BETEREV, M.M.: BOL'SHOV, M.M.; MOSKIN, S.I., agronom, retsenzent; KOZKO, L.I, inzhener, redaktor; MATVEYEVA, Ye.N. tekhnicheskiy redaktor

[Booklet on safety and hygienic measures for working on tractors] Pamiatka po tekhnike bezpoasnosti i sanitarii pri rabote na traktore. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1955. 31 p. (MLRA 8:8)
(Tractors—Safety measures)

BOL'SHOV, M.

Safety measures of agricultural mechanizers in field work. Sov. profsoiuzy 3 no.4:69-73 Ap '55. (MLRA 8:5)

1. Glavnyy tekhnicheskiy inspektor TsK profsoyuza rabochikh i sluzhashchikh sel'skogo khozyaystva i zagotovok.
(Agriculture--Safety measures)

KRYUKOV, G.; BOL'SHOV, M.

Working conditions on tractors and agricultural machinery.
Trakt. i sel'khozmash. 31 no.7:17-18 Jl '61. (MIRA 14:6)

1. TSentral'nyy komitet profsoyuza rabochikh i sluzhashchikh sel'skogo khozyaystva i zagotovok.
(Tractors) (Agricultural machinery)

BOL'SHOV, M. M.

BITEREV, M.M., kand.tekhn.nauk; BOL'SHOV, M.M., inzh.; MOKSIN, S.I., red.; PECHENKIN, I.V., tekhn.red.

[Manual of labor safety in agriculture] Spravochnik po okhrane truda v sel'skom khoziaistve. Moskva, Izd-vo M-va sel'.khoz. SSSR, 1957. 202 p. (MIRA 11:4)

1. Russia (1923- U.S.S.R.) Upravleniye rabochikh kadrov truda i zarabotnoy platy.
(Agriculture--Safety measures)

BETKEV, M.M., kand. tekhn. nauk; BOL'SHOV, M.M., inzh.; MOKSIN, S.I., red.; USHKOVA, M.P., tekhn. red.

[Safety and sanitation manual for work with agricultureal machinery and tools] Pamiatka po tekhnike bezopasnosti i sanitarii pri rabote na sel'skokhoziaistvennykh mashinakh i orudiiakh. Moskva, 1958. 38 p. (MIRA 11:10)

1. Russia (1923- U.S.S.R.) Upravleniye rabochikh kadrov truda i zarplaty.

(Agricultural machinery--Safety measures)

BOL'SHOV, M. (Ust'-Labinskiy rayon, Krasnodarskiy kray)

On the collective farm "Kuban." Okhr. truda i sots. strakh. no.4:49-52 Ap '59. (MIRA 12:8)
(Farm mechanization--Hygienic aspects) (Insurance, Social)

BETEREV, M.M.; BOL'SHOV, M.M.; ZAPIVAKHIN, A.I., red.; RAKITINA, Ye.D., red.; PROKOF'YEVA, L.N., tekhn. red.

[Handbook on safety measures in agriculture] Spravochnik po okhrane truda v sel'skom khoziaistve. Moskva, Izd-vo sel'khoz. lit-ry, zhurnalov i plakatov, 1961. 559 p. (MIRA 15:2)
(Agriculture--Safety measures)

BOL'SHOV, M.; GOSTEV, V.; DUVANKOV, G., inzh.; AGAFONOV, I.

Old sicknesses of the new machinery. Okhr. truda i sots. strakh. 4 no.3:42-46 Mr '61. (MIRA 14:3)

1. Tekhnicheskiy inspektor TSentral'nogo komiteta profsoyuza rabochikh i sluzhashchikh sel'skogo khozyaystva i i zagotovok (for Bol'shov). 2. Starshiy tekhnicheskiy inspektor Moskovskogo soveta profsoyuzov(for Gostev). Predsedatel' obshchestvennogo soveta profsoyuzov "Okhrany truda i sotsial'noye strakhovaniya" (for Duvankov). 4. Spetsial'nyy korrespondent zhurnala "Okhrana truda i sotsial'noye strakhovaniye" (for Agafonov).

(Machinery—Design)
(Industrial safety)

BOL'SHOV, M.M.; GOLUBEVA, I.A., red.; RESHETIN, G.V., tekhn. red.

[Safety rules for stablemen]Pamiatka po tekhnike bezopasnoti dlia koniukhov. Moskva, Sel'khozizdat, 1962. 16 p. (MIRA 15:7)
(Horses)

BOL'SHOV, M.M.; GOLUBEVA, I.A., red.

[Safety rules for grader and scraper operators] Pamiatka po tekhnike bezopasnosti dlia greideristov i skreperistov. Moskva, Sel'khozizdat, 1962. 14 p. (MIRA 15:7)
(Graders (Earthmoving machinery))—Safety measures)
(Scrapers—Safety measures)

BOL'SHOV, M.M.; GOLUBEVA, I.A., red.; RESHETIN, G.V., tekhn. red.

[Instructions on safety measures for workers engaged in loading and unloading operations] Pamiatka po tekhnike bezopasnosti dlia rabochikh, zaniatykh na pogruzochno-razgruzochnykh rabotakh. Moskva, Sel'khozizdat, 1962. 23 p.
(MIRA 15:7)
(Loading and unloading--Safety regulations)

BETEREV, M.; BOL'SHOV, M.

Let's supply agriculture with safe machinery. Okhr. truda i sots. strakh. 5 no.5:12-13 My '62. (MIRA 15:5)
(Agricultural machinery--Safety measures)

BETEREV, M.M.; BOL'SHOV, M.M.; GOLUBEVA, I.A., red.; PECHENKIN, I.V., tekhn. red.

[Manual on safety measures for work with hay harvesting machines] Pamiatka po tekhnike bezopasnosti pri rabote na senouborochnykh mashinakh. Moskva, Sel'khozizdat, 1963. 15 p. (MIRA 16:4)

1. Profsoyuz rabochikh i sluzhashchikh sel'skogo khozyaystva i zagotovok. TSentral'nyy komitet.
(Harvesting machinery--Safety measures)

BETEROV, M.M.; BOL'SHOV, M.M.; GOLUBEVA, I.A., red.; PECHENKIN, I.V., tekhn. red.

[Manual on safety measures in the operation of feed processing machines] Pamiatka po tekhnike bezopasnosti pri obsluzhivanii mashin po pererabotke kormov. Moskva, Sel'khozizdat, 1963. 22 p. (MIRA 16:4)

1. Profsoyuz rabochikh i sluzhashchikh sel'skogo khozyaystva i zagotovok. TSentral'nyy komitet.
(Agricultural machinery--Safety measures)

BETEREV, M.M.; BOL'SHOV, M.M.; GOLUBEVA, I.A., red.; PECHENKIN, I.V., tekhn. red.

[Manual on safety measures for work with tractor-mounted and semimounted machines] Pamiatka po tekhnike bezopasnosti pri rabote na traktorakh s navesnymi i polunavesnymi mashinami. Moskva, Sel'khozizdat, 1963. 28 p. (MIRA 16:4)

1. Profsoyuz rabochikh i sluzhashchikh sel'skogo khozyaystva i zagotovok. TSentral'nyy komitet.
(Agricultural machinery—Safety measures)

BETEREV, M.M.; BOL'SHOV, M.M.; GOLUBEVA, I.A., red.; PECHENKIN, I.V., tekhn. red.

[Manual on safety measures for work with tractors and tractor-drawn machines]Pamiatka po tekhnike bezopasnosti pri rabote na traktorakh s pritsepnymi mashinami. Moskva, Sel'khozizdat, 1963. 31 p. (MIRA 16:4)

1. Profsoyuz rabochikh i sluzhashchikh sel'skogo khozyaystva i zagotovok. TSentral'nyy komitet.
(Agricultural machinery--Safety measures)

BOL'SHOV, M.M.; GOLUBEVA, I.A., red.; PECHENKIN, I.V., tekhn. red.

