"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYASELEVA, S.M.

Effect of various penicillin preparations on Treponema pallidum. Report No.1: Effect of penicillin on cultured Treponema pallidum. Zhur.mikrobiol.epid. i immun. 28 no.4:106-109 Ap '57. (MLRA 10:10)

1. Iz kafedry mikrobiologii TSentral'nogo instituta usovershenstvovaniya vrachey i kafedry mikrobiologii Kazanskogo instituta usovershenstvovaniya vrachey imeni V.I.Lenina.

(TREPONEMA PALLIDUM, eff. of drugs on penicillin on cultured strains)
(PENICILLIN, on cultured strains of Treponema pallidum)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYASEYELEVA, S. M.

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Khimiya i Primeneniye Fosfororganicheskikh Soyedineniy (Chemistry and Application of Organophosphorus Compounds) A. Ye. Arbuzov, Ed. publ. by Kazan' Affil, Acad. Sci. USSR, Moscow, 1962 638pp.

Collection of complete papers presented at the 1959 Kazan Conference on Chemistry of Organophosphorus Compounds.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

V"YASKOVA, M.G.

Dynamics of the changes of total protein and protein fractions in children during the period of infancy. Nauch. trudy Kaz gos. med. inst. 14:403-404 '64. (MIRA 18:7)

1. Kafedra gospital'noy pediatrii (zav. - prof. A.Kh. Khamidullina) Kazanskogo meditsinskogo instituta.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATCHENKO, S.I.

Laboratory-type two-drum scutching machine. Biul.tekh.-ekon. inform.Gos.nauch.-issl.inst.nauch.i tekh.inform. no.9:49-50 '62. (MIRA 15:9)

(Textile machinery)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATCHENKO, V.S., vrach (Kiyev)

Pathoanatomical diagnosis of epulides. Probl. chel.-lits. khir. no.1:196-198 '65. (MIRA 18:10)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATCHANNIKOV, K. A. Cand Med Sci -- (Medical prophylaxis and therapy of poisonnings caused by systemic insecticides (octamethyl, and systox-type preparations)," Minsk, 1960, 23 pp, 225 cop. (Omsk State Medical Institute im Kalinin. Minsk State Medical Institute) (KL, 42-60, 116)

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VYATCHANNIKOV, K.A.

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Khimiya i Primeneniye Fosforoorganicheskikh Soyedineniy (Chemistry and Application of Organophosphorus Compounds) A. Ye. Arbuzov, Ed. publ. by Kazan' Affil, Acad. Sci. USSR, Moscow, 1962 632pp.

Collection of complete papers presented at the 1959 Kazan Conference on Chemistry of Organophosphorus Compounds.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

S/081/62/000/001/015/067
B156/B101

AUTHORS: Verkhovod, B. N., Kozhbanova, M. O., Dedeshko, M. P., Vyatchennikova, N. V.

TITLE: Spectrochemical determination of certain rare earths using the ДФС-3 (DFS-3) spectrograph

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 1, 1962, 143, abstract 1D67 (Tr. In-ta geol. nauk KazSSR, v. 4, 1961, 136-138)

TEXT: Rare earth elements (REE) are separated by chemical methods from the corresponding minerals, solutions of which are so treated as to produce the REE in the form of oxalates (the chemical treatment technique is not described). The REE mixture is first diluted in 10-50 times the amount of carbon powder, and then in twice the amount of a powder containing 0.2% Sc as an internal standard. Standards are made from REE oxides on a $CaCO_3$ base. The powders are placed in a hole 4 mm in diameter and 4 mm deep in the lower carbon electrode (the wall thickness remaining is 0.5 mm); the

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Spectrochemical determination of ...

upper electrode is conical in shape. The spectra are excited in an a.c. arc discharge at 10-12 a. The analysis gap is 3 mm and the exposure time 5 min. The spectra are photographed using a DFS-3 diffraction spectrograph in the 3000-3500 Å region (it has a 0.02 mm slot). The following elements are determined at concentrations between 0.003 and 3.0%: Y, La, Ce, Nd, Sm, Gd, Tb, Dy, Ho, Er, Yb, Lu. Possible superpositions of lines are indicated: [Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

RUSAKOV, G.K., nauchnyy sotrudnik; MILYAVSKIY, I.O., nauchnyy sotrudnik; ARINA, A.Ye., nauchnyy sotrudnik; PANKOVA, K.I., nauchnyy sotrudnik; KHABAROV, N.F., nauchnyy sotrudnik. Prinimali uchastiye: PAVLOVA, N.G.; VYATCHININA, V.G.; VARFOLOMEYEVA, M.M. TIKHONOVA, Ye.M., red.; GUREVICH, M.M., tekhn.red.; DEYEVA, V.M., tekhn.red.

[Economic accountability on collective farms; regulations and methods of introduction] Vnutrikhozisistvennyi raschet v kolkhozakh; primernoe polozhenie i metodika vnedreniia. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1960. 71 p. (MIRA 14:1)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut ekonomiki sel'skogo khozyaystva. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut ekonomiki sel'skogo khozyaystva (for Rusakov, Milyavskiy, Arina, Pankova, Khabarov).
(Collective farms--Accounting)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATER, Ya.

Reconstructing the firebox of a steam engine. Muk.elev.-prom. 23 no.1:30 Ja '57. (MLRA 10:5)

1.Kryzhopol'skiy elevator Vinitskaya oblast'.
(Portable engines)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

BOYAROV, A.I.; VYATICH, L.A.; KLEYMENOV, Yu.V.; OVCHARENKO, G.I.

New recording profilometer. Stan.i instr. 32 no.2:16-19 F '61. (MIRA 14:2)

(Surfaces (Technology)—Measurement)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A.

VYATKIN, [redacted]

New houses for collective farmers on new settlements. Sel'.stroi. 11 no.3:9-10 Mr '57. (MLRA 10:5)

1. Ispolnyayushchiy obyazannosti nachal'nika Chitinskogo oblastnogo upravleniya po stroitel'stvu v kolkhozakh.
(Chita Province--Housing, Rural)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A.

36217

Ispol'zovaniye stankov ATS - 5M. Tekstil. prom-st', 1949, No. 11, s. 38-39

SO: Letopis' Zhurnal'nykh Statey, No. 49, 1949

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A.

Standardization and unification are the important conditions for the economy of communal labor. Sots. trud 8 no.9:12-19 S '63. (MIRA 16:10)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A.I.

Information. Tekst. prom. 24 no.11:80-83 N '64. (MIRA 17:2)

1. Direktor Ivanovskogo melanzhevogo kombinata imeni Proleva.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A. I.

Textile Machinery

Utilizing new automatic equipment. Tekst. prom. 12 No. 6 1952.

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

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A.I.

IVANOVA, M.N.; VLASOV, P.V., CHERNYSHEV, P.F.; VYATKIN, A.I., retsenzent; KUPRIYANOVA, F.S., redaktor; GUSEVA, Ye.M., redaktor; NEKRASOVA, O.I., tekhnicheskiy redaktor

[Work organization for assistant foremen servicing automatic cotton looms (AT-100, ATS-5 and N)] Organizatsiia truda pomoshshchnikov mastera, obsluzhivaniushchikh avtomaticheskie tkatskie stanki v khlopchatobumazhnoi promyshlennosti (AT-100, ATS-5 i N) Pod red. F.S.Kupriianova. Moskva, Gos. nauchno-tekhn. izd-vo Ministerstva promyshl. tovarov shirokogo potrebleniia SSSR, 1954. 166 p. (MLRA 8:4)
(Looms)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A.M.

Measuring true heat capacity of glasses, of silver iodide, and of AgI-KI eutectic melt in the temperature range of 50-300°. A. M. Benderovich and A. M. Vyatkin. [illegible], No. 32, 203-9, Referat. Zhur., Trudy [illegible]. Fiz.-Tekh. Inst., Tomsk, Un-t. [illegible] Fiz. [illegible], No. [illegible]—In a study of [illegible] thermal analysis is usually made by taking the heating and cooling curves, the form of which depends to a great degree on the heat capacity. A thermal analysis of a glass was made by measuring the temp. relation of its heat capacity. Heat capacity was measured in a brass calorimeter contg. a powd. sample, a constantan heater, and a thermocouple. The calorimeter was placed in a thermostat, the temp. of which was kept const. within 1°, temp. fluctuations in the sample being not more than 0.2°. Heat capacity of the empty calorimeter was detd. by measuring the heat capacity of the calorimeter filled with powd. β-quartz, heat capacity of which was known. Heat capacity from 80° to 240° was measured for 3 samples of K silicate glass with compn. of K_2O 20, SiO_2 80 mol.% (heated 205 and 963 hrs. at 620°), and for a sample of Na silicate glass with compn. of Na_2O 23, SiO_2 77 mol.%. The error of measurement did not exceed 12%. In the change of heat capacity no anomalies were observed in any sample; this indicates the absence of noticeable amts. of SiO_2, since phase conversions in free SiO_2 would cause anomalous absorption of heat. The sensitivity of the method was insufficient for a conclusion concerning presence of SiO_2 in the sample of soda glass. When heat capacity of powd. AgI was measured at 145.0°, a sharp heat-capacity max. was observed, corresponding to a polymorphous β→α conversion. Heat capacity of a AgI-KI eutectic melt was measured close to 145.0°. The absence of an anomalous absorption of heat is considered proof of the existence of the chem. compd. $(AgI)_2KI$ in the system.

