact" version of the emission of hot electrons from semiconductors. Radiotekh. i elektron. 10 no.7:1288-1294 Jl '65. (MIRA 18:7)

1. Institut radiotekhniki i elektroniki AN SSSR.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAN, I.T., inzh.

Welding 10KhGN and 09G2 low-alloy steel for the construction of railroad cars. Svar.proizv. no.11:35 N '58. (MIRA 11:11)

1. Kryukovskiy vagonostroitel'nyy zavod.
(Steel alloys--Welding) (Railroads--Cars--Construction)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

AUTHOR: Zhdan, I.T., Engineer SOV-135-58-11-13/21

TITLE: Experience in Welding Low-Alloy "10KhGN" and "09G2" Steels in Railroad Car Structures (Opyt svarki vagonnykh metallokonstruktsiy iz nizkolegirovannykh staley 10KhGN i 09G2)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 11, p 35 (USSR)

ABSTRACT: In welding low-alloy structural steel grades ("10KhGN" and "09G2") it was necessary to find the proper electrode type to be used for welding on a.c. and to investigate the possibility of using automatic welding with low-carbon rods under "AN-348A" and "OSTs-45" flux. Tests were performed with "TsM-7S" and "U-55" electrodes of 4, 6 and 8 mm in diameter. The composition of the coating of "U-55" electrodes is given (51.8% marble; 20.6% fluorite; 3.3% granite; 9.1% ferromanganese; 9.1% ferrosilicon; 3.3% potash; 2.8% bentonite - 28 - 30% of sodium silicate solution amounts to 28 to 30% of the weight of the coating). Automatic welding was carried out under "OSTs-45" and "AN-348A" flux with low-carbon "Sv-08" rod. The performed tests proved that "U-55" electrodes can be successfully used in the welding (on a.c.) of "09G2" and "10KhGN" steels and ensure satisfactory mechanical and technological properties of the weld joints. Welding with the use of

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SOV-135-58-11-13/21

Experience in Welding Low-Alloy "10KhGN" and "09G2" Steels in Railroad Car Structures

"TsM-7S" electrodes is not recommended, as they do not provide a satisfactory tightness of seam. Automatic welding under "OSts-45" and "AN-348A" flux in all cases gave excellent results.

ASSOCIATION: Kryukovskiy vagonostroitel'nyy zavod (Kryukovo Railroad Car Building Plant)

1. Steel--Arc welding 2. Arc welding--Electrodes
3. Electrodes--Test results 4. Railroad cars--Construction

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

BOROVKOV, S.; ZHDAN, N.

Effect of the extent of liver necrobiosis on the total protein and urea level in blood serum. Izv.AN Latv.SSR no.7:123-128 '63. (MIRA 17:4)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

BOROVKOV, S.; ZHDAN, N.

Permissible time for the exclusion of the liver from blood circulation and the effect of the extent of the resection on its function. Izv. AN Latv.SSR no.9:103-110 '63. (MIRA 16:12)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

KOROSTOVTSEV, S.B.; FISHZON-RYSS, Yu.I.; BALAKHINA, M.R.; VO VAN-VIN; ZHDAN, P.P.; KULTYSHEVA, Z.F.; Litvinenko, G.V.

Comparative characteristics of stomach exploration without catheter by means of ion-exchange resins saturated with azure and by Sahli's test. Lab. delo no. 8:470-474 '64. (MIRA 17:12)

1. Kafedra terapii dlya usovershenstvovaniya vrachey No. 1 (nachal'nik - prof. P.I.Shilov) Voyenno-meditsinskoy ordena Lenina akademii im. S.M.Kirova i Okruzhnoy gospital' (nachal'nik A.M.Andryushchenko), Leningrad.

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ZHDAN, S.Z., kand. tekhn. nauk; KRASYUK, L.S., inzh.; STEPANOVA, L.A., inzh.

Rated characteristics of Freon ejectors. Khol. tekh. i tekh. no.1:61-68 '65. (MIRA 18:9)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ACC NR: AT6026551 SOURCE CODE: UR/2776/66/000/046/0067/0075

AUTHORS: Gulyayev, A. P.; Zhadan, T. A.