[Manual on safety measures for the distribution and storage of fuel and lubrication materials] Pamiatka po tekhnike bezopasnosti pri otpuske i khranenii goriuche-smazochnykh materialov. Moskva, Sel'khozizdat, 1963. 38 p. (MIRA 16:4)

1. Profsoyuz rabochikh i sluzhashchikh sel'skogo khozyaystva i zagotovok. TSentral'nyy komitet.
(Lubrication and lubricants--Safety measures)
(Fuel--Safety measures)

BETEREV, M.M.; BOL'SHOV, M.M.; GOLUBEVA, I.A., red.; PECHENKIN, I.V., tekhn. red.

[How to protect oneself from accidents]Kak predosterech' sebia ot neschastnogo sluchaia. Moskva, Sel'khozizdat, 1963. 51 p. (MIRA 16:2)

(Agriculture—Safety measures)

BOL'SHOV, M.M.; GORNIK, M.V., red.; RESHETIN, G.V., tekhn. red.

[Manual on safety measures for the operators of excavating machinery] Pamiatka po tekhnike bezopasnosti dlia ekskavatorshchikov. Moskva, Izd-vo sel'khoz.lit-ry, zhurnalov i plakatov, 1962. 21 p. (MIRA 16:4)
(Excavating machinery—Safety measures)

BETEREV, M.M.; BOL'SHOV, M.M.

[Manual on safety measures for working with combines] Pamiatka po tekhnike bezopasnosti pri rabote na kombaine. Moskva, Sel'khozizdat, 1963. 39 p. (MIRA 16:4)

1. Profsoyuz rabochikh i sluzhashchikh sel'skogo khozyaystva i zagotovok. TSentral'nyy komitet.
(Combines (Agricultural machinery))--Safety measures)

BETEREV, M.M.; BOL'SHOV, M.M.; GOLUBEVA, I.A., red.; PECHENKIN, I.V., tekhn. red.

[Instructions in safety measures in the use of tractors and self-propelled chassis for transportation work] Pamiatka po tekhnike bezopasnosti pri ispol'zovanii traktorov i samokhodnykh shassi na transportnykh rabotakh. Moskva, Sel'khozizdat, 1963. 22 p. (MIRA 16:6)
(Tractors--Safety measures)

BOL'SHOV, M.M.; GOLUBEVA, I.A., red.; PECHENKIN, I.V., tekhn. red.

[Instructions in safety measures for working on mechanized threshing floors] Pamiatka po tekhnike bezopasnosti pri rabote na mekhanizirovannykh tokakh. Moskva, Sel'khozizdat, 1963. 19 p. (MIRA 16:6)

(Threshing machines--Safety measures)

BOL'SHOV, M.

Prevention of accidents during the repairing of agricultural machinery. Okhr. truda i sots. strakh. 6 no.12:36-37 D '63.
(MIRA 17:2)

BETEREV, M.M.; BOL'SHOV, M.[illegible]; RAKITINA, Ye.D., red.

[Manual on labor protection in agriculture] Spravochnik po okhrane truda v sel'skom khoziaistve. Izd.2., perer. i dop. Moskva, Sel'khozizdat, 1963. 615 p. (MIRA 17:6)

BAUM, V.A., doktor tekhn.nauk, otv.red.; TOLSTOV, Yu.G., doktor tekhn. nauk, red.; PETROV, V.I., kand.tekhn.nauk, red.; KOLCHANOGOVA, I.P., kand.tekhn.nauk, red.; LIBKIND, M.S., kand.tekhn.nauk, red.; NABOKO, I.M., inzh., red.; RABURIN, B.L., inzh., red.; BOL'SHOV, N.D., red.; BURAKOV, S.Ye., tekhn.red.

[Proceedings of the Fifth Conference of Young Scientists] Trudy V konferentsii molodykh uchenykh. Moskva, Akad.nauk SSSR, Energ.in-t. Vol.1. 1960. 91 p. Vol.2. 1960. 79 p. (MIRA 14:3)

1. Konferentsiya molodykh uchenykh. 5th. (Electric power distribution)

BOL'SHOV, V., inzh.; SVOREN', R., inzh.

Simple battery-powered radio receiver. Radio no.3:42-46 Mr '61. (MIRA 14:8)

(Radio--Receivers and reception)

BOL'SHOV, V., inzh.

Networks of low-frequency preamplifiers. Radio no.5:45-49 My '63. (MIRA 16:5)
(Radio circuits) (Amplifiers, Electron-tube)

BOL'SHOV, V., inzh.; SMIRNOV, V.; NUZHDIN, V.

Automatic device for measuring arterial blood pressure.
Radio no.6:31-33 Je '64. (MIRA 17:10)

BOL'SHOV, V., inzh.

Output stages of low-frequency amplifiers. Radio no.6:41-45 Je '63. (MIRA 16:7)

(Amplifiers (Electronics))

BOL'SHOV, V., inzh.

Low frequency amplifiers. Radio no.8:27-31 Ag '63. (MIRA 16:9)
(Amplifiers, Electron-tube)

BOL'SHOV, V., inzh.

Low-frequency amplifiers. Radio no.7:33-35 Jl '65.
(MIRA 18:9)

BOL'SHOV, V. G.

Thermionic Emission of Copper at the Melting Point. V. G. Bol'shov and L. N. Dobretsov (*Doklady Akad. Nauk S.S.S.R.*, 1954, 98, (2), 193–196).—[In Russian]. B. and D. have redetermined the thermionic emission for molten and solid Cu under conditions of greater purity and with a better vacuum than were employed by Geets (*Z. Physik*, 1927, 43, 831; *J. Inst. Metals* (*Abstracts*), 1927, 38, 405) or Ameiser (*ibid.*, 1931, 69, 111; *J. Inst. Metals* (*Abstracts*), 1931, 47, 334). 99·995% Cu contained in a Mo crucible was used. The results are given as a plot of (log j − 2 log T) against $5040/T$, j being the thermionic a.d. at abs. temp. T. Two linear branches intersecting at the m.p. were obtained, in agreement with the equation $j = AT^2 \exp(-e\phi/kT) = A_0(1 - \bar{P})T^2 \exp(-\phi_T/kT)$, where $\bar{P}$ is the mean coeff. for the repulsion of electrons from the potential barrier at the emitter/vacuum barrier, ϕ_T the true thermionic work-function, ϕ the effective (or isothermal) work-function ($= \phi_{T_0} - \alpha T$), and A_0 the const. = 120 amp./cm.^{2}/degree^2. From the curves obtained, values for solid and molten Cu were: A 10·7, 3·2 × 10^3 amp./cm.^{2}/degree^2; ϕ 4·4, 5·3 V.; α 1·7 × 10^{-4}, −7 × 10^{-4} V./degree, resp. At the m.p., $\phi_T = 4{\cdot}62$ V.; the absence of any sudden change at the m.p. is attributed to the increase in the disorder of the surface atoms consequent upon a rise in temp. becoming so great near the m.p. that there is no further change when melting brings about the destruction of internal structure. This would provide another reason for the dependence of ϕ_T for a crystal face upon the temp. and also indicates that ϕ_T is independent of the vol. structure of the crystal and depends only on the structure of the surface layers. No explanation could be advanced for the negative value of α for molten Cu.—G. V. E. T.

BOL'SHOV, V.G.

[Research on thermionic and secondary electronic emission in solid and liquid states of copper, silver, germanium and tin; abstract of a dissertation for the degree of candidate of physical and mathematical sciences] Issledovaniia termoelektronnoi i vtorichnoi electronnoi emissii v tverdom i zhidkom sostoianiiakh medi, serebra, germaniia i olova; avtoreferat dissertatsii na soiskanie uchenoi stepeni kandidata fiziko-matematicheskikh nauk. Leningrad, Leningradskii fiziko-tekhnicheskii institut Akademii nauk SSSR, 1956. 11 p. (MLRA 10:2)
(Electron emission)

BOL'SHOV, V. G.

Experimental investigation of the thermionic and the secondary electron emission of copper and germanium during transition from a solid to a liquid state

Phys. Tech. Inst. Acad. Sci. U.S.S.R.

