

24095
S/151/01/003/010/022/036
2101/0108

24,7700 (1164,1385,1559)

AUTHORS: Golikova, O. A., Moynihan, P. T., and Stillman, L. S.

TITLE: Hole mobility in germanium as a function of concentration and temperature

PERIODICAL: Fizika tverdogo tela v. 4, no. 4, 1967, 3105 - 3114

TEXT: The hole mobility in p-type germanium with an acceptor concentration of $4.9 \cdot 10^{13} - 4 \cdot 10^{20} \text{ cm}^{-3}$ was investigated in the temperature range of from 77 to 450°K. The carrier concentration was determined by measuring the Hall effect in magnetic fields of 50 - 18,000 oe in the above range of temperatures. Specimens were produced by zone melting during which the germanium was alloyed with gallium. Mobilities of different specimens as functions of temperature are given in Figs. 1 and 2.

The carrier concentrations of the different specimens ranged from $4.9 \cdot 10^{13}$ to $6.4 \cdot 10^{16} \text{ cm}^{-3}$ at 77°K (Fig. 1), and from $1.2 \cdot 10^{17}$ to $4.2 \cdot 10^{20} \text{ cm}^{-3}$ at 300°K (Fig. 2). The measurement results were checked with specimens

Card 1/5

4

87095

S/HR/61/003/001/001/036
R1004/Ende

Hole mobility in germanium.

having concentrations of 10^{15} - 10^{16} cm^{-3} , produced at the Institut metallurgii AN SSSR (Institute of Metallurgy, AS USSR) by Chokhral'skiy's method. Results are given in Fig. 1. In a detailed discussion of the results the authors show that in the range of carrier concentrations from 10^{15} to $3 \cdot 10^{19}$ cm^{-3} the experimental data on the carrier mobility in p-type germanium in the temperature range from 77 to 350°K can be explained qualitatively and quantitatively by theories of carrier scattering from ionized impurities. The mobility is one-hundredth of that of pure materials. The ratio $u_{\text{theor}}/u_{\text{exp}}$ (u = mobility) is equal to unity up to concentrations of 10^{17} cm^{-3} , has a maximum of nearly 2 at 10^{18} cm^{-3} , decreases to 1.6 and, at a concentration of $3 \cdot 10^{19}$ cm^{-3} starts rising again. The authors thank M. I. Vinogradov for help, and V. S. Zemskov (Institute of Metallurgy, AS USSR) for supplying the control specimens. There are 6 figures and 17 references: 7 Soviet and 10 non-Soviet. The four most recent references to English-language publications read as follows: E. G. S. Page. Phys. Chem. Sol., 15, 207, 1960; T. P. McLean, E. G. S. Page. Phys. Chem. Sol., 16, 220, 1960; F. A. Trumbore, A. A. Tartaglia. J. Appl. Phys., 22, 337, 1953; A. C. Beer,

Card 2/5

Hole mobility in germanium .

29/57

C 00161/003/000/002/016
R111, E110

R. K. Willardson. Phys. Rev., 110, 1956, 450.

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad (Institute of Semiconductors AS USSR, Leningrad)

SUBMITTED: May 27, 1961

Fig. 1. Hall mobility as a function of temperature. Legend: The figures by the curves indicate the number of specimen. On top-specimens with lower carrier concentration.

Fig. 2. Hall mobility as a function of temperature. Legend: see Fig. 1.

Fig. 3. Hall mobility as a function of carrier concentration at room temperature. Legend: (1) specimen examined in the present paper; (2) specimens supplied by the Institute of Metallurgy, AS USSR; (3) data taken from the paper of F. A. Trumbore et al.; (4) data taken from the paper of W. C. Dunlap, Phys. Rev., 10, 1951. X

Card 3/5

29496
S/181/61/003/010/023/036
B125/B102

24.7600 (1043, 1137, 1164)

AUTHORS: Golikova, O. A., and Stil'bans, L. S.

TITLE: Investigation of the dependence of the Hall coefficient on the magnetic field and the temperature in p-type germanium

PERIODICAL: Fizika tverdogo tela, v. 3, no. 10, 1961, 3115-3122

TEXT: The authors study the function $R(H)$ (R -Hall coefficient) for carrier concentrations of $n \sim 10^{13}$ to 10^{16} cm^{-3} at magnetic field strengths of 50 to 38,000 oe, and at temperatures of 77-230°K. The experimental results are compared with theory (A. C. Beer, R. K. Williardson, Phys. Rev., 110, No. 6, 1286, 1953). The experimental results obtained for samples with $n \sim 10^{13}$ to 10^{14} are in semiquantitative agreement with theory. Agreement is found at mobilities lower than the theoretical values. According to G. Dresselhaus, A. F. Kip, and C. Kittel (Phys. Rev., 98, no. 2, 398, 1955) (Determination of the relaxation times τ_l and τ_h of light and heavy holes, respectively, from the width of the

Card 1/3

Investigation of the dependence of...

27596
S/181/61/003/010/023/036
R25/B102

resonance curve at 4°K), the following relation is valid: $\tau_l/\tau_h \approx 1.4$ and not $\tau_l/\tau_h = 1$. The results concerning galvanomagnetic effects were in conformity with theory at $b = m_h/m_l = 8$ (m_h and m_l are the effective masses of heavy and light holes, respectively) $\nu = n_l/n_h = 0.04$ was put instead of $\nu = 0.04$. (n_l and n_h are the concentrations of light and heavy holes, respectively). According to G. Ye. Pikus (ZhETF, XXVII, no. 7, 1957), taking account of the angular dependence may lead to a difference between τ_l and τ_h ; hence, the value $b = 8$ used for the calculations appears to be doubtful. The values of b obtained for various scattering mechanisms (consideration of a possible influence of optical vibrations and of hole-hole scattering) should be taken into account in a more exact theory. M. N. Vinogradov is thanked for aid in measurements, M. S. Shalyt for arranging measurements of the Hall effect in strong magnetic fields, I. I. Farbsteyn for advice, as well as G. L. Bir, B. Ya. Moyzhes, and G. Ye. Pikus for discussions. There are 6 figures, 2 tables, and 12 references: 4 Soviet and 8 non-Soviet. The three most recent

Card 2/3

Investigation of the dependence of. . .