Marjorie Ketner

(Clipped Abstract)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

SOV/137-57-10-18626

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 10, p 23 (USSR)

AUTHORS: Presnov, V.A., Vyatkin, A.P.

TITLE: The Electrical Conductivity of Magnesite Refractories at Elevated Temperatures (Elektroprovodnost' magnezitovykh ogneuporov pri vysokikh temperaturakh)

PERIODICAL: Tr. Sibirsk. fiz. tekhn. in-ta pri Tomskom un-te, 1956, Nr 35, pp 268-273

ABSTRACT: An investigation is made of the conductivity versus temperature relationships in the 100-900°C range of periclase high refractories of three types, namely, simple magnesite, magnesite with additions, and fused magnesite. The materials investigated have greater resistivity than P at temperatures of under 1000°. Refractories of burnt magnesite demonstrate a semiconductor type of conductivity, while fused magnesite is dielectric. The samples were metallized by soldering to metal.

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VYATKIN, A.P.

57-6-8/36

AUTHOR VYATKIN, A.P., EYCHIN, V.A.

TITLE On the Origin of the Fluctuation of Crystal Triode Parameters. II. n-p-n Triodes. (K voprosu o prichinakh, vyzyvayushchikh razbros parametrov kristallicheskikh triodov. II. Triody n-p-n-tipa. Russian)

PERIODICAL Zhurnal Tekhn. Fiz. 1957, Vol 27, Nr 6, pp 1205 - 1208 (U.S.S.R.)

ABSTRACT

In the present case investigations are carried out which are similar to these described in Part I (Zhurnal Tekhn.Fiz. 1957, Vol 27, Nr 6, pp 1197) for the triodes of the n-p-n-type. At first donator alloys were selected, for which purpose investigations were carried out with Bi-Pb, Bi+Sn, As-Pb, Sb-Sn, Sb-Pb. It was found that, with respect to the rectifier coefficient, lead-antimony-, and lead arsenic alloys are the best. Further experiments were carried out with a Pb-Sb alloy with eutectic composition (11,2 % Sb). There follows a description of experimental data. It is shown that it is best to produce triodes of the n-p-n type at 700 ° C. At this temperature a considerable dependence of the penetration depth on temperature is observed. Therefore even slight changes of temperature may lead to the fluctuation of some parameters of the triodes. Fluctuation may be to the extent of + 20 %. A general diagram for the determination of the average values of the penetration depth of the Pb-Sb alloy into the germanium is given. The totaliy of the results mentioned her makes it possible quantitatively to characterize a number of factors which exercise influence on some of the crystal-

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57-6-8/36

On the Origin of the Fluctuation of Crystal Triode Parameters.
II. n-p-n Triodes.

triode parameters, and also makes it possible in advance to calculate the manner of producing the triodes of the n-p-n type. (With 5 illustrations and 3 Slavic references).

ASSOCIATION SFTI, Tomsk
PRESENTED BY
SUBMITTED 26.1.1957
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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A.P.

AUTHOR VYATKIN, A.P. 57-6-7/36

TITLE On the Origin of the Fluctuation of Crystal Triode Characters. I. p-n-p Triodes. (K voprosu o prichinakh, vyzyvayushchikh razbros parametrov kristallicheskikh triodov. I.Triody p-n-p tipa -Russian)

PERIODICAL Zhurnal Tekhn.Fiz.,1957,Vol 27,Nr 6,pp 1197-1204(U.S.S.R.)

ABSTRACT A number of factors, which are connected with the process of the formation of electron-hole transitions in plane crystal triodes and diodes, were investigated. First the moistening of Germanium by means of Indium is dealt with. Plane parallel p-n transitions are demanded for increasing the operation frequency.The author shows that for their formation the smelting of Indium in Germanium has to be carried out at temperatures above 400°C, most effectively at 550°C.There are, however, a number of difficulties connected with this temperature.The process of moistening is more complicated than in the case of moistening a solid substance with a liquid, because here germanium dissolves in indium. The form and the composition and the surface energies change continuously with rising temperature. The investigation was carried out on n-germanium sheets according to the method of frozen drops. The investigation of the depth of penetration of Indium into Germanium is dealt with in the second part. The dependence of this depth on the temperature, on the time of fusion as well as on the relative indium weight (p/S, where P is the weight of the Indium to be fuded and S the surfade of fusion) is investigated. The results

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On the Origin of the Fluctuation of Crystal Triode Parameters. I. p-n-p Triodes. 57-6-7/36

of the investigations shown in diagrams show a satisfactory coincidence with the data of calculation. A nomograph is given by means of which the depth of penetration can be changed by varying the temperature and the balanced-up quantity of Indium. The change of temperature, time and relative weight are shown to be the reasons of the fluctuation of parameters. The author offers the possibility of estimating the influence of these factors and to calculate in advance the manner of producing of the triodes. In conclusion data on the form of the p-n transitions are given.
(14 illustrations and 4 Slavic references).

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SUBMITTED 26.1.1957
AVAILABLE Library of Congress.
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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A.P.

AUTHOR: Vyatkin, A.P. (Engineer) 90-3-2/26

TITLE: On the use of hydraulic couplings as regulating devices. (Ob ispol'zovanii gidromuft v kachestve reguliruyushchikh organov.

PERIODICAL: Teploenergetika, 1958, No.3. pp. 10 - 11 (USSR)

ABSTRACT: One of the main reasons for the excessive power consumption of draught fan drives is the low efficiency of methods of regulating their outputs. Usually it is more economical to use hydraulic couplings rather than guide vanes over the entire load range of the main set. The relatively high inertia of hydraulic couplings makes it difficult to use them in automatically dontrolled systems. Different methods of connecting hydraulic couplings are illustrated in Figs.1, 2 & 3, which also give experimental curves of transient processes. In order to investigate the properties of a hydraulic coupling as a dynamic link in an automatically controlled system an expression is formulated for the torque on the coupling. The coupling is supposed to be connected as shown in Fig.4. and a number of simplifying assumptions are described. The transient function of the hydraulic coupling considered as a dynamic link, the output co-ordinate of which is the level of the working fluid in the working zone, and the input co-ordinate of which is the resistance factor of the overflow pipe, is then obtained. An expression is then derived for a particular case of system disturbance. The analysis shows than in order to reduce the transient time constant it is necessary to reduce the

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On the use of hydraulic couplings as regulating devices. 96-3-2/26

cross-section of the head tank, to reduce the resistance of the connecting pipes and to take various other precautions. The correctness of the conclusions is confirmed by practice. The worst transient conditions are obtained with the circuit of Fig.1 and the best with that of Fig.3. Thus, if a suitable method is used to connect the hydraulic coupling its inertia may be reduced to a minimum and it can be used as a control device in automatically controlled systems. There are 4 figures, 4 literature references (Russian).

ASSOCIATION: The Heat & Electric Power Station of the Moscow Power Institute. (TETs MEI)

AVAILABLE: Library of Congress.

Card 2/2

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

SOV/139-58-5-12/35

AUTHORS: Vyatkin, A. P. and Selivanov, B. A.

TITLE: Preparation of Plane Alloyed Contacts with Germanium (Poluchenie ploskikh splavnykh kontaktov s germaniyem)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, fizika, 1958, Nr 5, pp 60-64 (USSR)

ABSTRACT: Properties of semiconducting devices depend on the geometry of the p-n junction. The properties of the junction itself are determined by the degree of wetting of germanium by the metal used and the mutual solubility of the two. The present paper deals with the causes of formation and ways of elimination of undissolved patches in junctions of germanium with indium. Such patches depend on the method of preparation of indium and germanium, on the crystal orientation of the germanium surface and on the heat treatment applied in alloying. Good wetting depends not only on the purity of the germanium surface but also on the purity of indium. The authors etched indium before alloying and they found that a picric acid etchant was most effective. After etching with picric acid the indium surface becomes mirror-clean and the structure of indium can be clearly seen (Fig.1a - indium before etching, Fig.1b - after etching). M. P. Yakuben' found that the structure which can be seen after etching represented mono-

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Preparation of Plane Alloyed Contacts with Germanium

crystalline grains of indium. The authors studied the process of wetting of germanium by etched and unetched indium, using germanium surfaces of various orientations, such as (111), (110), (100). Various methods of alloying were also tried. Alloying was carried out with the apparatus described in Ref.4, which makes it possible to photograph the indium drop in various stages of alloying. From these photographs the angle of wetting could be determined. After producing alloyed contact, the indium was etched away with hydrochloric acid and the contact surface was then studied under the microscope. The authors make the following conclusions from the results obtained. 1) If unetched indium discs are used, then there will be always some patches of the contact surfaces which are not wetted by indium (Fig.2). Better results are obtained when either etched discs or unetched spheres of indium are used. The best results are achieved by the use of etched spheroidal lumps of indium; in this case no unwetted areas were found (Fig.3). Similar results were obtained for an alloy of indium with 0.5% of gallium. Additional gallium reduces

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Preparation of Plane Alloyed Contacts with Germanium.

the wetting ability of indium (Fig.4). 2) The effect of crystal orientation of the germanium surface appears in the anisotropy of wetting; the smallest angle of wetting is obtained when the (111) surface is used. This is shown in Fig.5, which gives the temperature dependence of the angle of wetting of germanium by indium for the (111) (curves 1 and 3) and (110) (curve 2) planes. To achieve the best p-n junctions, the authors suggest using spheroidally-shaped etched indium and (111) germanium surfaces. The temperature rise in the process of alloying should be about 250-300°C per hour. The junction diameter was of the order of 2 mm when 10-12 mg of indium were used. The authors thank V. A. Presnov who directed this work. There are 5 figures and 7 references, 4 of which are Soviet and 3 English.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V.Kuybysheva (Siberian Physico-Technical Institute at Tomsk State University im. V.V.Kuybyshev)

SUBMITTED: March 20, 1958.