[illegible] tube was attached to the vacuum installation for [illegible] surface treatment by heating in H2. Special care was [illegible] on the cleaning of the crucibles. When Cu is pure there is no jump of thermionic emission characteristics at the m.p.; only a slight change in slope. The same is true for Ge, in which case the temp. dependence of thermionic emission in the solid state is not linear on the log scale. The secondary emission coeff. decreases abruptly at the m.p. by 5–6% for Cu and 9–10% for Ge, independently of the primary electron energy. The absence of a jump in the thermionic emission is explained by assuming disordered conditions on the surface of the crystal before the m.p.; therefore, φ should only depend on the structure of surface layers. φ for Ge changes between 400 and 959° from 2.4 to 3.8 e.v., greatly differing from the value of 4–4.8 e.v. obtained by other authors.

S. Pakshver

BOL'SHOV, V. G.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1351
AUTHOR BOL'ŠOV, V.G.
TITLE The Investigation of Thermoelectronic Emission on the Occasion of the Transition from the Solid to the Liquid State.
PERIODICAL Žurn.techn.fis, 26, fasc. 6, 1151-1162 (1956)
Issued: 7 / 1956 reviewed: 10 / 1956

Here previously carried out measurements of the thermoemission current of Cu, Ag and Ge in the solid as well as in the liquid state are repeated with better vacuum conditions and with more pure material.
The measuring device is described on the basis of a drawing. The principal components of the measuring device proper, which is fitted in a vacuum piston, are: a vat containing the material to be examined, a heating spiral made of tantalum sheets, screens for thermal insulation, a protective- and a measuring electrode, as well as a thermopile made of Wolfram- and tantalum wire. The repeated examination of Cu and Ag permits comparison with previously obtained results. The Ge-samples were cut out from a monocrystal of the N-type, the admixtures of which were of the order $10^{14}/cm^3$. After the experiment the germanium changed its N-conductivity into a P-conductivity.
Measuring results: In the course of experiments undertaken with purer material and better vacuum conditions the thermoelectron current has no jump during transition from one state of aggregation to another. However, the curve of the temperature dependence of emission changes its steepness at melting point. The lack of a jump of the emission current at melting point means that the true work function

Žurn.techn.fis, 26, fasc.6, 1151-1162 (1956) CARD 2 / 2 PA - 1351

$\varphi(T)$ does not change on the occasion of transition from the solid to the liquid state. The change of the steepness of temperature dependence at melting point in the case of a constant $\varphi(T)$ is due to a jump-like modification of the temperature coefficient of the work function.

Discussion of results: The lack of a jump-like change of the thermoemission current on the occasion of melting could be explained as follows: The increase of the temperature of the crystal gradually increases the degree of the re-arrangement of surface atoms. The degree of re-arrangement might become so great at temperatures near melting point that the structure of the surface layers and the arrangement of atoms in them is not changed on the occasion of the destruction of the distant arrangement in the volume of the crystal (i.e. when it melts). In that case also the work function is not changed. From this explanation there result two interesting conclusions: One of the causes for the changing of the work function of a given crystal surface on the occasion of a change of temperature is a structural change of the boundary surface of the crystal as a result of increased re-arrangement. 2.) The modification of the spatial structure of the crystal during melting does not change the work function.

INSTITUTION:

BOLSHOV, V. G.

USSR / Electronics H

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9768

Author : Bol'shov, V.G., Seleznev, V.K.
Inst : Not given
Title : Secondary Electron Emission of Copper, Germanium, and Tin in Solid and Liquid States

Orig Pub : Zh. tekh. fiziki, 1956, 26, No 8, 1657-1664

Abstract : An investigation was made of the temperature dependence of the coefficient of secondary electron emission σ for copper, germanium, and tin and of the energy distribution of the secondary electrons for tin. It was found that σ depends little on the temperature. During melting, σ changes abruptly. The study of the distribution of the secondary electrons by energies for tin has shown that the growth of σ for tin in the transition to the liquid state is due fundamentally to the increase in the yield of the truly secondary electrons. Bibliography, 14 titles.

Card : 1/1

BOL'SHOV, V.G.

V. Thermionic Emission at the Solid-Liquid Transition Point. V. G. Bol'shov. *Soviet Physics - Tech. Physics*, No. 6, 1957, pp. 1,123–1,133. 18 refs. Translation. Measurements of the thermionic emission from Cu, Ag, and Ge in the solid and liquid states.

BOL'SHOV, V.G.; ZARUBIN, V.V.

Secondary electron emission of In and Pb in the solid and liquid states. Fiz. tver. tela 1 no.3:462-466 Mr '59.
(MIRA 12:5)

1. Leningradskiy fizikp-tekhnicheskiy institut AN SSSR.
(Indium) (Lead) (Electron emission)

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66291

AUTHORS: Bol'shov, V. G., Dobretsov, L. N., SOV/181-1-11-26/27
Zharinov, A. A., Krachino, T. V., Repnikova, M. K.

TITLE: Emission Properties of Germanium Treated in Cesium Vapors

PERIODICAL: Fizika tverdogo tela, 1959, Vol 1, Nr 11, pp 1768-1770 (USSR)

ABSTRACT: The thermal, photoelectric and secondary electron emissions of monocrystalline n-germanium samples and germanium films were measured in the conventional way. For the germanium films the germanium was deposited by evaporation in vaccum on glass or a tantalum foil and the latter was subsequently treated in cesium vapors. The measuring results are the following: for the germanium film deposited by evaporation on glass and subsequently processed, an increase by 2 orders of magnitude could be established in the electrical conductivity. This points toward a change in volume of the layer. Figure 1 contains the dependence of the real work function φ_T on the temperature of the cathode following a cesium treatment at 800°C cathode temperature and a ≈150°C measuring instrument temperature. If the cathode is heated at T>300°C for a sufficiently long period after the cesium processing and if the cesium vapors are frozen out, one can

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again obtain a φ_m, corresponding to the value of pure germanium. Figure 2 represents the characteristic spectrum distribution of 2 photoelectric elements, whose germanium photoelectric cathodes were treated in the following method: a) germanium was evaporated in a vacuum, precipitated on molybdenum glass, and treated with cesium vapor. The temperature of the vapor and the sample was ~200°C. b) The photoelectric cathode was illuminated through an uviol glass mounted before the sample. Figure 3 contains the course of the secondary electron-emission coefficients σ (measured at room temperature) for the following samples: a) non-treated germanium, b) germanium treated at 150°C in cesium vapor and for several minutes at a sample temperature of ~800°C. Figures 2 and 3 show that, disregarding a certain shift, the basic course of the curves is maintained for both samples. Additional details will be published in the near future. There are 3 figures.

ASSOCIATION: Leningradskiy fiziko-tekhnicheskiy institut AN SSSR (Leningrad, Physico-technical Institute of the AS USSR)

66291

Emission Properties of Germanium Treated in Cesium Vapors

SOV/181-1-11-26/27

SUBMITTED: July 6, 1959

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B006/B063

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24.7600

AUTHORS: Bol'shov, V. G., Vasil'yeva, L. V., Pautova, G. N.