27596
S/181/6*/003/010/023/036
B125/B102

references to English-language publications read as follows:

R. K. Willardson, T. C. Harman, A. C. Beer, Phys. Rev., 26, 1512, 1954;
H. Brooks. Advances in Electronics, 7, 156, 1955; F. J. Morin, Phys.
Rev., 93, no. 1, 62, 1954.

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad (Institute of
Semiconductors AS USSR, Leningrad)

SUBMITTED: May 27, 1961

X

Card 3/3

MI71

S/181/62/004/012/019/052
B104/B102

AUTHORS: Golikova, O. A., Moyzhes, B. Ya., and Orlov, A. G.

TITLE: The mobility of holes in germanium as a function of their concentration and temperature

PERIODICAL: Fizika tverdogo tela, v. 4, no. 12, 1962, 3482-3491

TEXT: A previous work (O. A. Galikova et al., *FizT*, 3, 10, 1961) in which the carrier mobility of gallium-doped p-type germanium was determined between 77 and 450°K is here continued. Ge specimens having gallium concentrations of up to $7 \cdot 10^{20} \text{ cm}^{-3}$ were used for determining the electrical conductivity and the Hall effect between 450 and 1000°K, at which temperatures a noticeable electron concentration already arises. In calculating the carrier mobility, the collisions between carriers for a nondegenerate electron gas and the scattering from both acoustic and optical vibrations were taken into account. This permitted of comparing theory with experiment at higher temperatures also. The measurements were made in an argon atmosphere using platinum probes and Pt-PtRh thermocouples. It was possible to determine the temperature dependence of the Hall effect at

Card 1/2 @ S/181/62/004/012/019/052

The mobility of holes in germanium ...

S/181/62/004/012/019/052
B104/E102

magnetic field strengths up to 10 koe. Results: At temperatures below 300°K, the experimental and theoretical results agree fairly well if the scattering from optical and acoustic vibrations, from ionized and neutral impurities and the scattering of holes from holes is taken into account. At higher temperatures the theory differs considerably from experiment, which is explained by the fact that the mobility in scattering from lattice vibrations decreases more rapidly than is predicted by theory:

$\mu_{\text{lattice}} \sim T^{-3}$ instead of $T^{-2.3}$. This strong decrease cannot be explained by the fact that the carrier energy approaches the spin-orbital splitting in germanium ($\Delta = 0.29$ ev). Spectral analyses showed that with $n < 5 \cdot 10^{19} \text{ cm}^{-3}$ at nitrogen temperature the Hall concentration equals that of the gallium atoms; in the case of stronger alloying, the concentration determined from Hall coefficient is too high. There are 9 figures and 2 tables.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors AS USSR, Leningrad)

SUBMITTED: July 6, 1962
Card 2/2

L 18C01-63

EWP(q)/EWT(m)/BDS AFFTC/ASE JB/AG

ACCESSION NR: AP3001287

S/0131/63/005/006/1657/1667

AUTHORS: Vinogradova, M. N.; Golikova, O. A.; Dubrovskaya, I. N.; Moyzhes, B. Ya.

TITLE: Thermoelectromotive force of p-type germanium in relation to concentration and temperature

SOURCE: Fizika tverdogo tela, v. 5, no. 6, 1963, 1657-1667

TOPIC TAGS: thermoelectromotive force, Ge, Ga, intrinsic conductivity, Hall effect, current carriers, Chromel, Copel, p-type semiconductor

ABSTRACT: The authors undertook this study because of lack of data on either polycrystalline material or single crystals having high concentrations of current carriers. They investigated single crystals in the concentration interval 7×10^{17} to 7×10^{20} per cm^3 and the temperature interval 300-950K. Specimens were prepared by zone refining, during which the Ge was alloyed with Ga. Concentration of current carriers was determined by measuring the Hall effect. To avoid errors resulting from surface attachment of thermocouples, the thermoelectromotive force was measured by thermocouples of Chromel-Copel welded to platinum pins driven into small holes (0.3 mm) in the specimens. Measurements at high temperatures were made in an argon atmosphere. Variations between computed and

Card 1/2.

L 18001-63

ACCESSION NR: AP3001287

experimental values were observed for concentrations above 10^{20} per cm^3 at 300K and also for lower concentrations at temperatures above 300K. These have been explained by deviations from the square law of dispersion with increase of energy. This explanation is in agreement with the change of electrical conductivity, the Hall constant, and the thermoelectromotive force in the region of almost intrinsic conductivity. "The authors thank L. S. Stil'ban's for his interest in the work, A. V. Ioffe for making the measurements on thermal conductivity, and A. V. Petrov for advice on the technique of measuring the thermoelectromotive force." Orig. art. has: 7 figures, 1 table, and 16 formulas.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors, Academy of Sciences, SSSR)

SUBMITTED: 24Dec62

DATE ACQ: 01Jul63

ENCL: 00

SUB CODE: PH

NO REF SOV: 007

OTHER: 015

Card 2/2

L 18043-63

EWP(q)/EWT(m)/BDS

AFTTC/ASD JD

S/0181/63/005/006/1753/1755

ACCESSION NR: AP3001309

AUTHOR: Golikova, O. A.

TITLE: Mobility of electrons in Ge¹¹ at temperatures above room temperature

SOURCE: Fizika tverdogo tela, v. 5, no. 6, 1963, 1753-1755

TOPIC TAGS: electron, mobility, Ge, Sb, alloy, scattering, vibration, temperature, lattice

ABSTRACT: The author undertook this study because of inadequate information on such mobility at higher temperatures. In computing the dependence of mobility on temperature, values at room temperature coincided with experimental values with an accuracy of 20-40%. This precision is considered satisfactory in light of the great contribution of ions in scattering and in view of the approximate nature of the existing theory on scattering by ions. At higher temperatures this contribution should lessen and the agreement with experimental data should improve, but if mobility with scattering at thermal vibrations is taken into account, the reverse is found: at higher temperatures the computed values diverge more and more from experimental values. By considering mobility during scattering at