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18.6100

66004
SOV/81-59-8-28193

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 8, p 374 (USSR)

AUTHORS: Vyatkin, A.P., Presnov, V.A.

TITLE: The Problem of the Nature of Soldering Ceramics With Metal

PERIODICAL: Tr. Sibirsk. fiz.-tekhn. in-ta, 1958, Nr 36, pp 181 - 184

ABSTRACT: In an oxidizing medium at 1,200°C soldered joints of magnoferrite ceramics with copper were obtained, having a high mechanical resistance and a good electrical contact without the effect of rectifying the alternating current. The ceramics and the metal oxides soldered with it, which were separated from the metal itself, were subjected to roentgenographic investigation after grinding. The analysis of the roentgenograms of the ceramics, the metal oxides and the transitional layer was cited, which have shown that in the soldering process a chemical interaction of the metal oxides with the components of ceramics takes place and that the structure of the transitional layer obtained is different from the structure of the reacting substance. The roentgenograms of the

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The Problem of the Nature of Soldering Ceramics With Metal SOV/81-59-8-28193

transitional layer show the presence of a structure in it which is similar to spinel, and point also to the appearance of new substances with unexplained structure.

G. Gerashchenko

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A. P. (SFTI)

"The rules governing the wetting of germanium with indium in dependence on the surface treatment of indium, the crystallographic orientation of germanium, and the heat maintenance in the case of melting"

Report presented at a Conference on Solid Dielectrics and Semiconductors, Tomsk Polytechnical Inst., 3-8 Feb. 58.
(Elektrichestvo, '58, No. 7, 83-86)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A.P., insh.

Increasing the sensitivity of the MK-20 oxygen meter. Elek. sta. 29 no.10:89 O '58. (MIRA 11:11)
(Feed water) (Oxygen--Measurement)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

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PODREZ, S.A., insh.; VYATKIN, V.P., kand.tekhn.nauk; PEREVOZCHIKOV, B.S., insh.

Should there be a decrease in the rigidity of the system and the moment of inertia of flywheels used in cold upsetting machines. Vest.mash. 38 no.10:79-80 O '58. (MIRA 11:11)
(Flywheels)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A. P., Cand of Phys Math Sci -- (diss) "The Study of Semiconductor-Metal Alloy Contacts," Tomsk, 1959, 11 pp (Tomsk State University im V.V. Kuybyshev) (KL, 7-60, 106)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

WATKIN, A.P.

PHASE I BOOK EXPLOITATION SOV/4946

Soveshchaniye po poluprovodnikovym materialam. Moscow, 1957

Voprosy metallurgii i fiziki poluprovodnikov; trudy 3-go soveshchaniya. (Problems in the Metallurgy and Physics of Semiconductors; Transactions of the Third Conference) Moscow, Izd-vo AN SSSR, 1959. 129 p. Errata slip inserted. 1,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni A. A. Baykova. Resp. Ed.: N. Kh. Abrikosov, Doctor of Chemical Sciences; Ed. of Publishing House: P. P. Zolotov.

PURPOSE: This collection is intended for technical and scientific personnel concerned with the investigation and production of semiconductor materials. It may also be used by students in schools of metallurgy.

COVERAGE: The collection contains reports submitted at the Third Conference on Semiconductor Materials, held at the Institute of Metallurgy imeni A. A. Baykov, AS USSR, Moscow, in May 1957. The reports deal with problems of obtaining and investigating germanium, silicon, and semiconductor compounds. The collection was first edited by D. A. Petrov, Doctor of Technical Sciences. References accompany most of the reports.

Galovanov, V. V. On the Problem of the Role of Some Factors in the Growth Process of Single Crystals From a Melt 23

Telpygo, K. B. Investigation of Hole Zones of Diamond-Type Crystals On the Basis of the Multielectron Theory 29

Saigeti, Academician (Academy of Sciences, Hungarian People's Republic). Concerning the Problem of Semiconductor Point-Contacts 40

Majewski, Z. (Institute of Basic Technical Problems, Polish Academy of Sciences). Properties of P-N junctions in Germanium Single Crystals Withdrawn From the Melt by Pulling 43

Sosnowski, L. (Institute of Physics, Polish Academy of Sciences). Effect of the Introduction of Minority Current Carriers on Light Reflection From Germanium 49

Bugay, A. A., V. Ye. Kosenko, and Ya. G. Miselyuk. Diffusion and Solubility of Iron and Silver in Germanium 52

Vyatkin, A. F., and V. A. Fresnov. Investigation of Moistening of Semiconductors With Smelt 57

Vasilevskaya, L. M., and Ye. G. Miselyuk. Investigation of Segregation and Solubility of Some Impurities in Germanium During Crystallization 62

Trousil (Institute of Technical Physics, Czechoslovak Academy of Sciences). Problem of Obtaining Pure Silicon 68

Petrov, D. A., Yu. M. Tkachev, V. V. Roshdestvenskaya, N. Ye. Zhukhlinina, and V. D. Khvostikova. Etching of Silicon Single Crystals 69

Hsiung Tzu-ching (Institute of Applied Physics, Chinese People's Republic). Importance of Using Pure Water for Washing Materials Used in Semiconductor Engineering 78

Abdullayev, G. B., M. I. Aliyev, A. A. Bashshaliyev, and G. M. Aliyev. Effect of Halide Impurities on the Physical Properties of Selenium 80

Abdullayev, G. B., G. A. Akhundov, A. A. Kuliyev, and Z. A. Aliyarova. On the Diffusion of Certain Metals in Polycrystalline Selenium 89

Dudkin, L. D., and N. Kh. Abrikosov. Problems of Alloying Semiconductor Alloys 94

Mlestskaya, I. B., N. I. Vitrikhovskiy, and V. D. Pursenko. Effect of Growth Conditions of Single Crystals of CdS and CdSe on Their Physical Properties 107

Trofimenko, A. P., and G. A. Fedorus. Effect of Tempering and Certain Impurities on the Dark Resistance and Photosensitivity of CdS Single Crystals 112

Zairnus, K. (Institute of Technical Physics, Czechoslovak Academy of Sciences). Semiconductor Compounds With an Excess of One of the Components 117

Syrovoy, V. F. Effect of Surface Condition on the Electrical Properties of Type $A^{III}B^{V}$ Compounds 120

Fresnov, V. A., N. A. Krivov, V. N. Vertoprakhov, A. G. Grigor'yeva, and Ye. V. Malyeva. Production and Investigation of New Semiconductor Materials 127

AVAILABLE: Library of Congress

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SOV/139-59-2-8/30

AUTHOR: Vyatkin, A.P.

TITLE: An Investigation of the Properties of Fused Junctions of Germanium and Tin

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1959, Nr 2, pp 48-52 (USSR)

ABSTRACT: The electrical properties of fused junctions of tin and germanium of different specific resistance and type of conductivity were investigated by measuring the potential distribution. It was shown that in the case of hole-type germanium a rectification effect is observed. This effect increases as the specific resistance of the semiconductor increases. The potential distribution was measured as follows. A constant voltage was applied to the specimen from a battery of accumulators through a reversing switch. The specimen was held in a special micromanipulator. The potential drop was measured by means of a movable probe in the form of an electrolytically treated tungsten needle. The probe could be moved along the specimen through distances of 0.01 mm by means of the micromanipulator. All the measurements were carried out using potentiometers so that the specific resistance of

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An Investigation of the Properties of Fused Junctions of Germanium and Tin

the semiconductor could also be measured. The junctions were prepared by fusing in a vacuum in special graphite holders. Fig 3 shows the results obtained for p-type germanium (4 ohm cm) and tin. The voltage drop across the junction in this case is smaller than in the case of p-germanium and indium (Fig 2). It increases with increasing applied potential difference. In the case of p-germanium with a specific resistance of 30 to 40 ohm cm there are two jumps in the potential curve: one is due to the junction resistance and the other depends on the polarity of the applied potential difference and increases when this potential difference is increased (Fig 3). This jump indicates the presence of asymmetric conductivity and is observed only in the junction connected to the positive terminal of the supply. The rectification effect is much weaker than in the germanium-indium case. Fig 5 shows the jump in the potential as a function of the potential difference applied in the neighbourhood of the electrodes. The potential difference across the junction is plotted along the vertical axis and the applied

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An Investigation of the Properties of Fused Junctions of Germanium and Tin

potential difference across the horizontal axis. Curve 1 refers to tin and p-germanium (30 ohm cm), Curve 2 refers to tin and p-germanium (4 ohm cm), Curve 3 to indium and p-germanium (4 ohm cm) and Curve 4 to indium and p-germanium (35 ohm cm). The asymmetric conductivity is explained in terms of the diffusion of tin into germanium. There are 7 figures and 9 references, 8 of which are Soviet and 1 English.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V.Kuybysheva (Siberian Physico-Technical Institute of Tomsk State University imeni V.V.Kuybyshev)

SUBMITTED: September 6, 1958

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24.7100

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SOV/139-59-2-26/30

AUTHORS: Vyatkin, A.P. and Vertoprakhov, V.N.