TITLE: The Emission Properties of Silicon Treated in Cesium Vapors

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 8, pp. 1981 - 1983

TEXT: The effect of a treatment with cesium vapors on the electron emission of Ge films and single crystals is known from the papers of Refs. 1 and 2. The present paper deals with the emission of thermal electrons, photoelectrons, and secondaries from germanium films and single crystals. The films were produced by sputtering onto molybdenum- or uviol glass in vacuo. The measuring method and arrangement were the same as described in the paper of Ref. 1. The silicon was treated with cesium at ±130 - 150°C. Fig. 1 shows the spectral characteristics in the incident light of some typical photocathodes with photosensitive layers of different transmissivities. With increasing thickness of the layer, the color changes from light cinnamon to gold. The sensitivity of the photocells slightly decreased during the first hours after their preparation, but later it remained constant. The curves given here refer

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The Emission Properties of Silicon Treated in Cesium Vapors

S/181/60/002/008/043/045
B006/B063

to the stabilized state. Data on the absolute and integral sensitivity and the quantum yield of the photocathodes investigated are listed in a table. Fig. 2 shows the temperature dependence of the true work function, φ_T, for single crystals of pure silicon and of silicon treated with cesium vapors. This treatment was carried out at different vapor pressures and with cathodes of different temperatures. When the vapor pressure was raised, the thermo-current increased with time and attained a constant value between 900° and 1000°C. After this current had become constant, the temperature of the cathode dropped. The coefficient of secondary electron emission, σ, was also measured for silicon layers before and after their treatment with cesium vapors. The experiments show that such a treatment increases σ four or five times. The electron emission properties of silicon treated with cesium vapors are analogous to the properties of germanium likewise treated with cesium. The authors thank Professor L. N. Dobretsov for his interest in this work, as well as A. A. Mostovskiy who made it possible to take the spectral characteristics of the photocells, and V. A. Kozlov for his assistance in the measurements. There are 2 figures, 1 table, and 2 references: 1 Soviet and

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The Emission Properties of Silicon Treated in Cesium Vapors

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B006/B063

1 Swiss.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR Leningrad (Institute of Physics and Technology of the AS USSR, Leningrad)

SUBMITTED: February 3, 1960

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9.3120 (1003, 1137, 1140)

S/109/60/005/008/007/024
E140/E555

AUTHOR: Bol'shov, V.G.

TITLE: Electron Emission of Germanium and Cs-treated Germanium

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.8, pp.1241-1245

TEXT: The work function of a single Ge n-type monocrystal was measured by the total-current method and by the contact difference of potentials method. It was found that the two measurements disagreed, the difference being greater the lower the sample temperature. The temperature curves of the two work functions also differ; the work function measured by contact difference of potentials is practically constant between room temperature and 800°C, whereas if measured by the other method it increases by about 1 eV between 600 and 800°C. Treatment of Ge monocrystals and films in caesium vapour leads to decrease of the total-current work function to about 1 eV; the photosensitivity and secondary emission factors increase. These results agree with those obtained by Schaetti and Baumgartner (Ref.6). However, the resistance of Ge-films deposited on glass varied in a direction opposite to that

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Electron Emission of Germanium and Cs-treated Germanium

observed in Ref.6, the total difference between the two sets of experiments being five orders of magnitude. It is considered that the change in Ge properties in caesium treatment is of a volume character. No explanation is offered for the difference in the two work functions. Acknowledgments are made to L. N. Dobretsov for his attention to the work and to Ya. M. Goncharov, M.V.Repnikova, T. V. Krachino, A. A. Zharinov for their assistance. There are 6 figures, 1 table and 8 references: 2 Soviet and 6 non-Soviet.

SUBMITTED: December 21, 1959

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33153
S/120/61/000/006/022/041
E032/E114

9,3120 (1003, 1138, 1160, 1331)

AUTHORS: Bol'shov, V.G., and Panchenko, O.A.

TITLE: Measurement of the energy distribution of secondary electrons

PERIODICAL: Pribory i tekhnika eksperimenta, no.6, 1961, 108-111

TEXT: The principle of the method is based on the direct measurement of the secondary emission current in the emitter circuit for finite changes in the retarding potential. The apparatus is illustrated schematically in Fig.1. It is in the form of a bridge, two arms of which are formed by the vacuum gap M and the battery $U_п$. The other pair of arms is made up by the electrometer input resistor R_{BX} and the battery U_K (see bottom left-hand corner of Fig.1). The detector diagonal of the bridge is connected to the input of the electrometer tube 2Э2П (2E2P). When the primary electrons have an energy $E_п = eU_п$ a current i_M flows in the circuit of target M. This current is equal to the difference between the primary current $i_п$ and the secondary current

Card 1/6

Measurement of the energy ....

$$i_B = \sigma i_\Pi = i_\Pi \int_{U_3}^{U_\Pi} f(U)\, dU$$

The magnitude of this current and hence the magnitude of $i_M = i_\Pi - i_B$ is a function of the applied voltage U_3. The bridge is balanced by adjusting the compensating voltage U_K for given U_Π and U_3. If now the retarding voltage is altered by a small quantity ΔU_3 then the current in the target circuit is altered by Δi_M which corresponds to electrons with energies between $E_1 = eU_3$ and $E_1 + \Delta E = e(U_3 + \Delta U_3)$. In that case

$$i_M = i_\Pi - i_B = i_\Pi \left(1 - \int_{U_3}^{U_\Pi} f(U)\, dU\right),$$

Card 2/6 ->

Measurement of the energy ....

and

$$\Delta i_M = \Delta i_\Pi \left(1 - \int_{U_3}^{U_\Pi} f(U)\, dU\right) - i_\Pi f(U)\, \Delta U_3 \qquad (1)$$

When $\Delta i_\Pi = 0$ it can be shown that

$$f(U) = - \Delta i_M / i_\Pi\, \Delta U_3. \qquad (2)$$

Δi_M was measured by a valve electrometer whose indications were directly proportional to the voltage drop U_3 across the resistir R_{BX} due to the change in the target circuit current, i.e.

$$f(U) = - U_3 / R_{BX} i_\Pi\, \Delta U_3 \qquad (3)$$

Once Δi_M had been measured the bridgewas rebalanced. The complete distribution curve was obtained by repeating this procedure the required number of times with U_3 varied from 0 to U_Π in steps of 1 V. In order to suppress tertiary electrons

Card 3/6 5

Measurement of the energy ....

the grid N was maintained at a potential of 25 to 50 volts relative to the collector A. At the same time, the grid could be maintained at the required potential U_3 relative to the target, and the magnitude of this potential was controlled by the position of the keys K_2, K_3 and the potential dividers $Д_1$ and $Д_2$. By placing the key K_1 in positions other than I, it was possible to measure the true coefficient of secondary electron emission and the inelastic reflection coefficient as described by the first of the present authors and V.V.Zarudin in Ref.4 (Fiz. tv. tela, v.1, 1959, 462). The apparatus has been used to measure the energy distribution of secondary electrons emitted by n-type germanium. It was found that Δi_M could be measured to within 3 to 4%. It is particularly important to suppress the tertiary electrons and to minimize departures from spherical symmetry due to the cylindrical anode of the gun.

Acknowledgments are expressed to L.N. Dobretsov for valuable advice.

There are 2 figures and 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc. The English language reference reads as follows:

Card 4/6 5

33153
S/120/61/000/006/022/041
E032/E114

Measurement of the energy ...

Ref.1: H.E. Farnsworth, Phys. Rev., v.25, 1925, 41.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR
Physico-technical Institute, AS USSR)

SUBMITTED: March 28, 1961

Card 5/5

S/181/62/004/004/008/042
B108/B102

24.6110
9.3120

AUTHOR: Bol'shov, V. G.

TITLE: Secondary electron emission from GaAs, InSb, and $AuCu_3$

PERIODICAL: Fizika tverdogo tela, v. 4, no. 4, 1962, 885 - 888

TEXT: The secondary electron emission from intermetallic compounds of elements of Groups III and V has hardly been investigated. The author therefore made experiments with the compounds GaAs and InSb and with the alloy $AuCu_3$. The experimental apparatus is described in FTT, 1, 462, 1959. The primary electron beam incided at right angles on the carefully polished (111) face of the crystal examined. The secondary emission properties of GaAs and InSb were found to be similar to those of the semiconductor elements of Group IV. The secondary emission properties of the alloy $AuCu_3$, which was prepared from high-purity Au and Cu, resemble those of its pure metal components. V. N. Toisev and L. N. Chashchina are thanked for measurements, and L. N. Dobretsov for advice. There are 4 figures and 10 references: 4 Soviet and 6 non-Soviet. The four most

Card 1/2

recent references to English-language publications read as follows: I. E. Holliday, E. I. Sternglass. J. Appl. Phys., 28, 1189, 1957; J. B. Johuson, K. C. McKay. Phys. Rev., 93, 668, 1954; E. J. Sternglass. Phys. Rev., 95, 345, 1954; I. Brophy. Phys. Rev., 83, 534, 1951.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR Leningrad (Physicotechnical Institute imeni A. F. Ioffe, AS USSR, Leningrad)

SUBMITTED: November 9, 1961 (initially),
December 21, 1961 (after revision)

34212
S/057/62/032/002/013/022
B124/B102

26.2531

AUTHORS: Bol'shov, V. G., and Zharinov, A. A.