Card 1/2

L 18043-63

ACCESSION NR: AP3001309

5

lattice vibrations (at temperatures above 290K) coincidence between calculated and experimental results was obtained within an accuracy of 20%. It was found that if the mobility in a sample at room temperature is 35% lower than for such a sample containing Sb, at high temperatures the mobilities of the two are within 10-15% of each other. It may be assumed that the dependence of electron mobility (during scattering at thermal vibrations) is practically unaffected by the kind of alloying material. "The author thanks V. S. Zemskov and A. D. Beluya for furnishing samples and B. Ya. Moyzhes and L. S. Stil'bans for their interest in the work." Orig. art. has: 1 figure.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semi-conductors, Academy of Sciences, SSSR)

SUBMITTED: 16Feb63

DATE ACQ: 01Jul63

ENCL: 00

SUB CODE: PH

NO REF SOV: 004

OTHER: 003

Card 2/2

L 17109-63

EWT(1)/EWG(k)/ENP(q)/ENT(m)/BDS/EEC(b)-2 AFFTC/ASD/ESD-3/

IJP(C) Pz-4 JD/AT

S/0181/63/005/007/1908/1912

ACCESSION NR: AF3002887

75
70

AUTHORS: Golikova, O. A.; Orlov, A. G.

TITLE: Mobility of holes in Ge alloyed with Al and In ^{2,7}

SOURCE: Fizika tverdogo tela, v. 5, no. 7, 1963, 1908-1912

TOPIC TAGS: mobility, hole, Ge, Al, In, alloy, spectral analysis, Hall coefficient, magnetic field, Hall emf, impurity atom, local distortion

ABSTRACT: This is a continuation of previous work on Ge alloyed with Ga by O. A. Golikova, B. Ya. Moyzhes, and A. G. Orlov (FTT, 4, 3482, 1962). In the present study the Hall coefficient was measured in a magnetic field of 20 000 oersteds, permitting the authors to obtain measured values of Hall emf at the highest concentrations (greater than 10^{20} cm⁻³) on the order of several tens of mv in a sample about 1 mm thick and with currents of 1-2 amp through the sample. Measurements were made in the temperature range 77-300K. The mobilities of holes in samples alloyed with Al, throughout the entire temperature range and at concentrations from 10^{17} to 10^{21} cm⁻³, agree with mobilities obtained previously on samples alloyed with Ga, within 10% or less (values on Ge alloy taken from paper cited above). The mobilities of holes in samples alloyed with In proved to be less than in samples

Card 1/2

L 17109-63

ACCESSION NR: AP3003287

5

alloyed with Ga and Al. At concentrations greater than 10^{20} cm⁻³ the Hall concentration was observed to exceed the Al concentration as determined by spectral analysis. "The authors thank V. S. Zerkov and A. D. Belaya for furnishing samples and E. Ya. Mozhes and L. S. Stil'bins for interest in the work and for valuable counsel." Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors, Academy of Sciences, SSSR)

SUBMITTED: 16Feb63

DATE ACQ: 15Aug63

ENCL: 00

SUB CODE: PH

NO REF SOV: 008

OTHER: 008

Card 2/2

L 19628-65 EWP(m)/EWP(t)/EWP(b) AFWL/SSD/ASD(a)-5/ESD(re)/LJP(c) JD

ACCESSION NR: AP4041738

S/0181/64/006/007/2202/2204

AUTHOR: Golikova, O. A.

TITLE: Effective mass of holes in degenerate germanium ✓ B

SOURCE: Fizika tverdogo tela, v. 6, no. 7, 1964, 2202-2204

TOPIC TAGS: hole conduction, carrier mobility, germanium, carrier density, carrier effective mass

ABSTRACT: In order to check on the conclusions of earlier results by the author (O. A. Golikova, B. Ya. Moyzhes, A. S. Stil'bins, FTT v. 3, 3105, 1961; O. A. Golikova, B. Ya. Moyzhes, A. G. Orlov, FTT, v. 4, 3483, 1962; O. A. Golikova, A. G. Orlov, FTT, v. 5, 1908, 1963) that the mobility of the holes in germanium decreases at 77--300K much more rapidly than would follow from the theory in the case of strong degeneracy and scattering by impurity ions and lattice vibrations, the author calculated the effective mass of the holes as

Card 1/5

L 19628-65

ACCESSION NR: AP4041738

a function of their density obtained from data on thermal emf of very strongly doped germanium specimens ($n > 10^{20} \text{ cm}^{-3}$). Such calculations are also of interest because there are still no published data on the effective mass of holes in strongly degenerate p-germanium specimens. It is shown that in the case of very high concentration the predominant contribution to the scattering is made by the impurity ions. The effective mass is found to increase with concentration and to be dependent on the scattering parameter. The values of the mobility calculated at a constant effective mass ($m^* = 0.33 m_0$, where m_0 -- mass of free electron) exceed the experimental values by 2--3 times. On the other hand, if the concentration dependence of m^* is taken into account, the values agree within 15--30% if $r = 2$. For $r = 1$ the agreement is poorer, but there are grounds for assuming that $1 < r < 2$. It is concluded that, in view of the correlation between the results for the mobility and the thermal emf, the concentration dependence of the mobility can be regarded as governed by the growth of the effective mass of the holes with in-

Card 2/5

L 19628-65

ACCESSION NR: AP4041738

creasing concentration (energy), not only qualitatively but also quantitatively. Orig. art. has: 2 figures and 2 formulas.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors, AN SSSR)

SUBMITTED: 24Feb64

ENCL: 02

SUB CODE: SS, EC

NR REF SOV: 004

OTHER: 003

Card 3/5

L 19628-65

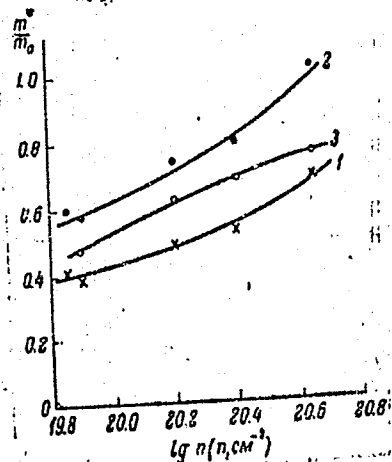
ACCESSION NR: AP4041738

ENCLOSURE: 01

Fig. 1

Dependence of effective mass of holes on the concentration.