TITLE: The Surface Energies of Faces of Germanium Crystals

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1959, Nr 2, pp 169-170 (USSR)

ABSTRACT: Stranski and Suhrmann's methods and formulae are applied to germanium crystals; Table 1 lists results, as ratios of σ_{hkl} to σ_{111}, and Table 2 compares the actual values (from Ref 5) with those for other elements or for compounds of similar structure (the topmost entry is "diamond"). It is also shown that the work functions of these surfaces fall in the sequence to be expected from the surface tension data. There are 2 tables and 9 references, 6 of which are Soviet, 2 English and 1 German.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V.Kuybysheva (Siberian Physico-Technical Institute of the Tomsk State University imeni V.V.Kuybyshev)

SUBMITTED: June 12, 1958

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

SOV/96-59-7-6/26

AUTHOR: Vyatkin, A.P., Engineer

TITLE: An Analysis of Different Methods of Connecting a Hydraulic Coupling as a Control Device (Analiz razlichnykh skhem vklyucheniya gidromufty kak reguliruyushchego organa)

PERIODICAL: Teploenergetika, 1959, Nr 7, pp 22-26 (USSR)

ABSTRACT: The main methods of connecting a hydraulic coupling are as follows: with an overhead pressure tank and a throttling device on the line from the tank to the coupling; with an intermittently-operating reversing pump; or with a continuously-operating pump. A most important criterion of such systems is their inertia, that is, the time required to transfer the coupling from one steady state to another. This article analyses the various methods of connection in turn. The first method considered is that in which there is an overhead tank and a throttling device on the line from the tank to the coupling. A theoretical analysis of this case was given in an article by the same author in Teploenergetika Nr 3, 1958, where the transient process equation (1) was derived. The heat and electric power station of the Moscow Power Institute has a hydraulic coupling connected in this

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An Analysis of Different Methods of Connecting a Hydraulic Coupling as a Control Device

way, which is schematically illustrated in Figure 1. Experimental curves of the transient processes of this installation are given in Figure 2. Various measures to improve the transient characteristics are described, and the resulting schematic diagram of the equipment and performance curves are given in Figure 3. It is shown that the transient performance of this system can be made satisfactory. However, one of its disadvantages is that the entire circulation circuit must be hermetically sealed, which is often difficult or even impossible to accomplish. The method of control using an intermittently-acting reversing pump is then considered. Equations of the transient process are derived, the corresponding theoretical curves being plotted in Figure 5. Experimental curves of a hydraulic coupling controlled in this way are given in Figure 6. Within limits the transient process time may be reduced by increasing the pump output, but other methods

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An Analysis of Different Methods of Connecting a Hydraulic Coupling as a Control Device

of achieving this end are also considered. Another method of controlling the hydraulic coupling by means of a reversing pump is to have the pump directly connected to the overhead pressure tank, as shown in Figure 8. The equation of the transient process for this case is derived; the corresponding curves are given in Figure 9 and experimental curves in Figure 10. In this method the pump output is of particular importance. In the next case considered the pump operates continuously, and the practical variants of Figure 11a and b may be replaced by the schematic arrangement of Figure 11v. Again the equation is derived, and corresponding experimental curves, which relate to the circuit of Figure 11b, are given in Figure 12. It is concluded that the method most suitable for automatic control is that with an intermittently-operating reversing pump connected directly to the overhead tank, because inertia is minimised. If the working fluid circuit can be hermetically sealed, the method with an overhead tank and a throttling device is the most simple and

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An Analysis of Different Methods of Connecting a Hydraulic Coupling as a Control Device

reliable. The method with a continuously-operating pump is the least satisfactory. With any of these methods of connection the inertia of the coupling is greatly affected by correct selection of such factors as nozzle diameters, hydraulic resistance of pipes and so on.
There are 12 figures and 1 Soviet reference.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power Institute)

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24.7700 (1138,1164,1385)
26.2421

30951
S/576/61/000/000/008/020
E036/E162

AUTHORS: Presnov, V.A., Izergin, A.P., Krivov, M.A., Vyatkin, A.P., Stroitelev, S.A., Mel'chenko, E.N., Malisova, Ye.V., Selivanova, V.A., and Grigor'yeva, A.G.

TITLE: An investigation of gallium arsenide

SOURCE: Soveshchaniye po poluprovodnikovym materialam, 4th. Voprosy metallurgii i fiziki poluprovodnikov; poluprovodnikovyye soyedineniya i tverdyye splavy. Trudy soveshchaniya. Moscow, Izd.-vo AN SSSR, 1961. Akademiya nauk SSSR. Institut metallurgii imeni A.A. Baykova. Fiziko-tekhnicheskiy institut. 70-75

TEXT: The large energy gap and high electron mobility in gallium arsenide indicate its possible uses in the construction of semiconductor devices for high temperature operation or as a useful photo element. The present paper gives the results of investigations into the electrophysical and rectifying properties of gallium arsenide. The samples, obtained by fusing in ampoules and zone refining, were subjected to measurement of Hall constant,

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An investigation of gallium arsenide S/576/61/000/000/008/020
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thermo-e.m.f. and electrical conductivity as a function of temperature, as well as measurements of variation of resistivity with magnetic field. The bars used in the measurements were either single-crystal or had a coarse crystalline structure; ohmic contacts were made by alloying in tin in vacuum. Before zone refining, resistivities twenty or more times less than that of the material after zone refining can be obtained, and thus refining gives crystals of increased purity. An anomaly was observed in the curve of magneto-resistance $\Delta\rho/\rho$ as a function of magnetic field for p-type material at 105 °K. The fractional change in resistivity decreased to a minimum before increasing again; similar results were reported by Fritzsche and Lark-Horovitz (Ref.1: Phys. Rev., 1955, 99, 400), on InSb at 12 °K. Compensation is stated to be involved in this effect. From the variation of thermo-e.m.f., α, with temperature, the effective mass is evaluated using the Pisarenko formula, assuming that electrons are scattered by lattice vibrations according to a $T^{-3/2}$ law, where T is the temperature in °K. The value of 0.027 agrees with that obtained by Barrie (Ref.2: Physica, 1954, Vol.20, 11).

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An investigation of gallium arsenide S/576/61/000/000/008/020
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The curves of log σ against I/T, where σ is the electrical conductivity, varied markedly with the degree of purity (that is, the number of passages of the zone during zone refining). In Fig.4a, curve 1 is for an unrefined sample showing little change in σ at low temperatures; curve 2 is for the sample after the passage of one zone; and in Fig.4б curve 3 is after the passage of six zones. The decreasing conductivity of the latter over the range 30-200° with increasing temperature is due to reduced electron mobility. Similar effects of zone refining on carrier concentration are also observed. From these curves the acceptor impurity activation energy was found to be 0.25 eV, and for the donor, 0.12 eV. Preliminary data showed that electro-purification in high electric fields and measurement by pulses was necessary. In addition to these measurements, current - voltage curves of point-contact diodes of GaAs are reported as a function of temperature. The surfaces were polished, etched and washed before a tungsten or phosphor-bronze point contact was applied. The ohmic contact was made by alloying tin, lead or silver. The rectifying characteristics of n-type material were significantly better than

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An investigation of gallium arsenide

for p-type, the rectifying coefficients being 10^4 - 10^5 and 10^2 respectively. The reverse voltages and breakdown stability were also better in n-type samples. Reverse voltages of 10-15 V were obtained after the passage of six zones during purification. Temperature stability over the range 20-300° was very good for diodes with the silver ohmic contacts, as shown in the current-voltage curves of Fig.7. The usual metal-semiconductor theory is applied to the results in the range below 1 V; that is the equation;

$$I = I_o(e^{\alpha V} - 1) \qquad (1)$$

is assumed, where V is the voltage drop across the barrier and I_o, the saturation current, is given by

$$I_o = Ce\exp(-qV_k/kt),$$

V_k being the barrier height. Both the constant α and V_k are calculated from the results. Although at room temperature $\alpha = 19\ V^{-1}$, and thus deviates significantly from the theoretical value of $40\ V^{-1}$, this can have many causes, in particular

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An investigation of gallium arsenide S/576/61/000/000/008/020
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failure to take account of surface conductivity. From the variation of the reverse saturation current with temperature the barrier height V_k is found to be 0.8 eV. For p—n junction rectification the barrier height would approximate to the energy gap of 1.4 eV, in considerable disagreement with the experimental value. A better agreement is possible if a metal-semiconductor contact is assumed, although the analysis cannot be considered final.

There are 9 figures and 5 references: 2 Soviet-bloc, 1 Russian translation from non-Soviet-bloc publication, and 2 non-Soviet-bloc. The English language references read as follows:

Ref.1: Fritzsche, Lark-Horovitz. Phys. Rev., 1955, Vol.99, 400.
Ref.2: Barrie, Physica, 1954, Vol.20, 11.