TITLE: Thermionic converter anodes

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 2, 1962, 214 - 219

TEXT: The aim of the present paper was to show that sufficiently low work functions can be obtained with layers formed by evaporating certain high-melting compounds in cesium vapor, which are suitable cathode materials for converters. The mean surface work function of the collector was calculated from $U_o = \varphi - \bar{\varphi}_c$, where the external potential difference U_o is experimentally determined, and the work function $\bar{\varphi}_c$ of the cathode is measured with the setup shown in Fig. 1. It consists of a cylindrical glass bulb with a tantalum or tungsten electrode П attached to the leads of jaw A which collects the evaporation products of the substance examined. A thermocouple made of W and Ta wires with a diameter of 0.15 mm was connected to the tape. The base plate of evaporator И made of Ta, W, or graphite, to which the examined substance has been applied, is attached to two leads

Card 1/4

Thermionic converter ...

of jaw B. The cathode K made of Ta or W wire, 0.15 mm in diameter and about 6 mm long, is placed between the collector and the evaporator at a distance of 1 mm from both. A small flask containing cesium is connected to jaw B and separated from the device by a thin glass diaphragm which, if necessary, is broken with a block. The temperatures of the cathode, evaporator, and collector are usually measured with an optical pyrometer of type ОПИР-09 (OPIR-09). The examined substance, present in the form of a suspension in a nitrocellulose solution in amyl acetate, was applied to the collector side of the evaporator. The setup was degassed by evacuation while keeping it at 400 - 450°C for 20 hrs, and by successive heating of the cathode and the collector to 2100 - 2400°C while heating the evaporator to 1200°C. The final pressure in the system was $5 \cdot 10^{-8}$ mm Hg. The error in measurement was $\pm$ 0.05 ev for $\bar{\varphi}$. The work functions of these products at a collector temperature of about 300°K were $\bar{\varphi}_c$ = 4.4 $\pm$ 0.05 ev. The vapor pressure of cesium was calculated from $\log P = A - \frac{B}{T}$, where A = 6.86, B = 3774, and T is the absolute temperature of the cesium flask. The tangents to the current-voltage characteristics whose slopes determine the cathode temperature are extrapolated until they intersect the line of

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Thermionic converter ...

saturation current. The measured values of saturation currents agree fairly well with those calculated from

$$j = \frac{eP_{Cs}}{\sqrt{2\pi k m_{Cs} T_{Cs}}}, \frac{a}{cm^2} \quad (5),$$ if

the ionization degree of Cs atoms on W is 100%. The work function of the collector for ZrC evaporation products at a constant cesium-vapor pressure of about $1 \cdot 10^{-1}$ mm Hg varied from 1.1 at 480°K to 4.2 at 1600°K. Professor L. N. Dobretsov is thanked. There are 4 figures, 2 tables, and 3 Soviet references.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute imeni A. F. Ioffe, AS USSR, Leningrad)

SUBMITTED: March 27, 1961

Card 3/4 3

L 18866-66 EPF(n)-2/EWT(m)/ETC(f)/EWG(m)/EWP(t) IJP(c) WW/JD/JG/JXT(cz)

ACC NR: AP6007083 SOURCE CODE: UR/0057/66/036/002/0331/0337

AUTHOR: Bol'shov, V. G.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut, AN SSSR)

TITLE: Work function of refractory-metal carbides in cesium vapors

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 2, 1966, 331-337

TOPIC TAGS: thermionic energy conversion, thermionic emission, work function, carbide, refractory alloy, zirconium carbide, uranium alloy, tantalum alloy, niobium alloy

ABSTRACT: A study was made of the thermionic emission of TaC, ZrC, NbC, and UC + ZrC and their evaporation products to determine the extent to which the work function of these materials is affected by prolonged treatment in cesium vapors. The measuring apparatus and the methods of investigation used were described in an earlier paper (Bol'shov, V. G., and A. A. Zharinov, ZhTF, 32, 214, 1962). The experiments showed that, as a result of the treatment, the work functions of the carbides were lower than the work function of cesium. For example, the work function of TaC (4.4 ev) was reduced to 0.8 ev, that of ZrC (3.8 ev) to 1.0 ev, and of powdered NbC (4.1 ev) to 1.2 ev. The author's measurements of the work function of powdered UC + ZrC gave 3.3 ev and 4.9 ev for the material's evaporation products.

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L 18808-66

ACC NR: AP6007083

figures which are significantly higher than those in the literature (3.5—3.7 ev). The author feels further investigations should be made. The value of the work function of the evaporation product of UC + ZrC subjected to the treatment in cesium vapors was measured as 1.1 ev. The experiments also included investigations of the effect of the duration and temperature of the heat treatment on the thermionic emission of the carbides. It is suggested that the sorption of cesium by the investigated materials has a volume character. Orig. art. has: 3 figures and 1 table.

[ZL]

SUB CODE: 20 SUBM DATE: 11Mar65/ ORIG REF: 003/ OTH REF: 003/ ATD PRESS: 4217

Card 2/2

OKOLOVICH, V.N.; BOL'SHOV, V.I.; GORDEYEVA, L.D.; SMIRENKIN, G.N.

Dependence of the mean kinetic energy of fragments on the mass of the fissionable atom. Atom. energ. 15 no.5:419-420 N '63.(MIRA 16:12)

BOL'SHOV, V.I.

Amortization is an important economic tool for improving the utilization of capital assets in the petroleum industry; based on materials of the Tatar A.S.S.R. Trudy KAI 50:65-90 '59.
(MIRA 14:5)

(Tatar A.S.S.R.—Petroleum industry) (Amortization)

BOL'SHOV, V. I.; PROKHOROVA, L. I.; OKOLOVICH, V. N.; SMIRENKIN, G. N.

Some data on the spontaneous fission of Cm^{244}. Atom. energ. 17 no.1:28-34 Jl '64. (MIRA 17:7)

ACCESSION NR: AP4042257 S/0089/64/017/001/0028/0034

AUTHORS: Bol'shov, V. I.; Prokhorova, L. I.; Okolovich, V. N.; Smirenkin, G. N.

TITLE: Some data on the spontaneous fission of Cm^{244}

SOURCE: Atomnaya energiya, v. 17, no. 1, 1964, 28-34

TOPIC TAGS: curium, nuclear fission, fission product, prompt neutron, spontaneous fission, fission cross section

ABSTRACT: In view of surprising violations of the smooth variation, in the case of transplutonium nuclei, of the average kinetic energy of the fragments and of the average number of prompt neutrons per fission event from isotope to isotope, the authors have undertaken to obtain more precise data for the spontaneous fission of Cm^{244} and to analyze the causes of this phenomenon. The average kinetic energy of the fission fragments for spontaneous fission of Cm^{244} was found

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206130011-7"

ACCESSION NR: AP4042257

to be 182.3 ± 2.3 MeV, with a half-width of the distribution 24.8 ± ± 2.5 MeV at half the height and an average number of 2.71 ± 0.4 prompt neutrons per fission event. The kinetic energy was measured by means of a double ionization chamber and comparison with the well established value of the kinetic energy of U^{235} fission by thermal neutrons. The procedure is described in detail. The number of prompt neutrons was determined by recording the coincidences between the pulses of a neutron detector, in which is placed an ionization fission chamber with the investigated substance. The results indicate that the average kinetic energy has low sensitivity to even large changes in the excitation energy and the angular momentum of the compound nucleus. The transcurium nuclei as a rule do not obey the linear variation of the kinetic energy with $Z^2/A^{1/3}$. Attention is called to the correlation between the anomalies in the dependence of E_k and ν on the nucleon composition of the fissioning nucleus and the variation of the most probable fragment masses. A hypothesis that the observed effects are connected with a change in the "elastic"

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ACCESSION NR: AP4042257

properties of the produced fragments is discussed. It is concluded that the individual properties of the produced fragments have a strong influence on the fission process. Although the concrete mechanisms whereby the shells affect different fission methods and their characteristics are unknown, a likely conclusion is that the direct influence of the nuclear shell structure on the dynamics of fission is one of the most important factors. "The authors are grateful to A. G. Kozlov, V. B. Pavlovich for preparation of the Cm^{244} compounds, Z. A. Aleksandrova for participation in individual stages of the work, and N. Ye Fedorova and Yu. M. Turchin for help with the measurements." Orig. art. has: 5 figures and 4 formulas.