1 - $r = 2$, 2 - $r = 1$, 3 - calculated on the basis of equality of the experimental and theoretical mobilities



Card 4/5

L 19628-65

ACCESSION NR: AP4041738

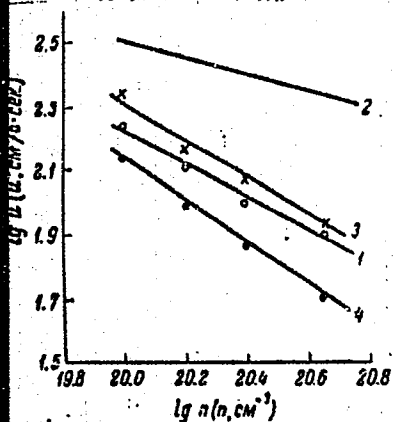
ENCLOSURE: 02

u in cm²/V-sec

Fig. 2

Dependence of hole mobility on the concentration at T = 100K

1 - experimental curve, 2 - 4 calculated curves
2 -- $m^* = 0.33m_0$, 3 -- $m^* = m^*(n)$, $r = 2$,
4 -- $m^* = m^*(n)$, $r = 1$



Card 5/5

10072-65
ACCESSION NR: AP4046620

AUTHORS: Golikova, O. A.; Petrov, A. V.

TITLE: Electron mobility in germanium at temperatures 300--1000K B

SOURCE: Fizika tverdogo tela, v. 6, no. 10, 1964, 3065-3069

TOPIC TAGS: germanium, electron mobility, antimony, doping, elec-
tron scattering, crystal lattice vibration

ABSTRACT: An investigation, at 300--1000°K of the mobility in ger-
manium heavily doped with antimony ($n \approx 2 \times 10^{19} \text{ cm}^{-3}$) showed that
the mobility above the Debye temperature (430°K) fell as $T^{-2.5}$, in
sharp conflict with the theory of scattering by the acoustical and
optical modes of the lattice vibrations. The effective density-of-
states mass, determined from the thermoelectric power at high tem-
peratures, was independent of temperature. The strong temperature
dependence of the electron mobility was due to the intervalley scat-

L 10372-63

ACCESSION NR: AP4046620

3

tering, the role of which should increase at high temperatures. Above 800--900°K, two-phonon scattering processes were probably also active, because the parameter representing the contribution of these processes could be regarded as small at these temperatures. "The authors are grateful to B. Ya. Moyzhes and L. S. Sil'bins for their interest in this work." Orig. art. has: 3 figures, 4 formulas, and 1 table.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors, AN SSSR)

SUBMITTED: 25Apr64

SUB CODE: SS

NR REF SOV: 008

ENCL: 00

OTHER: 010

Card

2/2

L 9244-66 EWT(1)/EWP(e)/EWT(m)/EWP(t)/EWP(k)/EWP(z)/EWP(b) IJP(c) JD
ACC NR: AP5022743 SOURCE CODE: UR/0181/65/007/009/2860/2862

AUTHOR: Golikova, O. A.; Avgustinnik, A. I.; Klimashin, G. M.; Kozlovskiy, L. V.

ORG: Institute of Semiconductors AN SSSR (Institut poluprovodnikov AN SSSR); Leningrad Technological Institute in. Lensovet (Leningradskiy tekhnologicheskii institut)

TITLE: Electrical properties of titanium carbide

SOURCE: Fizika tverdogo tela, v. 7, no. 9, 1965, 2860-2862

TOPIC TAGS: electric property, titanium compound, carbide, energy band structure, thermoelectromotive force, Fermi level

ABSTRACT: The authors study the electrical properties of titanium carbide as a function of carbon concentration. The data are used as a basis for an explanation of the energy spectrum and mechanism responsible for scattering of current carriers. The resistivity, thermoelectromotive force and Hall constant were measured in specimens of TiC_x ($x = 0.43-1.0$). Powder metallurgy methods were used for producing the specimens. Curves are given for resistivity and thermoelectromotive force as functions of temperature in the 300-1500°K range for various values of x . Hall concentrations, defect concentrations, mobilities and effective masses are tabulated for various carbon concentrations. It was found that the effective mass decreases with an increase

L 9244-66

ACC NR: AP5022743

in concentration. It is assumed that the Ti-C bond is basic in stoichiometric TiC and that the Ti-Ti bond is strongly screened. The Ti-Ti bond becomes more and more important as the carbon content in the compound is increased. The stronger this bond becomes, the wider the conduction band and the greater the deviation from semiconductor properties. The rapid increase in thermoelectromotive force at high temperatures is explained by assuming that the "metal" conduction band overlaps the higher conduction band of stoichiometric titanium carbide. At high temperatures, the Fermi level falls into the higher band and thermoelectromotive force begins to increase more rapidly. This hypothesis is confirmed by $\alpha(T)$ curves. Orig. art. has: 2 figures, 1 table.

SUB CODE: 20/

SUBM DATE: 14Apr65/

ORIG REF: 003/

OTH REF: 002

Card 2/2 *pw*

L 15736-66 EWT(1)

ACC NR: AP6000898

SOURCE CODE: UR/0181/65/007/012/3698/3700

AUTHORS: Golikova, O. A.; Avgustinnik, A. I.; Klimashin, G. M.;
Kozlovskiy, L. V.; Ordan'yan, S. S.; Snetkova, V. A.