CAPTION TO FIG.7: Temperature dependence of current-voltage curves. 1 - 20°; 2 - 100°; 3 - 140°; 4 - 234°.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

S/196/62/000/002/018/023
E194/E155

AUTHOR: Vyatkin, A.P.

TITLE: Measurement of the specific gravity of gas

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.2, 1962, 37, abstract 2G 272. (Elektr. stantsii, no.7, 1961, 84-85).

TEXT: In burning gas fuel of variable composition it is necessary, for measurements of consumption, to know its specific gravity. A schematic diagram is given of an instrument for continuous measurement of specific gravity. The instrument consists of two tubes of a certain height, one of which is filled through a throttle with gas from the gas main and the other with air. When the gas and air are of different specific gravity a pressure difference is set up at the bottom of the tubes which is measured by a differential manometer. The pressure difference indicates the specific gravity of the gas.

[Abstractor's note: Complete translation.]

Card 1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

RADUN, D.V., dots.; VYATKIN, A.P., inzh., red.

[Measurement of the temperature of liquid metals, moisture of substances, and concentration of solutions] Izmerenie temperatury zhidkikh metallov, vlazhnosti veshchestv i kontsentratsii rastvorov. Red. A.P.Viatkin. Moskva, Mosk. energ. in-t, 1962. 109 p. (MIRA 16:10)
(Chemical engineering--Handbooks, manuals, etc.)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

L 12820-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD

ACCESSION NR: AT3003016 S/2927/62/000/000/0259/0266

AUTHOR: Presnov, V. A.; Vyatkin, A. P.; Novotny*y, S. I.; Khludkov, S. S.; Vilisov, A. A.

62
57

TITLE: Investigation of rectifying properties of gallium arsenide [Report at the All-Union Conference on Semiconductor Devices, Tashkent, 2-7 October, 1961]

SOURCE: Elektronno-dy*rochny*ye perekhody* v poluprovodnikakh. Tashkent, Izd-vo AN UzSSR, 1962, 259-266

TOPIC TAGS: GaAs rectifier

ABSTRACT: The work is a continuation of research in point-contact diodes and diffusion junctions in p-type GaAs (Presnov, V. A., et al. Reports at the 3-rd Vuz Conference on Modern Dielectrics and Semiconductors, Leningrad, 1960). GaAs was prepared with resistivities from a few 10^{-4} to 10^{-1} ohm.cm. Only n-GaAs exhibited good rectifying properties: diodes with 0.005-0.01 ohm.cm resistivity and 10^{17} - 10^{18} cm^{-3} electron concentration showed a good rectification factor, large forward currents, low cutoff voltages, and reverse voltages of 5-10 v. Higher-resistivity diodes showed a higher reverse voltage, a smaller forward current, and

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L 12820-63

ACCESSION NR: AT3003016

4

a high cutoff voltage. Current-voltage characteristics were measured within 20-350C. Effect of strong electric fields on GaAs ohmic point contacts was measured with 20-microsec pulses at 250 cps; it was found that the strong field produces carriers by ionizing impurity centers. Also effect of forming on the current-voltage characteristics was measured. A separate investigation was made of diffusion p-n junctions of p-GaAs: current-voltage characteristics of junctions obtained by diffusion of Ge, Se, and S were measured. "The authors express their deep gratitude to A. P. Izergin who prepared GaAs and to B. A. Selivanov, A. M. Palkin, and P. I. Zakharov for their help in the work." Orig. art. has: 9 figures and 2 formulas

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 15May63 ENCL: 00

SUB CODE: PH NO REF SOV: 009 OTHER: 006

Card 2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

tors and metals

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

SUBMITTED: 23Nov63 ENCL: 02 SUB CODE: SS

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

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ACCESSION NR. AT4017800

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

S/070/63/008/002/008/017
E021/E120

AUTHORS: Vasil'yev A.P., and Vyatkin A.P.

TITLE: Investigation of the crystallographic orientation and etching of gallium arsenide by the method of optical figures

PERIODICAL: Kristallografiya, v.8, no.2, 1963, 248-254

TEXT: The method described by V.N. Vertonrakhov (Kristallogr. v.6, no.5, 1961, 753) was used in the investigation. The diameter of the parallel pencil of light was 1 - 1.5 mm. The samples investigated were flat parallel plates cut parallel to the main crystallographic planes (100), (110) and (111). The etchants used were of the compositions HF:30% H_2O_2:H_2O = 1:1:2 and 30% H_2O_2: :5% NaOH = 1:5. Photographs of the optical figures from the main crystallographic planes of the etched crystal are shown after 1 - 10 minutes etching. Dissolution was anisotropic and with increase in etching time the etch figures became sharper. It was shown that the anisotropic character of dissolution could be used for controlling the orientation of flat plates and also for determining the crystallographic orientation of single crystals.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

Investigation of the crystallographic... S/070/63/008/002/008/017
E021/E120

The optical figures from the main crystallographic planes of gallium arsenide had a different appearance from the figures for germanium and silicon. It was established that only the plane (111) bounded by the atoms of gallium gave optical figures after etching. The method could thus be used to distinguish between (111) and ($\bar{1}\bar{1}\bar{1}$) planes.
There are 5 figures.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskikh nauchno-issledovatel'skiy institut pri Tomskom gosudarstvennom universitete im. V.V. Kuybysheva
(Siberian Physicotechnical Scientific Research Institute at Tomsk State University imeni V.V. Kuybyshev)

SUBMITTED: June 6, 1962

Card 2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

LAVRENT'YEVA, L.G.; VYATKIN, A.P.; PRESNOV, V.A.

Tunnel effect in films of degenerate gallium arsenide. Izv. vys. ucheb. zav.; fiz. no.5:174-176 '63. (MIRA 16:12)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni V.V.Kuybysheva.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

ACCESSION NR: AR4039930

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VASIL'YEV, A.P.; VYATKIN, A.P.

Use of the method of light figures in studying the crystallographic orientation and etching of gallium arsenide. Kristallografiia 8 no.2:248-254 Mr-Ap '63. (MIRA 17:8)

1. Sibirskiy fiziko-tekhnicheskiy nauchno-issledovatel'skiy institut pri Tomskom gosudarstvennom universitete imeni Kuybysheva.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

L 00709-66 EWA(h)/EWT(1)/EWT(m)/EWP(h)/T/EWP(t) IJP(c) JD/JG/GS

UR/0000/64/000/000/0205/0218

ACCESSION NR: AT5020467

AUTHOR: Vyatkin, A. P.; Ivleva, O. M.; Krasil'nikova, L. M.; Presnov, V. A. (Professor); Selivanov, B. A.; Yakubenya, M. P.

TITLE: Process of formation and structure of alloyed contacts of gallium arsenide with gold and silver

SOURCE: Mezhvuzovskaya nauchno-tekhnicheskaya konferentsiya po fizike poluprovodnikov (Poverkhnostnyye i kontaktnyye yavleniya). Tomsk, 1962. Poverkhnostnyye i kontaktnyye yavleniya v poluprovodnikakh (Surface and contact phenomena in semiconductors). Tomsk, Izd-vo Tomskogo univ., 1964, 205-218

TOPIC TAGS: gallium arsenide, gold alloy, silver alloy, semiconductor research, semiconducting material

ABSTRACT: The authors study the process of formation, structure and some properties of fused gallium arsenide contacts with gold and silver. The melting points, coefficients of thermal expansion and microhardness of the various alloys formed at the semiconductor-metal contact were measured. Alloys of gallium arsenide with silver have a melting point of 750-760°C. The melting point of the gallium arsenide-gold alloy produced in a vacuum is 350-360°C, while that produced in an argon

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L 00709-66
ACCESSION NR: AT5020467

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atmosphere is 575°C. This indicates that the composition of alloys of gallium arsenide with gold depends on the conditions under which the alloys are formed. Alloys with gold prepared in argon showed the least change in the coefficient of linear expansion. Alloys produced in vacuum have coefficients of linear expansion close to those of the pure metals. All the alloys differ considerably in their expansion coefficients from gallium arsenide, which may be the reason for the considerable thermal stresses which arise in alloyed contacts of gallium arsenide with gold and silver. Microhardness for all alloys is considerably lower than that of gallium arsenide. X-ray structural analysis shows that the gallium arsenide-silver contacts are composed of eutectic silver and polycrystalline GaAs. The interaction between gallium arsenide and gold in vacuum produces a chemical compound. The gallium arsenide-gold contact produced in argon gas is composed of eutectic gold and gallium arsenide. Contacts of gallium arsenide with gold and silver may be used as ohmic contacts. Orig. art. has: 7 figures, 3 tables.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitet im V. V. Kuybysheva (Siberian Physicotechnical Institute at the Tomsk State University) 44,55

SUBMITTED: 06Oct64 ENCL: 00 SUB CODE: MM, SS

NO REF SOV: 010 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

L 00742-66 EWT(m)/EWP(t)/EWP(b) IJP(c) GS

ACCESSION NR: AT5020468 UR/0000/64/000/000/0219/0232 41 37 B+1

AUTHOR: Vyatkin, A. P.; Vasil'yev, A. F.