ASSOCIATION: None

SUBMITTED: 23Oct63 ENCL: 01

SUB CODE: NP NR REF SOV: 008 OTHER: 017

Card 3/4

ACCESSION NR: AP4042257

ENCLOSURE: 01

Dependence of average fragment kinetic energy on the parameter $Z^2/A^{1/3}$

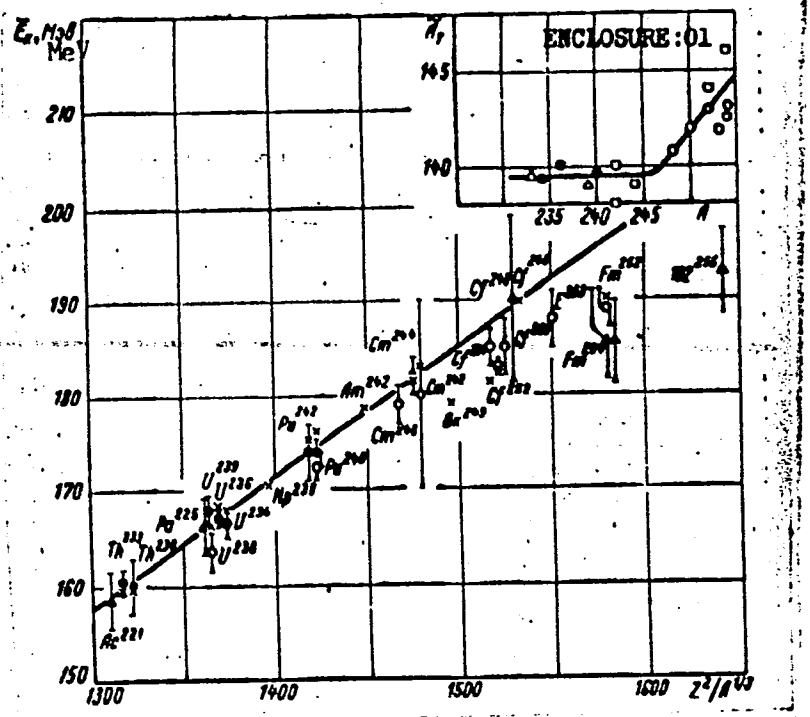
($E_k = 0.140Z^2/A^{1/3} - 24.5$ MeV)

o - spontaneous fission

●, ▲ - fission by neutrons and ions

× - values calculated from balance equation

Insert - dependence of most probable mass of heavy fragment on the mass of the fissioning nucleus, as obtained by others



Card 4/4

Bol'shov, V.

107-12-40/46

AUTHOR: Bol'shov, V. (Odintsovo RR station, Kalinin RR)

TITLE: Suppressed-Zero Voltmeter
(Vol'tmetr s rastyanutoy shkaloy)

PERIODICAL: Radio, 1956,Nr12, p. 56 (USSR)

ABSTRACT: A suggestion to measure the power-supply a-c voltage by means of a d-c milliammeter in series with a neon lamp and a resistor is offered.

As conduction in the circuit begins only after the lamp firing, the milliammeter begins deflection only when the circuit voltage rises beyond approximately 100 v. Calibrated in volts it can serve as a suppressed-zero voltmeter. A greater accuracy in the effective range is claimed.

Three figs in this short article.

AVAILABLE: Library of Congress

Card 1/1

107-57-1-42/60

AUTHOR: Svoren', R. and Bol'shov, V.

TITLE: New-Tube Superheterodyne Receiver (Supergeterodin na novykh lampakh)

PERIODICAL: Radio, 1957, Nr 1, pp 38-40 (USSR)

ABSTRACT: Developed from specifications of the "Radio" journal, this superheterodyne receiver is similar in its basic characteristics to second-class commercial receivers, such as "Baltika," "Ural," and "Baku," but has only three electron tubes. The receiver operates in three bands: long-wave, 750-2,000 m; medium-wave, 187-578 m; and shortwave, 16-49 m. The sensitivity is 150 μv or better for long and medium waves, and 200 μv or better for shortwaves. The output is 2-4 w; power consumption is about 45 w. The receiver is designed with two 6I1P and one 6P14P tubes, two DG-Ts4 semiconductor diodes (detector and AGC rectifier), and four DG-Ts26 semiconductor diodes (anode-voltage rectifier). A complete circuit diagram, parts data, instruction for winding coils and transformers, and construction details are supplied. There are 5 figures in the article.

AVAILABLE: Library of Congress

Card 1/1

107-57-2-49/56

AUTHOR: Bol'shov, V.

TITLE: Ferroresonant Voltage Stabilizers
(Ferrorezonansnyye stabilizatory napryazheniya)

PERIODICAL: Radio, 1957, Nr 2, pp 55-56 (USSR)

ABSTRACT: This ferroresonant stabilizer is intended for supplying radio equipment with power up to 250 w, and is designed for connecting to a supply-line voltage of 127 or 220 v. The stabilizer comprises two ferroresonant chokes and a bank of capacitors connected across one of the chokes. Its advantages are: simple construction, standard transformer-steel punchings for the cores, insensitivity to short circuits in the load circuit, and sinusoidal output voltage up to full load. Chassis size is 160 x 315 x 60 mm. A circuit diagram, parts data, instructions for winding and assembling choke coils, instructions for adjustment, and characteristics of the stabilizer are supplied.

There are 3 figures in the article.

Card 1/1

107-57-3-37/64

AUTHOR: Bol'shov, V.

TITLE: Measuring Instruments Using Neon Lamps
(Izmeritel'nyye pribory s neonovymi lampami)

PERIODICAL: Radio, 1957, Nr 3, pp 33-34 (USSR)

ABSTRACT: A series of simple measuring instruments, developed from specifications given in the "Radio" journal, are described: voltmeters up to 1,000 volts, resistance meter (from 10 ohms to 10 megohms), capacitance meter (from 10 μμf up to 10 μf), signal generator for checking radio receivers. To stabilize the breakdown voltage of a neon lamp, it should be trained for 70-100 hours at a constant voltage exceeding its breakdown voltage. A voltmeter for 50 to 1,000 volt range is, in fact, a simple voltage divider, a part of which is connected to the neon lamp whose breakdown potential is accurately known. Setting the sliding contact of the divider, so that the lamp just fires, and knowing the arms of the divider at that point, it is easy to compute the voltage being measured. A modification of the same circuit permits measuring the voltage of a few volts or a few dozen volts. The input resistance of the neon-lamp voltmeter is from 2 to 10 megohms. For resistance measurements, a conventional

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Measuring Instruments Using Neon Lamps

bridge circuit fed by a neon-lamp 1,000-cps oscillator is recommended. The oscillator can operate on a suitable B-battery because its drain is under 0.5 ma. The DC power supply for the oscillator (or for the above voltage measuring circuit) can be taken from the anode circuit of a radio receiver by means of a simple, easy-to-make tube adapter. A simple miniature signal generator can also be designed with a neon tube. Such a relaxation signal generator permits checking not only AF but also RF circuits of a radio receiver. To detect a faulty stage in the receiver, the signal generator should be connected in succession to the control grids of the tubes (starting from the final tube). Thus, a faulty AF or RF stage can be easily detected. The signal generator can also help in tuning oscillatory circuits of radio equipment.
There are two figures in the article proper and illustrations on the page facing p 33.