ORG: Institute of Semiconductors, AN SSSR, Leningrad (Institut
poluprovodnikov AN SSSR)

TITLE: Electric properties of carbides of the transition metals of
group IV

SOURCE: Fizika tverdogo tela, v. 7, no. 12, 1965, 3698-3700

TOPIC TAGS: titanium compound, zirconium carbide, hafnium compound,
carbide, thermal emf, Hall constant, resistivity, transition element

ABSTRACT: The purpose of the investigation was to compare the ^{21,44,55}elec-
tric properties (thermal emf, resistivity, Hall constant) of TiC, ZrC,
HfC as functions of the composition in the temperature interval 300
-- 1500K. The data on TiC were taken from an earlier investigation
by the authors (FTT v. 7, 2860, 1965). The ZrC and HfC were prepared
by the same technology as the TiC. The plots of all the measured

Card 1/2

2

L 15736-66

ACC NR: AP6000898

quantities against the carbon concentration are approximately the same for all three carbides. This demonstrates that the scattering mechanism and energy spectrum of the carriers are the same in all the compounds. An unexpected result is the fact that the effective masses of the three carbides are equal, since their lattices have different lattice constants and the participating electrons come from different shells. From the fact that the ratio of the distances between the metal and carbide atoms (R) and the radii of the metallic atoms (r) is also constant for all carbides, it is concluded that the orbitals of the metal atoms overlap equally. This explains the equality of the effective masses. The carrier scattering mechanism is briefly discussed. Orig. art. has: 2 figures, 1 formula, and 1 table.

SUB CODE: 07 / SUBM DATE: 23Jul65/ ORIG REF: 004/ OTH REF: 003/

Card

2/2

L 23154-66 ENT(1)/ENT(a)/ENT(t) ICP(c) JD

ACC NR: AP6006837

SOURCE CODE: UR/0101/66/008/002/0500/0506

AUTHOR: Golikova, O. A.; Iordanishvili, Ye. K.; Petrov, A. V.

ORG: Institute of Semiconductors, AN SSSR, Leningrad (Institut poluprovodnikov AN SSSR)

TITLE: Electrical properties of solid solutions in the Si-Ge system

SOURCE: Fizika tverdogo tela, v. 8, no. 2, 1966, 500-506

TOPIC TAGS: solid solution, germanium, silicon, current carrier, conduction band, semiconductor band structure, electric property

ABSTRACT: Experimental data are given on the electrical properties of heavily doped specimens of solid solutions containing 5-30 at % Ge in p-silicon and 15-30 at % Ge in n-silicon at temperatures from 100 to 1100°K with particular regard to the mechanism responsible for scattering of current carriers by lattice vibrations at high temperatures (above 400°K), by ion impurities for the case of deep alloying and by nonhomogeneities in the solid solution. The authors discuss data on the energy spectrum of holes and electrons at high energies produced by two independent

Card 1/2

L 23154-66
ACC NR: AP6006837

methods: increasing the temperature and filling the bands (deep alloying). Curves are given for thermoelectromotive force as a function of current carrier concentration in silicon-germanium solid solutions of both conductivity types. Graphs are also given showing hole and electron mobility as functions of carrier concentration for various solid solutions. The resultant data are used for calculating the effective mass of the density of electron states. It is found that the effective mass for the density of states in solid solutions of germanium in silicon is comparable to that observed in pure silicon and increases with temperature. This indicates that the parameters of the conduction band in solid solutions with a composition close to that of silicon remain the same as in pure silicon. From this, it may be concluded that the amplification effect in Si-Ge solid solutions is extremely small. We are sincerely grateful to V. S. Zemskiy, V. V. Rozhdestvenskaya and R. S. Yero-feyev for furnishing the specimens and to B. Ya. Moyzhes for participating in discussion of the work. Orig. art. has: 5 figures, 3 formulas.

SUB CODE: 20/ SUBM DATE: 16Apr65/ ORIG REF: 005/ OTH REF: 015

Card 2/2

L 06296-67 EWT(m)/EWF(a)/EWP(t)/ETI IJP(s) AT/WH/JD/JG/AD

ACC NR: AT6027152

(A)

SOURCE CODE: UR/0000/65/000/000/0244/0250

AUTHOR: Avgustinik, A. I.; Golikova, O. A.; Klimashin, G. M.; Kozlovskiy, L. V.

ORG: none

TITLE: Effect of oxygen on certain properties of titanium carbide

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Issledovaniya v oblasti khimii silikatov i okislov (Studies in the field of chemistry of silicates and oxides). Moscow, Izd-vo Nauka, 1965, 244-250

TOPIC TAGS: titanium compound, carbide, oxygen impurity

ABSTRACT: In a study of alloys of the TiC-TiO-Ti system, x-ray structural data showed that the contamination of TiC_x with oxygen causes a decrease in the size of the unit cell, this effect being more pronounced the closer the composition is to the stoichiometric proportion of TiC_x. This along with the influence of vacancies accounts for the great scatter of results obtained by various authors in their study of the lattice parameter of TiC_{1.0}. The melting point and microhardness of titanium carbide contaminated with oxygen decrease with increasing number of defects in the lattice, and to a lesser degree depend on the kind of metalloid atoms. As the oxygen content rises, the microbrittleness decreases at first, then begins to increase because of increasing ionic bond character. The electron concentration in titanium carbide containing some oxygen is influenced by two effects: when the number of vacancies in the metalloid

Card 1/2

L 05296-67

ACC NR: AT6027152

sublattice (i. e., the number of conduction electrons) is small, the current carrier concentration grows, since oxygen atoms give up to the conduction band their excess electrons relative to carbon. When the number of vacancies in the metalloid sublattice is large, the oxygen atoms do not give up their electrons, and oxygen in its reaction with titanium ties up the titanium electrons, causing a drop in the carrier concentration. Titanium carbide containing an oxygen admixture shows a metallic temperature dependence of the resistivity and thermal emf. The mobility of electrons at $T = \text{const}$ drops with their increasing concentration and is relatively insensitive to the concentration of defects in the metalloid sublattice. The predominant scattering mechanism appears to involve scattering by lattice vibrations, and the energy dependence of the relaxation time is close to that observed in semiconductors. Orig. art. has: 13 figures.