TITLE: Some anisotropic properties of gallium arsenide and their effect on the geometry of alloyed contacts 27 27

SOURCE: Mezhvuzovskaya nauchno-tekhnicheskaya konferentsiya po fizike poluprovodnikov (poverkhnostnyye i kontaktnyye yavleniya). Tomsk, 1962. Poverkhnostnyye i kontaktnyye yavleniya v poluprovodnikakh (Surface and contact phenomena in semiconductors). Tomsk, Izd-vo Tomskogo univ., 1964, 219-232

TOPIC TAGS: gallium arsenide, semiconducting material, crystal anisotropy, crystallography

ABSTRACT: The authors study the alloying process and the kinetics of the formation of fused contacts of gallium arsenide with a metal with respect to the crystallographic orientation of the semiconductor surface. The metal used was tin, a donor impurity with respect to gallium arsenide. It is shown that light figures may be used for crystallographic orientation of gallium arsenide crystals and for delimination of (111) surfaces bounded by atoms of gallium and arsenic. The dissolution of gallium arsenide in molten tin is studied as a function of crystallographic

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L 00742-66

ACCESSION NR: AT5020460

orientation, temperature of the solvent and concentration of the gallium arsenide in solution. It is established that the rate of dissolution along the principal crystallographic axes takes the following sequence

$$v[111] > v[100] > v[110] > v[111].$$

Thus the process of gallium arsenide dissolution in tin is anisotropic in nature. The geometry of fused contacts of tin with gallium arsenide is studied in various crystallographic planes. It is shown that the flattest junctions are formed when the metal is fused in plane (111). Data on the electrical properties of the contacts were obtained by measuring the potential distribution in a contact-semiconductor-contact system. It was found that alloyed contacts of tin with n-gallium arsenide are ohmic. Tin forms a rectifying junction with p-type gallium arsenide. The experimental results agree with those of other authors. "We thank V. A. Presnov for interest in the work and consultation, and A. P. Izergin and S. S. Khludkov for furnishing the material." Orig. art. has: 12 figures, 4 tables.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut (Siberian Physicotechnical Institute)

SUBMITTED: 06Oct64 ENCL: 00 SUB CODE: SS

NO REF SOV: 010 OTHER: 004

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

L 00743-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/GS

ACCESSION NR: AT5020470 UR/0000/64/000/000/0238/0253

AUTHOR: Vyatkin, A. P.; Vilisov, A. A.

TITLE: Gallium arsenide point-contact diodes

SOURCE: Mezhvuzovskaya nauchno-tekhnicheskaya konferentsiya po fizike poluprovodnikov (poverkhnostnyye i kontaktnyye yavleniya), Tomsk, 1962. Poverkhnostnyye i kontaktnyye yavleniya v poluprovodnikakh (Surface and contact phenomena in semiconductors). Tomsk, Izd-vo Tomskogo univ., 1964, 238-253

TOPIC TAGS: semiconductor diode, gallium arsenide, semiconductor research, tunnel diode

ABSTRACT: The authors give a brief survey of previous literature on the general and rectifying properties of a gallium arsenide-metal point contact. Data are given on the processes of electrical forming applicable to manufacture of rectifiers and tunnel diodes. Results are given for quantitative calculations of electrical forming of a gallium arsenide-metal point contact. The calculations are made for two cases: 1) for the case of spherical symmetry assuming that the point contact has no size, i. e. the contact is represented as a mathematical point; 2) for the case of ellipsoidal symmetry, taking the actual dimensions of the contact between metal

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

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ACCESSION NR: AT5020470

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and semiconductor into account. In this case, the contact is represented as a circle, and the radius appears in the calculations. It was found that n-gallium arsenide gives point-contact diodes with good rectifying properties and high thermal stability. The current-voltage characteristics of the diodes are given by the relationship

$$I = I_0\left(e^{\frac{qV}{2kT}} - 1\right).$$

During electrical forming, the current passing through the contact between metal and n-gallium arsenide heats the area of the semiconductor near the contact and converts it to a p-region. Rectification in the diodes after forming takes place at the n-p junction. The quantitative calculations of electrical forming may be used for approximate prediction of some of the characteristics of the diode after forming. Where experimental agreement is good, the results of these calculations may serve as a guide for manufacturing point-contact diodes with predetermined characteristics. It is shown that electrical forming may be successfully used for manufacturing tunnel diodes based on gallium arsenide. Orig. art. has: 10 figures, 5 formulas.

ASSOCIATION: none

SUBMITTED: 06Oct64 ENCL: 00 SUB CODE: EC

NO REF SOV: 011 OTHER: 009

Card 2/2 OP

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

L 3367-66 EWT(1)/EWT(m)/T/EWP(t)/EWP(b)/EWA(h) IJP(c) JD/GS

ACCESSION NR: AT5020491 UR/0000/64/000/000/0446/0456

AUTHORS: Khludkov, S. S.; Vyatkin, A. P.; Grishin, V. I.; Presnov, V. A. (Professor)

TITLE: Diffused p-n junctions in gallium arsenide

SOURCE: Mezhvuzovskaya nauchno-tekhnicheskaya konferentsiya po fizike poluprovodnikov (poverkhnostnyye i kontaktnyye yavleniya). Tomsk, 1962. Poverkhnostnyye i kontaktnyye yavleniya v poluprovodnikakh (Surface and contact phenomena in semiconductors). Tomsk, Izd-vo Tomskogo univ., 1964, 446-456

TOPIC TAGS: gallium arsenide, pn junction, sulfur, germanium, selenium

ABSTRACT: Diffused p-n junctions in p-type gallium arsenide, p-n junctions in n-type GaAs, and also p-n-p structures in p-type GaAs were studied, and the methods of producing these junctions are discussed. The p-n junctions were produced by diffusion of sulfur and germanium in evacuated quartz ampules (10^{-4}-10^{-5} mm Hg) with subsequent annealing, grinding, and etching (5% NaOH + 30% H_2O_2 in 5:1 ratio).

The p-n-p structures were prepared by diffusion annealing of GaAs in selenium vapors at 750-1100C for 0.5-22 hrs with a selenium concentration in the vapor of

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L 3367-66

ACCESSION NR: AT5020491

$5 \cdot 10^{17}$–$9 \cdot 10^{19}$ cm^{-3}. The static volt-ampere characteristic of a junction produced by diffusion of sulfur into p-type GaAs is shown in Fig. 1 on the Enclosure. The germanium-diffusion junctions in the p-type GaAs had rectification factors of up to $4 \cdot 10^5$, while those produced by sulfur diffusion had a factor of $6 \cdot 10^3$. In the case of n-type GaAs, the germanium-diffusion junctions had a rectification factor of about $7 \cdot 10^4$. The volt-ampere characteristic of contacts in GaAs-Ga_2Se_3 film is shown in Fig. 2 on the Enclosure. Orig. art. has: 7 graphs, 2 diagrams, and 2 formulas.

ASSOCIATION: none

SUBMITTED: 06Oct64 ENCL: 02 SUB CODE: SS

NO REF SOV: 005 OTHER: 007

Card 2/4

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

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ACCESSION NR: AT5020491

ENCLOSURE: 01

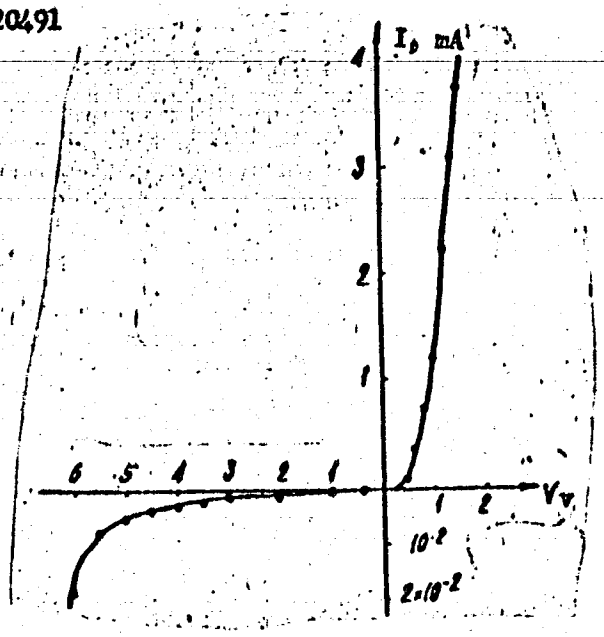

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Fig. 1. Static volt-ampere characteristic of junction produced by diffusion of sulfur into p-type GaAs

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L 3367-66

ACCESSION NR: AT5020492

ENCLOSURE: 02

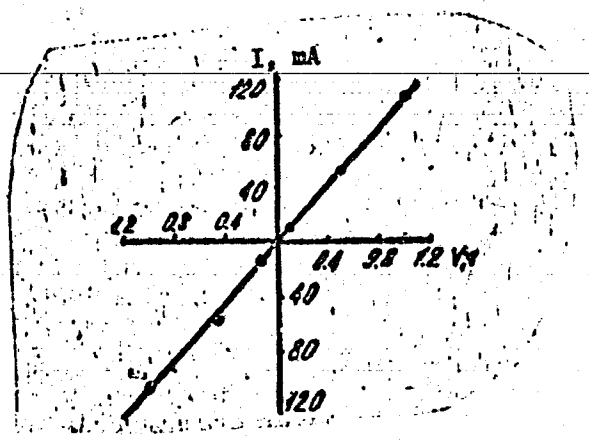

Fig. 2.
Volt-ampere characteristic of contacts in $GaAs-Ga_2Se_3$ film

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

L 2717-66 EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/JG

ACCESSION NR: AP5017186 UR/0139/65/000/003/0152/0153

40

AUTHOR: Vasil'yev, A. P.; Vyatkin, A. P. 21 27

37

TITLE: Diagram of state of gallium arsenide--tin system

SOURCE: IVUZ. Fizika, no. 3, 1965, 152-153

TOPIC TAGS: gallium arsenide, tin containing alloy, alloy phase diagram, solubility

ABSTRACT: This is a continuation of another study by the authors (Voprosy radioelektroniki, seriya II, in press) devoted to the rules governing the formation of alloyed contacts between gallium arsenide and tin. Using the data obtained in that study on the solubility of the semiconductor in the metal, the authors derive an approximate state diagram for the GaAs-Sn system. These results are of interest because a direct construction of the diagram from cooling data is made difficult by the irreversible decomposition of the gallium arsenide and by the high vapor tension of the arsenic over this compound. The temperature at which the liquid phase appears in the GaAs-Sn system lies in the interval 210--225C, which is somewhat lower than the melting point of pure tin, thus confirming the existence of a eutectic alloy on the tin side. The solubility of GaAs in tin is quite low until 400C is reached. The solubility of tin in GaAs is judged to be not higher than 1%.