Card 2/2

107-57-4-18/54

AUTHOR: Bol'shov, V., and Furin, V.

TITLE: A Low-frequency Amplifier (Usilitel' nizkoy chastoty)

PERIODICAL: Radio, 1957, Nr 4, p 23 (USSR)

ABSTRACT: This amplifier has been designed using specifications of the "Radio" journal. It uses a modern type 6P14P pentode, and its circuit is adapted to utilize the advantages of this tube. The two-stage amplifier uses one type 6Zh3P tube in the first stage and one 6P14P tube in the final stage. Resistance coupling allows the use of a deep (about 30 db) negative feedback. Voltage amplification of the first stage is about 400. Chassis dimensions are 160 x 215 mm. The amplifier develops a 3-watt output at less than 1% distortion with an input voltage of 0.1 volt. The circuit diagram, a frequency characteristic, and parts data are given.
There are two figures in the article.

Card 1/1

107-57-5-51/63

AUTHOR: Svoren', R., Bol'shov, V.

TITLE: A Universal Measuring Instrument (Universal'nyy izmeritel'nyy pribor)

PERIODICAL: Radio, 1957, Nr 5, pp 46-50 (USSR)

ABSTRACT: A multipurpose instrument for measuring voltages, currents, and resistances, incorporating also an a-f oscillator and a r-f oscillator, is described. The do-it-yourself type instrument consists of three units: an avometer, an a-f oscillator, and a r-f oscillator. The avometer comprises a galvanometer and a two-stage transistor d-c amplifier supplied by a 4.5-v battery. Avometer ranges are: 1, 2.5, 5, 10, 25, 50, 100, 250, 500 volts; 1, 2.5, 5, 10, 25, 50, 100, 250, 500 milliamperes; 20, 200 ohms, 2, 20, 200 kilohms, 2, 200 megohms, all at the middle of the scale. Transistor two-stage RC a-f generator develops about 2-3 v output voltage at any frequency between: 20-200, 200-2,000 cps, 2-20 kc. Transistor one-stage r-f generator produces three frequencies: 100, 450, 1,000 kc; they can be somewhat adjusted by a variable capacitor. Size of the cabinet 190x133x80 mm. A complete circuit diagram, parts data, and do-it-yourself instructions are supplied.

There are 5 figures in the article.

AVAILABLE: Library of Congress

Card 1/1

BOL'SHOV, V., konstruktor radiolyubitel'.

Time relays. IUn.tekh. no.8:33-34 Ag '57. (MLRA 10:8)
(Electric relays)

Bolshov, V

AUTHORS: Bol'shov V. and Svoren' R. 107-8-49/62

TITLE: Automatic Photo-Printing Devices (Ustanovki dlya avtomatizatsii fotopechati).

PERIODICAL: Radio, 1957, # 8, pp 51-54 and p 3 of the cover (USSR)

ABSTRACT: This article deals with automatic photo-printing devices, which can be used by radio amateurs. All these electronic systems contain time-relays. Any electro-magnetic time-relay, the working current of which does not exceed 20-25 ma, can be used for this purpose (for instance: the "РСМ-2" type).

The "МН-3" neon-tube and the photo-magnifier are connected with the time-relay. Power is supplied either by dry cell batteries, directly by the network or by means of a simple rectifier with an adapter of an ordinary radio receiver, containing one of the following output-tubes: "6П6С", "6П3С" or "30П1М".

The "Д7-Ц25", "Д7-Ц26" or "Д7-27" germanium diodes can be utilized in the rectifier, as well as a selenium column consisting of 18 disks of 18 mm diameter and more.

Card 1/3 The time-relay represents one structural unit of such a system,

TITLE: Automatic Photo-Printing Devices (Ustanovki dlya avtomatizatsii fotopechati).

107-8-49/62

another one being represented by the exposure meter, which, principally, consists of a photo vacuum-tube of "СЦВ-3", "СЦВ-4" or "СЦВ-5" type and others.

The main characteristic line of all these photo vacuum-tubes is the proportionality between the intensity of illumination and the light flux and photoelectric current.

For obtaining a higher accuracy, a "СГ-П" voltage-stabilizer is used.

One of the triodes of the "6Н1-П" tube serves as kenotron. The "6Н1-П" tube can be replaced by any twin triode with separate cathodes or by an amplifier tube used together with a selenium rectifier or a germanium diode. Also a "6Н8С" tube can be used for this purpose.

Instead of a needle-indicator of an exposure meter, a "6Е5С" electron-optical tuning-indicator or still better a "6Е1П" can be utilized.

Card 2/3

Any radio power transformer for instance a "РЕКОРД" or "АР3" type, can be utilized for power supply.

TITLE: Automatic Photo-Printing Devices (Ustanovki dlya avtomatizatsii fotopechati). 107-8-49/62

This article contains 6 figures, 3 photos and 1 Russian reference.

INSTITUTION: Not indicated.

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress

Card 3/3

BOL'SHOV, V.

Power supply unit. Radio no.9: Supplement. 12-21 S '57. (MIRA 10:10)
(Radio--Equipment and supplies)

BOL'SHOV, V.

Resonance measurement with the aid of a radio receiver. Radio no.10:41-42 O '57. (MIRA 10:10)

(Radio measurements)

BOL'SHOV, V.

Electron tube voltmeter. Radio no.11:Supp.17-30 N '57. (MIRA 10:10)
(Voltmeter)

9(2) PHASE I BOOK EXPLOITATION SOV/3324

Bol'shov, Vladimir Mikhaylovich

Elektronnyye rele vremeni (Electronic Time Relays) Moscow, Gosenergoizdat, 1958. 47 p. (Series: Massovaya radiobiblioteka, vyp. 307) 65,000 copies printed.

Ed.: F. I. Tarasov; Tech. Ed.: N. I. Borunov; Editorial Commission: A. I. Berg, F. I. Burdeynyy, V. A. Burlyand, V. I. Vaneyev, Ye. N. Genishta, I. S. Dzhigit, A. M. Kanayeva, E. T. Krenkel', A. A. Kulikovskiy, A. D. Smirnov, F. I. Tarasov, and V. I. Shamshur.

PURPOSE: This booklet is intended for radio amateurs and for specialists engaged in introducing electronics into the national economy.

COVERAGE: The author outlines the principle of operation of electronic time relays; he describes their calculation and presents a short description of practical circuits of time relays of varying complexity. No personalities are mentioned. There are no references.

Card 1/3

TABLE OF CONTENTS:

AVAILABLE: Library of Congress (TJ223.T5B6)

Card 3/3

JP/fal
5-4-60

BOL'SHOV, V.

[redacted] ionization chamber. IUn.tekh. 2 no.1:9-11 Ja '58. (MIRA 11:1)
(Ionization chambers)

AUTHORS: Anatolich, R., Bol'shov, V. SOV/107-58-2-24/32

TITLE: A Signal Generator (Generator signalov)

PERIODICAL: Radio, 1958, Nr 2, p 42 - 44 (USSR)

ABSTRACT: The article contains a description of a very simple signal generator for the 100 kilocycle to 30 megacycle range which may be built and used by a beginning radio amateur. The function of this one-tube generator is explained in detail and accompanied with instructions for building it. The conclusion of this article will appear in the next issue of this periodical. There are nine sets of diagrams and two Soviet references.

1. Signal generators--Design

Card 1/1

AUTHORS: Anatolich, R.; Bol'shov, V. 107-58-3-29/41

TITLE: Signal Generator (Generator signalov)

PERIODICAL: Radio, 1958, Nr 3, pp 41 - 44 and p 47 (USSR)

ABSTRACT: The description of a very simple signal generator containing one "6N8S" tube is continued. The first part was published in "Radio", 1958, Nr 2, pp 42 - 44, under the same heading. The signal generator has a frequency range from 100 kilocycles to 30 megacycles and is to be used for tuning amateur receivers. This article contains details on the circuit arrangement, tuning, and instructions for assembly written especially for radio amateurs. The device was developed by order of this journal. There are 2 circuit diagrams, 1 table, 7 diagrams and 9 drawings.