SUB CODE: 07/ SUBM DATE: 09Apr65/ ORIG REF: 009/ OTH REF: 003

Card 2/2 *h*

L 06576-07 EMT(r)/EMT(a)/EMT(w)/EMT(l)/RTI 101(s) 101(s) 101(s)
ACC NR: AP6029818 (A) SOURCE CODE: UR/0363/66/002/008/1439/1443

AUTHOR: Avustinik, A. I.; Golikova, O. A.; Klimashin, G. M.; Neshpor, V. S.;
Ordan'yan, S. S.; Snetkova, V. A. 55
e

ORG: Leningrad Institute of Technology im. Lensovet (Leningradskiy tekhnologicheskii
institut); Semiconductor Institute, Academy of Sciences SSSR (Institut
poluprovodnikov Akademii Nauk SSSR) 27

TITLE: Dependence of certain electro- and thermophysical properties of zirconium
monocarbide on the carbon content within the range of homogeneity

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 8, 1966, 1439-1443

TOPIC TAGS: zirconium carbide, solid mechanical property, solid physical property,
electric conductivity, thermal emf, Hall coefficient

ABSTRACT: The dependence of electrical resistivity, absolute thermal emf, Hall coef-
ficient, and thermal conductivity of zirconium monocarbide was studied for 36-48 atom %
C contents in the carbide. The zirconium carbide samples were prepared by fusing high
purity zirconium and carbon at 1800°C in vacuo followed by sintering at 2200°C. The
properties, compositions, and lattice parameters for various zirconium samples are
graphed and tabulated. It was found that free electrons act as current carriers within
zirconium carbide. The electrical resistivity, the thermal emf, and the Hall coeffi-
cient were found to decline and the thermal conductivity was found to increase with

Card 1/2

UDC: 546.831'261:541.12.03

L 06576-67

ACC NR: AP6029818

declining contents of the combined carbon in zirconium monocarbide. This phenomena are related to the release of a portion of the zirconium electrons from the localized metal-carbon bonds. The specific resistivity and absolute thermal emf were found to increase linearly with increasing temperature. The slope of these lines was found to decrease with decreasing carbon content in zirconium carbonate. This phenomenon is apparently due to the decline in the effective mass of the conduction electrons. Orig. art. has: 2 figures and 1 table.

SUB CODE: 1120/SUBM DATE: 06Oct65/ ORIG REF: 013/ OTH REF: 015

Card 2/2

Photoreduction, etc.

USSR / Optics

8

Abs Jour: Refrat. Zhur-Fizika, 1977, No. 1, p. 1-4

Author : Tolstoy, N.A., Melnikova, E.S., Filikova, M.I., Boronov, M.M.

Inst : Not Given

Title : Photoconduction and Luminescence of Polymers in the G.E.(A)

Orig Pub: Zh. eksperim. i teor. fiziki, 1977, No. 1, p. 1-4

Abstract: An investigation of photoconductive properties of G.E.(A) (5×10^{-4} g/s). In agreement with well-known data of literature, the stationary photoconductivity $\Delta \sigma$ increases with the intensity of the exciting light A (various wave lengths λ and $\lambda_{0.5}$ microns) at a slower rate than E, and at a higher rate than E (sublinear dependence). At high intensities of A, $\Delta \sigma$ increases more rapidly than E (superlinear dependence). Spectra of $\Delta \sigma$ with average concentrations approximately 10^{17} cm⁻³ has a dependence of $\Delta \sigma \sim E^2$. Also to linear dependence of $\Delta \sigma$ on the concentration of the high concentration of a polymer.

Card : 2/3

USSR / Optics

K

Abs Jour: Referat Zhur-Fizika, 1977, No. 5, p. 107

measured rapidly. All specimens show a minimum intensity in the red and infrared regions of the spectrum. In the visible region, specimens the brightness of the fluorescence is proportional to E . In high concentration of dyes, $I_{\text{fl}}(E)$ is nonlinear. For low concentration specimens, the ratio of the initial rates of rise and fall of the photoexcitation $L_{\text{r}}/L_{\text{f}} \ll 1$, and the ratio of the velocity of rise in photoexcitation to the incident light when the light is turned on to the ratio of the fall for the incidence when it is turned off, $L_{\text{r}}/L_{\text{f}} \ll 1$ and $L_{\text{r}}/L_{\text{f}} \gg 1$. High concentration specimens give $L_{\text{r}}/L_{\text{f}} \gg 1$ and $L_{\text{r}}/L_{\text{f}} \ll 1$.

In this case the initial course of the curve has a hyperbolic character $\sim t^{-2}$. For low concentration of dyes, the initial extinction of glow curves have $I_{\text{fl}}/L_{\text{ext}} \ll 1$ and $I_{\text{fl}}/L_{\text{ext}} \gg 1$ and are typical for the kinetic of the glow of phosphors.

Card : 2/3

36-68-10/18

AUTHOR: Krasil'shchikov, L.B., Golikova, O.I., and Novosel'tsev, Ye. P.

TITLE: Photoelectric Measurements of Relative Spectral Coefficients of Brightness (Fotoelektricheskiye izmereniya spektral'nykh otноситel'nykh koeffitsiyentov yarkosti)

PERIODICAL: Trudy Glavnoy geofizicheskoy observatori
1957, Nr 68, pp. 152-163 (USSR)

ABSTRACT: Photographic spectrometry is gradually being replaced by photoelectric spectrometry. The article discusses results of determining the brightness coefficient of brick, slate, and various paints and describes a number of photoelectric apparatus used for this purpose. The article mentions Ye. L. Krinov. There are 14 diagrams and 4 tables, two of them in the appendix. Of 13 references, 10 are USSR.

AVAILABLE: Library of Congress
Card 1/1

СЛОВАРЬ

USSR/ Physical Chemistry - Crystals

B-5

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11000

Author : Tolstoy N.A., Kolomiyets B.T., Golikova O.I., Tsentner M.Ya.

Title : Photoconductivity and Luminescence of Polycrystalline CdS(Cu)

Orig Pub : Zh. eksperim i teor fiziki, 1956, 30, No 3, 575-576

Abstract : In the case of polycrystalline samples of CdS-Cu (10^{-6} - $5 \cdot 10^{-4}$ g/g) were investigated dependence of stationary photoconductivities and luminosity of glow on intensity of exciting light E (Hg-lines 365, 546 and 578 m μ), and also the ratios of surface areas below the curves of photoconductivity rise and drop, and below the curves of increase and attenuation of the glow. The conclusion is reached that results are conflicting with any recombination scheme of the glow and are in accord with the theory of a 2-step mechanism of excitation (Loshkarev V.Ye., Fedorus G.A., Izv. AN SSSR, Ser. fiz., 1952, 16 81; RZhKhim, 1956, 64335).

Card 1/1

GOLIKOVA

50-2-22/22

AUTHOR: Gayevskaya, G. N.