Card 1/2

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ACCESSION NR: AP5017186

3

Extrapolation of the data to low temperatures yields a tin concentration of 10^{-2}%. "We thank L. G. Lavrent'yeva and A. P. Izergin for valuable remarks in the discussion of the work." Orig. art. has: 3 figures.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut imeni V. D. Kuznetsova (Siberian Physicotechnical Institute)

SUBMITTED: 23Apr64 ENCL: 00 SUB CODE: SS

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

L 45910-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AR6015975 SOURCE CODE: UR/0275/65/000/011/B035/B035

50
B

AUTHOR: Vilisov, A. A.; Vyatkin, A. P.

TITLE: Thermal forming of gallium arsenide point diodes

SOURCE: Ref. zh. Elektronika i yeye primeneniye, Abs. 11B275

REF SOURCE: Dokl. Nauchno-tekhn. konferentsii, posvyashch. dnyu radio. Tomsk, Tomskiy un-t, 1964, 29-32

TOPIC TAGS: semiconductor diode, gallium arsenide, PN junction

ABSTRACT: Contact forming was done by passing a current through a nichrome wire welded to an electrode at a distance of 1-1.5 mm from the tip. The thermoelectromotive force was measured during forming. A change in the sign of the thermoelectromotive force is observed during rather intense forming which indicates formation of a PN junction. The processes observed during thermal forming show characteristics similar to those observed for the case of electrical forming. However, a value of 40 v^{-1} has been achieved with thermal forming for α (in the expression $I=I_0 \exp \alpha U$) which has not been possible with electrical forming. Bibliography of 8 titles. L. L. [Translation of abstract]

SUB CODE: 09

UDC: 621.382.2.002:546.19'681

Card 1/1 mjs

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

KULISH, U.M.; VYATKIN, A.P.

Dislocation structure of alloy contacts between semiconductors and metals. Izv. vys. ucheb. zav.; fiz. 8 no.6:157-161 '65. (MIRA 19:1)

1. Sibirskiy fiziko-tekhnicheskiy institut imeni V.D. Kuznetsova. Submitted May 26, 1964.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VASIL'YEV, A.P.; VYATKIN, A.P.

Diagram of state for the system gallium arsenide - tin. Izv. vys. ucheb. zav.; fiz. 8 no.3:152-153 '65. (MIRA 18:9)

1. Sibirskiy fiziko-tekhnicheskiy institut imeni V.D.Kuznetsova.

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VYATKIN, A.V., general-mayor aviatsii

Ties with the workers are becoming stronger. Vest.protivovozd.obor no.10:75-77 O '61. (MIRA 15:2)
(Russia--Armed forces--Political activity)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

Vyatkin, Arkadiy Vasil'yevich

Bor'ba za yedinyy rabochiy i antiimperialisticheskiy front v stranakh Latinskoy Ameriki (by) A.V. Vyatkin, N.V. Myachin (1) M.I. Mokhnachev. (Ot. red. A.A. Gruber) Moskva, Izd-vo VPSh i AON pri TsK KPSS, 1963.

306 p.

At head of title: Akademiya Obshchestvennykh Nauk. Kafedra Istorii Mezhdunarodnogo Kommunisticheskogo i Rabochego Dvizheniya.

Bibliographical footnotes.

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SHESTIAJTYNOV, S.I.; KORENEV, N.I.; GARELIK, Ye.M.; VYATKIN, M.D.

Drying lumber in the chamber-24 produced by the Central Scientific Research Institute for Machine Woodworking. Der.prom. 5 no.6:18-19 Je '56. (MIRA 9:9)

1.Rechitskiy mebel'nyy kombinat.
(Lumber--Drying)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A. Ye.

Deputy People's Commissar of Machine-Tool Building USSR (-1943-).

"Immediate Objectives of the Machine-Tool and Tool Industry in 1943", Stanki I Instrument, 14, No. 1-2, 1943.

BR-52059019.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

38048. VYATKIN, A. YE.

Mekhanizaisiya truda -- vedushchaya liniya sotsialisticheskogo. proi,vodstva. Medhanizatsiya trudoemkikh i tyazhelykh rabot, 1949, No. 12, s. 6-11 PEREPISKA stakhanovtsev. Sm. 37991

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A.Ye.

For progress in the technology of instrument manufacture. Izm. tekh. no.2:3-5 Mr-Ap '55. (MIRA 8:9)
(Instruments)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A. E.

122-4-18/29

AUTHOR: Vyatkin, A.E.

TITLE: Czechoslovak engineering production plant (from information gathered at the Second Czechoslovak Engineering Exhibition). (Chekhoslovatskoe mashinostroenie (Po materialam II Vystavki Chekhoslovatskogo Mashinostroeniya)).

PERIODICAL: "Vestnik Mashinostroeniya"(Engineering Journal), 1957, No.4, pp. 74 - 81 (U.S.S.R.)

ABSTRACT: Brief catalogue notes covering: 1) large copying lathes SR 2000/6000 swinging up to 2 000 mm dia. with a distance between centres of 6 000 mm; 2) a copying semi-automatic lathe with electro-hydraulic programme controller. Photographs of the copying tool support and a diagrammatic sketch of the copying circuit are shown; 3) semi-automatic lathe, type SPT7 for turning camshafts by the copying method; 4) semi-automatic capstans for bar up to 50 mm diameter. Bar feeding and clamping is accomplished pneumatically; 5) a heavy boring mill with one main and one high-speed spindle. The machine is pneumatically controlled; special devices available for setting up precise depths of boring to an accuracy of 20 μ. A variety of sizes is available. 6) A large assortment of horizontal and vertical milling machines. 7) A special milling machine mounted on a mobile outrigger. Several models of

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Czechoslovak engineering production plant (from information gathered at the Second Czechoslovak-Engineering Exhibition). (Cont.)

122-4-18/29

automatic copying milling machines. 8) Several large gear hobbing machines up to 2 000 mm dia. and more. 9) Cylindrical grinding machine with an infinitely variable control of speed, hydraulic feed of the machine table and vibration isolation of all the motors and transmissions from the body of the machine. 10) Hydraulic presses of 80 to 100 tons specialised for the pressing of plastics. Hydraulic presses for compacting sheet metal waste, scrap and swarf. 11) Coining crank presses of up to 2 000 tons with an accuracy of 0.1 mm. 12) Forging presses up to 4 000 tons, 60 strokes per minute. 13) Horizontal forging machines of up to 1 200 tons and other forging machines. 14) Electric spark micro-drills for the piercing of holes in very hard materials. 15) An electric spark slotter for slotting of carbide and hard steel. 16) An electric spark screw cutting machine. (17) An ultrasonic drill for piercing holes up to 15 mm diameter.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

VYATKIN, A.Ye.

VYATKIN, A.Ye.