1. Signal generators--Characteristics

Card 1/1

AUTHOR: Bol'shov, V.

SOV-107-58-9-26/38

TITLE: A Tube Avometer Based on a TT-1 (Lampovyy avometr na baze TT-1)

PERIODICAL: Radio, 1958, Nr 9, pp 40 - 42 (USSR)

ABSTRACT: The apparatus is a two-tube adapter to convert a normal TT-1 avometer into a tube avometer. It is fed from the ac grid at 127/220 v and has a consumption of not more than 12 w. The basic unit is a dc voltmeter arranged in a bridge circuit and balanced so that normally there is no current in the galvanometer. Balancing is carried out before every measurement, by means of a zeroing potentiometer. Full needle deflection at 250 μa is achieved with an input of 1 v. For measuring voltages above one volt, one of the series of voltage dividers is switched in, reducing the input voltage by 2, 5, 10, 25, 100, 250 or 1,000 times. In measuring AF and RF ac voltages, the signal is first passed through a separate rectifying unit, consisting of a transistor triode and smoothing filter, and through a separate voltage divider. To measure a resistor, a voltage, rectified by a transistor triode in the unit, is induced across the resistor under test which is then matched against one of the reference resistors. Capacitance can be measured by feeding an ac voltage gen-

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erated in the unit to the capacitor and one of the reference resistors connected together in series. The resulting voltage drop is proportional to the capacitance. It is amplified, rectified and measured on the dc voltmeter, with the scale recalibrated in μfds. A method of offsetting the capacitance error is described. Inductance is measured in a similar manner but the inductance scale is non-linear. The power unit uses half of a double triode as a half-wave rectifier for HT voltage. Power for heating the tube filaments is drawn from LT tappings on the power transformer. Details of the construction and aligning schemes are given. The tube avometer can measure: 1) dc voltages from 50 mv - 1 kv and up to 10 kv with an additional extension resistance, 2) RF ac voltages (to 100 Mc) up to 100 v, 3) resistance from 1 ohm to 1,000 Mohm, 4) capacitance from 5 pf to 25 fd, 5) inductance (at 50 c) from 1 Henry to 1 kH. When no TT-1 avometer is available the adapter could be built as a complete, independent tube instrument using a milliammeter of 200 μa

sensitivity. In this case the device could include a tube rectifier for measuring ac voltages up to 1,000 v and a multi-range ammeter. There are 5 circuit diagrams and 1 figure.

1. Voltmeters--Design 2. Voltmeters--Performance

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AUTHOR: Bol'shov, V.

SOV/107-[illegible]-11-25/40

TITLE: Pseudostereophonic Sound Reproduction (Psevdostereofonicheskoye zvukovosproizvedeniye)

PERIODICAL: Radio, 1958, Nr 11, pp 39-41 (USSR)

ABSTRACT: The author states that tests carried out in the USSR in 1957 by I.Ye. Coron showed that good transmission of 3-D sound is possible with only 3 or even 2 channels. However, the transmission of true stereophonic sound is practically impossible with the present one-channel system of radio broadcasting. So-called pseudostereophonic sound-reproducing systems were therefore developed: the two systems at present in use are the following: (1) splitting up the frequency bands reproduced into 2 or 3 channels; (2) time delay of the signal in the l-f amplifier with a concentrated acoustic system. After describing these systems, the author discusses various l-f amplifier circuits. One of the simplest and most effective is the "stereodyne" system (Fig. 1), in which two speakers are connected up to the secondary winding of the output transformer: one is connected directly to one half of the winding and the other has one lead connected to the center point of the output transformer and the other to the phase-shifting iterated

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network. The effect produced on the listener is described and shown in Figure 2. Figure 3 shows a principal l-f amplifier circuit in which the time shift and the frequency separation are effected in the preliminary amplifier by RS filters after a compensated volume control. The principal circuit of a more complicated two-channel l-f amplifier is illustrated in Figure 4. The signal voltage passes through the h-f and l-f tone regulator and the compensated volume control to the input of a two-cycle l-f amplifier. An interesting feature of this amplifier is that it incorporates an additional "3-D sound" regulator switched into the negative feedback circuit. An interesting circuit of a converter is shown in Figure 5: it can be connected after any voltage source of sound frequency. The article concludes with a description of the use of electro-acoustic time delay systems.
There are 4 circuit diagrams and 1 diagram.

BOL'SHOV, Vladimir Mikhaylovich; BOL'SHOV, Yuriy Mikhaylovich; PETROV, V.A., red.; VORONIN, K.P., tekhn.red.

[Simple designs for the beginning radio amateur] Prostye konstruktsii nachinaiushchego radioliubitelia. Moskva, Gos. energ.izd-vo, 1959. 71 p. (Massovaia radiobiblioteka, no.346). (MIRA 13:6)

(Radio--Receivers and reception)

BOL'SHOV, V., red.; GRIGOR'YEVA, A.I., red.; BLAZHENKOVA, G.I., tekhn.red.

[Receivers and amplifiers] Priemniki i usiliteli. Moskva, Izd-vo DOSAAF, 1959. 31 p. (Biblioteka zhurnala "Radio," no.5) (MIRA 13:1)
(Radio--Receivers and reception) (Radio amplifiers)

BOL'SHOV, V.

Amplifier for a tape recorder. Radio no.6:53-56 Je '60.
(MIRA 13:7)

(Amplifiers (Electronics))
(Magnetic recorders and recording)

BOL'SHOV, V.

Low-frequency amplifiers. Radio no.7:47-51 Jl '60.
(MIRA 13:7)
(Amplifiers (Electronics))

SONIN, Yevgeniy Konstantinovich; BOL'SHOV, V.M., red.; SHIROKOVA, M.M., tekhn. red.

[Transistorized measuring devices for amateur use] Liubitel'skie izmeritel'nye pribory na tranzistorakh. Moskva, Gosenergoizdat, 1961. 39 p. (Massovaia radiobiblioteka, no.427)
(MIRA 15:5)

(Electric meters) (Radio measurements)

BOL'SHOV, Vladimir Mikhaylovich; SMIRNOV, V.I., red.; SHIROKOVA, M.M., tekhn.red.

[Low-frequency amplifiers] Radioliubitel'skie usiliteli nizkoi chastoty. Moskva, Gos.energ.izd-vo, 1961. 126 p. (Massovaia radiobiblioteka, no.422) (MIRA 14:12)
(Amplifiers (Electronics))

CHUGAYEV, Yuriy Gennadiyevich; PLISKO, Valeriy Antonovich; BAVAROV, V.A.; BOL'SHOV, V.M.; GRACHEV, S.N.; PASHKOV, A.A.; KACHKO, A.I.; PLATONOV, S.A., polkovnik, red.; MEDNIKOVA, A.N., tekhn. red.

[Electronic digital computers]Elektronnye tsifrovye vychislitel'nye mashiny. Moskva, Voenizdat, 1962. 405 p. (MIRA 16:1)
(Electronic digital computers)

CHUGAYEV, Yuriy Gennadiyevich; PLISKO, Valeriy Antonovich; BAVAROV, S.F.; BOL'SHOV, V.M.; GRACHEV, S.N.; PASHKOV, A.A.; KACHKO, A.I.; PLATONOV, S.A., polkovnik, red.; MEDNIKOVA, A.N., tekhn. red.

[Electronic digital computers]Elektronnye tsifrovye vychislitel'nye mashiny. Moskva, Voenizdat, 1962. 405 p. (MIRA 16:2)
(Electronic digital computers)

BOL'SHOV, Vladimir Mikhaylovich; STROYEV, A.P., red.; BUL'DYAYEV, N.A., tekhn. red.

[Adjustment of radio receivers] Nalazhivanie radiopriemnikov. Moskva, Gosenergoizdat, 1963. 63 p. (Massovaia radiobiblioteka, no.457) (MIRA 16:6)
(Radio--Receivers and reception)