TITLE: Conference of Young Experts of the Main Geophysical
Observatory imeni A. I. Vovaykov
(Konferentsiya molodykh spetsialistov Glavnoy geofizicheskoy
observatorii im. A. I. Vovaykova)

PERIODICAL: Meteorologiya i Gidrologiya, 1958, Nr 2, pp. 61-61 (USSR)

ABSTRACT: This conference took place from October 28th - 29th, 1957; assistants of the Leningrad University, of the Arctic Scientific Research Institute, of the All-Soviet Institute for Plant Breeding and others took part in it. Lectures were held by young scientists of the conference. A. S. Grigor'yeva's lecture on "the Horizontal Synchronizing Pulse in the Atmosphere" dealt with the computation of the atmospheric coefficient on various isobar surfaces with reference to the air current. L. P. Spirina's lecture dealt with the forecasts of the monthly temperature anomalies with reference to the inertia laws. N. A. Timofeyev reported on the calculations of snow melting. On the strength of the known laws by Prandtl and of the stage law by D. L. Laykhtan, a formula for the

Card 1/3

... connection between
... Radiation".
... approximated solution of the
... dispersion according to the ...

KATAEV, T.G., glav.red.; SLADKOV, I.P., red.[deceased];
GOLIKOVA, Z.I., red.; GOLOBEIGA, P.Ya., red.; MOLOZOVA, G.S.,
red.; NILOV, V.I., red.; OXHOPEV, N.S., red.; PALAMARCHUK,
G.D., red.; POPOV, K.S., red.; SKVORTSOV, A.F., red.;
RODOSHANSKAYA, V.A., red.; AN ONOVA, N.M., tekhn. red.

[Problems of viticulture and wine making; abstracts for work
for 1958-1960] Voprosy vinogradarstva i vinodeliia: sbornik
referatov nauchnykh rabot za 1959-1960 gody. Moskva, Sel'khoz-
izdat, 1962. 363 p. (MIRA 15:7)

1. Yalta. Vsesoyuznyy nauchno-issledovatel'skiy institut vinoe-
liya i vinogradarstva "Magarach."
(Viticulture) (Wine and wine making)

PA 171T98

GOLIKOVSKIY, I.

USSR/Radio - Television Receivers
Miniature Tubes

Sep 50

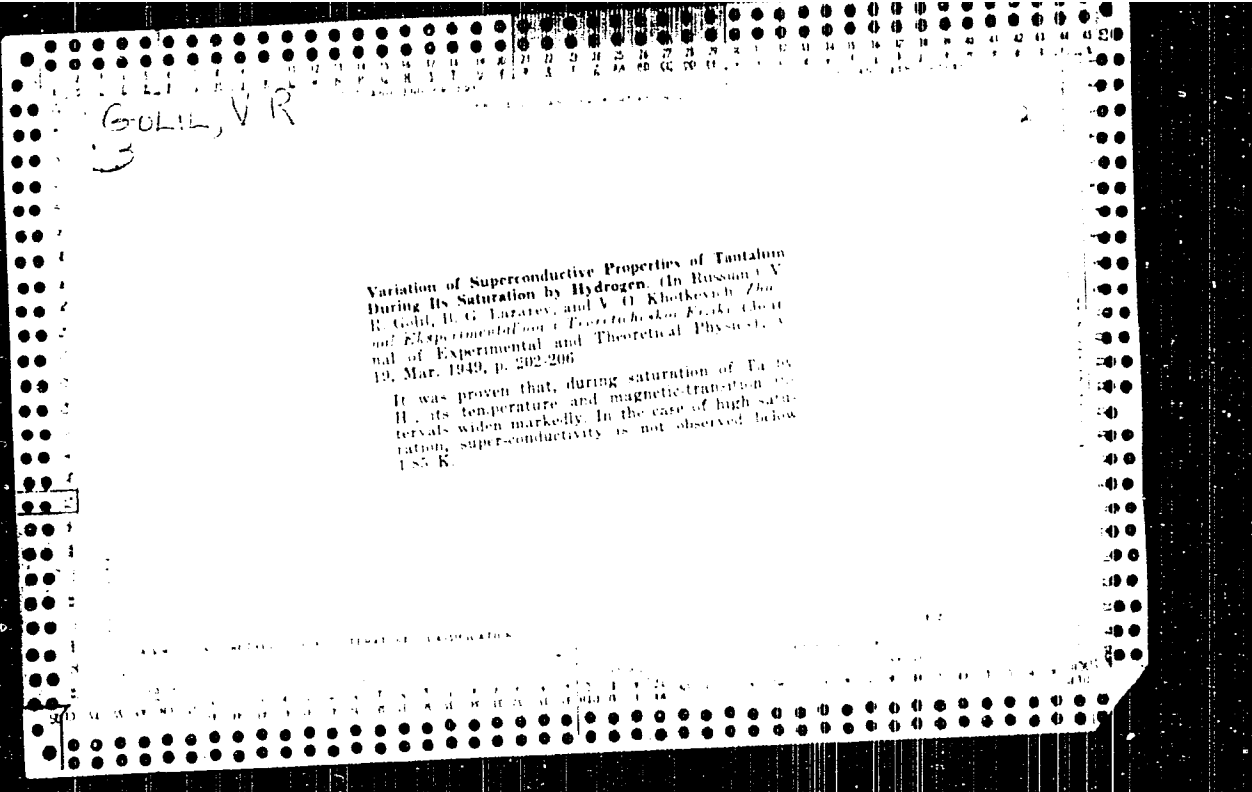
"Tuned RF Television Receiver," I. Golikovskiy
"Radio" No 9, pp 48-52

Recommends for radio amateurs within 10-15 km
of television center, tuned rf picture receiver.
This 3-V-1 type receiver has 3 hf amplification
stages, using three 6AZh5 [6AJ1] miniature
tubes for rf amplification, 6X6 diode detector,
and 6AG7 pentode picture amplifier. Schematic
diagrams and details of construction and ad-
justment.

171T98

GOLIKOVSKIY, I., Moscow.

Use of the output transformer of the "Leningrad T-2" television set in
television generators. Radio no.7:56 J1 '53. (MLA 6:7)
(Television--Receivers and reception)



GOLIMBIYEVSKIY, N. Kh.