New achievements of Russian machinery. Vest.mash. [37] no.11:3 N '57. (MIRA 10:10)

(Machinery industry)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

AUTHOR: Vyatkin, A.Ye. SOV-115-58-3-1/41

TITLE: The Composition and Prime Tasks of the State Measurement-Control Laboratories (Sostoyaniye i blizhayshiye zadachi gosudarstvennykh kontrol'nykh laboratoriy po izmeritel'noy tekhnike)

PERIODICAL: Izmeritel'naya tekhnika, 1958, Nr 3, pp 3-9 (USSR)

ABSTRACT: The article is a general review of development in the field of state control of measurement techniques after the reorganization of the industrial administrative system, (1955 directive). The Committee of Standards, Measures and Measuring Devices reorganized its local branches into state control laboratories for measurement techniques (GKL). During 1956 - 1958, 35 GKL of class I, 45 of class II, and 55 of class III were organized. There are now 275 such laboratories and their branches. They have obtained 23.4 million rubles of equipment, and they will obtain 27 million rubles more in 1958-1959. 17 of the I class and 13 of the II class GKL are already fully equipped: the rest is only 70 to 80 % equipped. The GKL have obtained 250 "GAZ-69" and 32 "GAZ-51" automobiles for mobile inspection laboratories in rural regions. However, the labor-

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The Composition and Prime Tasks of the State Measurement-Control Laboratories.

atories of Altay, Astrakhan', Kursk, Perm', Chelyabinsk, Tadzhik and Turkmen SSR, Komi ASSR and others have not yet converted their automobiles in this way. During 1956-1957, 500 specialists with higher and secondary technical school training were assigned to GKL; the number of GKL chiefs possessing higher technical training increased to 50%; about 250 young graduates of higher and secondary technical schools were sent to GKL; 700 of the personnel are taking higher and secondary technical training through correspondence schools. Despite these figures, the training is not sufficient in general, and particularly in the Kazakh, Kirgiz[illegible], Latvian, Moldavian and Tadzhik SSRs. The level of the GKL work largely depends on the work of the institutes of Committee of Standards, which now equals foreign work in many fields and even surpasses it in some. But it still takes 2 years and more after finished development of devices until the first lot is produced. The institutes are now sending experts to GKL for practical assistance in mastering the new measuring devices and they have organized practical training of GKL personnel in the institutes. The position improves where the Committee of

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The Composition and Prime Tasks of the State Measurement-Control Laboratories

Standards organizations continuously controls and guides the work. By 1958, there had been organized 8,700 local inspection centers, 1,300 stationary open-type repair workshops and 5,000 closed-type workshops for measuring devices, and 730 organizations surveying measures and measuring devices on a contract basis. The plan for standardization and metrology for 1959-1965, developed by the Committee of Standards, includes the organization of 9 inter-oblast' Base Laboratories in Alma-Ata, Irkutsk, Kiyev, Kuybyshev, L'vov, Minsk, Tashkent, Tbilisi and Khabarovsk. These will have the functions of institutes in checking the standard measures and instruments of high accuracy classes. They will give practical training to personnel and practical assistance to other laboratories. Repair and adjusting workshops will also be set-up for outside organizations at 60 laboratories situated in large industrial centers.

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SOV-115-58-3-1/41

The Composition and Prime Tasks of the State Measurement-Control Laboratories

The number of engineer positions in laboratories will be raised to 45-50% of the total number of personnel.

1. Industrial plants--Operation 2. Management engineering--Applications 3. Measurement--Standards 4. Weights--Standards

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A004/A001

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1960, No. 8, p. 12, # 37384

AUTHOR: Vyatkin, A.Ye.

TITLE: Accuracy, Interchangeability and Technical Measurements in Mechanical Engineering According to Soviet and International Standardization

PERIODICAL: V.sb.: Osnovn. vopr. tochnosti, vzaimozamenyayemosti i tekhn. izmereniy v mashinostr. Moscow, Mashgiz, 1958, pp. 13-23

TEXT: The author shows the development trends of state standardization in the USSR. Standards which are based on contemporary achievements of science and technology, envisage a number of types and technical production features which have not only been introduced at advanced factories but are going to be introduced. The standards establish new and more advanced forms and parameters of production. The problem of interchangeability as a whole is solved on the basis of a unified state system of nominal parameters and dimensions of articles, established according to standard series of preferable numbers. The author emphasizes the great importance of introducing standards for threads used in industry. Closely connected

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

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Accuracy, Interchangeability and Technical Measurements in Mechanical Engineering According to Soviet and International Standardization

with this are standards for gages producing the conditions which are necessary to ensure the accuracy of threaded joints. The author points out the standardization task in the field of improving the quality of machine manufacture, in the first place that of increasing their durability. In this context, special attention is paid, when approving new standards and reviewing the existing ones, to increasing the manufacturing accuracy of components and their assembly. In proportion to the rise of the technical level and the increase in demands towards the accuracy of machines, the standard specifications for the accuracy and rigidity of metal cutting machine tools have to be established. In connection with the widespread introduction of metal working by pressure and the development of forging and stamping manufacture, standardized specifications for the accuracy of forging and stamping machines were developed and put in operation recently. The importance of a systematic increase in manufacturing accuracy and durability of cutting tools is emphasized. The increased speed and capacity of machines cause the demands towards geared transmissions to be raised. The author elucidated the participation of the

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

S/123/60/000/008/001/017
A004/A001

Accuracy, Interchangeability and Technical Measurements in Mechanical Engineering According to Soviet and International Standardization

Komitet standartov, mer i izmeritel'nykh priborov pri Sovete Ministrov SSSR (Committee of Standards, Measures and Measuring Devices at the Council of Ministers of the USSR) in the work of the International Standard Organization ISO.
Translator's note: This is the full translation of the original Russian abstract.
P.Ye.A.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961320011-7

Vyatkin, A.Ye.

PHASE I BOOK EXPLOITATION SOV/4718

Sovremennoye sostoyaniye i napravleniya razvitiya tekhnologii mashinostroyeniya i priborostroyeniya (Present State of the Manufacturing Processes in the Machine and Instrument Industries and Trends for Development) Moscow, Mashgiz, 1960. 563 p. 5,000 copies printed.

Ed.: Anatoliy Nikolayevich Gavrilov, Doctor of Technical Sciences, Professor; Managing Ed. for Literature on Machine Building and Instrument Construction (Mashgiz): N.V. Pokrovskiy, Engineer; Ed. of Publishing House: G.F. Kochetova, Engineer; Tech. Eds.: F.D. Kl'ind and A.Ye. Tikhanov.

PURPOSE: This book is intended for technical and scientific personnel in the machine and instrument industries and for students and teachers of schools of higher education.

COVERAGE: The book deals with current theory and practice in the manufacturing processes of the machine and instrument industries and includes discussions on trends for development. The physical nature of the processes and their technical-economic features and possibilities are considered. Particular attention is given to new and progressive processing (supersonic machining, electric machining, cold pressworking, precision casting, precision pressing, new methods of welding, etc.). The book consists of papers presented at the All-Union

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Scientific-Industrial Conference on "Advanced Machine and Instrument Manufacturing Processes," held in 1958. The papers have been revised in the light of recent developments in the field. A chapter is devoted to the automation and mechanization of the industry. Soviet and non-Soviet references accompany some of the chapters.

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PART III. TECHNICAL-ECONOMIC PRODUCTION PROBLEMS IN THE MACHINE AND INSTRUMENT INDUSTRIES

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S/028/60/000/008/001/010
B013/B054

AUTHOR: Vyatkin, A. Ye., President

TITLE: For Further Technical Progress

PERIODICAL: Standartizatsiya, 1960, No. 8, pp. 3 - 7

TEXT: In June 1959 the Plenum of the TsK KPSS (Central Committee of the Communist Party of the Soviet Union) charged the Komitet standartov, mer i izmeritel'nykh priborov (Bureau of Standards, Measures, and Measuring Instruments) and the Gosstroy USSR (State Committee on Construction of the Council of Ministers of the USSR) with the working out of measures for reorganizing the manufacture of mass-produced consumer goods according to State standards during the next 2-3 years. Moreover, the standardization and typification of products of the same type is to be improved thoroughly. Qualified workers from scientific research institutes, design and planning organizations, as well as big factories, are engaged in the standardization of the manufacture of mass-produced consumer goods. The Bureau of Standards, Measures, and Measuring Instruments was instructed by the July 1960 Plenum of the TsK KPSS to

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work out, together with the Councils of Ministers of the Union Republics, proposals for improving standardization in national economy by November 1, 1960, and submit them to the Council of Ministers. Special attention should be paid to an increase in quality. Although more than 300 State standards have been introduced since June 1959, some shortcomings in this field have been observed. Recently, the exact observance of regulations and the timely introduction of standards has been controlled more strictly by the Bureau of Standards, Measures, and Measuring Instruments. The progressive specialization and cooperation of factories is one of the conditions for the fulfillment of the Seven-year Plan. The development of a specialized production of standardized tools and technical equipment is of outstanding importance. For this purpose, the Bureau of Standards, Measures, and Measuring Instruments and the Vsesoyuznyy nauchno-issledovatel'skiy institut po normalizatsii v mashinostroyenii (VNIINMASh) (All-Union Scientific Research Institute of Standardization in Machine Construction) worked out measures for organizing the production on a high technical level. It is planned to increase, in the next 7 years, the production capacity of specialized factories by more than three times the amount of 1958. In this connection, new factories for a centralized

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production of technical equipment are to be established. In 1960-1961, the Bureau of Standards, Measures, and Measuring Instruments, together with the ministries and sovnarkhoz, will have to work out and approve All-Union standards for the principal types of tools and technical equipment. Further, measures must be worked out for the transition to a specialized production of single parts, composite parts, and mass-produced consumer goods. In this connection, the initiative of the Nauchno-issledovatel'skiy institut aviatsionnoy tekhnologii (Scientific Research Institute of Aviation Technology) should be pointed out. In 1960, the Bureau of Standards, Measures, and Measuring Instruments suggested to planning authorities and sovnarkhoz the introduction of about 400 new types. Besides, it was suggested to eliminate about 160 types of outdated machines from production. The Gosudarstvennyy komitet po avtomatizatsii i mashinostroyeniyu (State Committee on Automation and Machine Construction), the Gosplan USSR, and the Bureau of Standards, Measures, and Measuring Instruments were instructed by the Plenum of the TsK KPSS to work out measures for the introduction of standard number series in all fields of machine construction and for the standardization and typification of machine construction products, and to submit corresponding proposals to

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