ORG: none

TITLE: Investigation of the properties of steel OKh18G8N2T

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Sbornik trudov, no. 46, 1966. Spetsial'nyye stali i splavy (Special steels and alloys), 67-75

TOPIC TAGS: alloy steel, nickel steel, chromium steel, steel / OKh18G8N2T steel

ABSTRACT: The effect of Cr, Mn, and Ni on the structure and properties of steel OKh18G8N2T was investigated. Two specimens were studied, representing the ferrite and austenite region limits in the steel, respectively. The investigation supplements the results of A. P. Gulyayev and T. A. Zhadan (Sb. trudov TsNIIChM, Spetsial'nyye stali i splavy, vyp. 39, Izd. Metallurgiya, 1965, s. 109). The phase composition, the usual mechanical properties, and the magnetic saturation of the steel were determined as a function of the thermal treatment and degree of deformation of the latter. The experimental results are presented graphically (see Fig. 1). It was found that the mechanical properties of the steel were almost independent of the phase composition in the composition range of 25--30% α-phase. Embrittlement

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L 09950-67

ACC NR: AT6026551

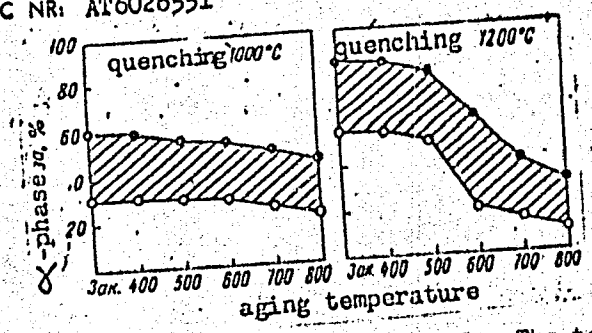

Fig. 1. Change in the amount of the α-phase as a function of the aging temperature. Solid points: ferrite-like phase; open circles: austenite-like phase.

becomes most intensive at 600--700C. The tendency towards intercrystalline corrosion was observed for steels containing more than 85% of the α-phase. The following composition for the steel is recommended: ≤ 0.08% C, ≤ 0.8% Si, 17--19% Cr, 7--9% Mn, 2.1--2.8% Ni, and 0.3--0.5 % Ti. Orig. art. has: 1 table and 10 graphs.

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

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APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZH N, T.I., inzh.; KUDRYAVTSEV, L.A.

Electrical equipment installation operations. Energ. stroi. no.42: 60-63 '64. (MIRA 18:3)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAN, V.

Licences for a new building material. Vnesh. torg. 41 no.9:20-22 '61. (MIRA 14:8)

(Building materials)
(Licenses)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAN, V.

Peat litter. Vnesh.torg. 43 no.3:29 '63; (MIRA 16:4)
(Litter (Bedding)) (Peat)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAN, V.

License agreement came into effect. Vnesh. torg. 42 no.4:29 '62. (MIRA 15:4)

(Russia—Foreign economic relations—Japan)
(Japan—Foreign economic relations—Russia)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

ZHDAN, V.M.

Rupture of the liver and the pancreas. Zdrav. Belor. 6 no.6:73 Je '60. (MIRA 13:8)

1. Iz khirurgicheskogo otdeleniya goroda Baranovich (glavnyy vrach M.T. Kudrin).
(PANCREAS—RUPTURE) (LIVER—RUPTURE)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5

MARTYNOVSKIY, Vladimir Sergeyevich; MEL'ISER, Leonid Zinov'yevich; Prinimali uchastiye: ZHDAN, V.Z., kand. tekhn. nauk; DUDNIK, D.M., inzh.; LEVIT, M.M., inzh.; MART'YANOVA, I.Ya., red.

[Refrigerating plants on ships] Sudovye kholodil'nye ustanovki. Moskva, Transport, 1964. 382 p. (MIRA 17:11)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R002064610016-5"

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