USSR/Electricity - Literature
Cables

Jun 53

"Review of N.Kh Golimbiyevskiy's and L.I. Masheret's Book 'Osvintsevaniye Kabeley' (Lead Sheathing of Cables)" (Engrs D.L. Sharlet, D.M. Lashnik, reviewers)

Elektrichestvo, No 6, p 96

Reviewer calls Golimbiyevskiy's and Masheret's book (136 pp, Gosenergoizdat, 1952) a much-needed book for technology of cable production, but notes defects, including insufficient coverage of lead sheathing of communications and rubber-insulated cables and lack of attention to economy of elec power in pressing operations

268T64

GOLIN, P.I.

Veterinary service in Soviet Dagestan during last 45 years.
Veterinariia 42 no.14:6-8 1965. (12A 19:1)

1. Nauchnik veterinarno go otdela Dagestanskoy ASSR.

GOLIN, Ya.I.

First conference of surgeons of the Daghestan A.S.S.R. Zdrav.Ros.
Feder. 3 no.1:44-46 Ja '59. (MIRA 12:2)

1. Korrespondent zhurnala "Zdravookhraneniye Rossiyskoy Federatsii."
(SURGERY--CONGRESSES)

GOLIN, Ya.I.

Third plenum of the Daghestan Province Committee of the Medical
Trade Union. Zdrav.Ros.Feder. 3 no.1:46 Ja '59. (MIRA 12:2)

1. Korrespondent zhurnala "Zdravookhraneniye Rossiys'coy Federatsii."
(DAGHESTAN--MEDICAL PERSONNEL)

GOLIN, Ya.I.

General incidence of disease (according to data on application for medical care) among the population of a mountain region in the Daghestan A.S.S.R. Zdrav. Res. Feder. 7 no.7: 7-12 Jl'63. (MIRA 16:9)

1. Zamestitel' ministra zdravookhraneniya Dagestanskoj ASSR. (LAKSRIY DISTRICT--MEDICAL STATISTICS.

DZHAVADOV, A.A.; GOLINA, I.N.

Oil recovery from water-free and watered oil wells in the
Sub-Kirmaki series of the Khorasany and Ramany areas in
fields of the Oil Field Administration of the Lenin Petroleum
Trust. Azerb. neft. khoz. 40 no.1:28-30 Ja '61.

(MIFA 14:8)

(Oil reservoir engineering)

127

S/070/61/006/003/009/009

EG73/E535

24,7800(1153, 1160, 1136)

AUTHORS: Golina, Yu.I., Kashtanova, A.M., Maksimova, G.V. and Skanavi, G.I. (Deceased)

TITLE: Producing single crystals of strontium-titanate and some data on their dielectric properties

PERIODICAL: Kristallografiya, 1961, Vol.6, No.3, pp.473-475

TEXT: In other work the authors deal with the results of tests on growing single crystals of SrTiO_3 by the method of Verneuil from a charge produced by sintering³ equimolar parts of TiO_2 (r) and SrCO_3 . The obtained single crystals were dark-brown, ρ equalled 0.007⁷ to 0.0006, Laue patterns taken after annealing for 24 hours at $t_{\text{max}} = 1200^\circ\text{C}$ with subsequent slow cooling indicate the presence of tension and twinning. More perfect crystals were grown from charges produced by the oxalate method. In this paper the method of preparing such charges and some data on the electric properties of the produced single crystals are given. The preparation of SrTiO_3 from strontium oxalate and titanate was as follows. The saturated³ solution of distilled TiCl_4 was prepared by gradual addition of the latter to water. It was experimentally

Card 1/6

277

Producing single crystals of SrTiO_3 S/070/61/006/903/009/009
E073/E535

established that saturation was reached when about 40 ml TiCl_4 was added to 100 ml of water. The concentration of the obtained solution was determined by precipitating titanium with ammonia and subsequent weighing in the form of TiO_2 . Then, a 25% solution of SrCl_2 was prepared and both solutions were mixed, the obtained cold mixture was poured into a prepared 10% solution of hot ammonium oxalate. For neutralizing the forming oxide, ammonia was added until a smell could be detected. The obtained precipitate of a double salt of Sr and Ti oxalate was washed in water to remove chlorine, dried and sintered at 450°C for one hour so as to obtain SrTiO_3 . After sintering, the powder was crushed in a porcelain mortar to such a size that it should pass through a sieve with 1000 holes per cm^2 . Single crystals of SrTiO_3 were grown according to the Verneuil method in a corundum furnace. SrTiO_3 forms with silit rods, which are used as supports, easily fusible compounds, as a result of which the base of the crystal becomes soft. To prevent this, the base of the cone of the charge should be located in a zone with sufficiently low temperature. It was established experimentally that the base of the cone should be at a distance of 3 cm from the top at the instant of formation of a

Card 2/6

12708

Producing single crystals of SrTiO_3 S/070/61/006/003/009/009
E073/E535

drop on it ($t \approx 2000^\circ\text{C}$), therefore, prior to drop formation, the charge cone was 3 cm high. In a number of experiments bases were used which were made of pressed SrTiO_3 powder sintered at 1400°C . The crystals were grown without germinations at an average speed of 10 to 30 mm/hour. The flame conditions varied from a reducing one to an oxidizing one. Under oxidizing conditions, bright transparent crystals 30 mm long with a diameter of over 5 mm were produced. The reflection index determined by the immersion method equalled 2.39. According to spectrum analysis, the contents of the admixtures did not exceed the following values in %: Mg - 0.006, Si - 0.006, Al - 0.01, Fe - 0.003. The produced single crystals were annealed to remove internal stresses. Then, slices $0.5 \times 5 \times 1$ mm were cut perpendicular to the axis of growth. Silver electrodes were burned on after the coherence of the surface had been checked by a microscope. The dielectric constant varied between 315 and 320 and was independent of frequency. At sonic frequencies $\text{tg } \delta$ did not exceed 0.004. Fig. 1 shows the dependence of ϵ and $\text{tg } \delta$ on the temperature for SrTiO_3 single crystals at the frequencies 200 c.p.s., 1 and 5 kc/s for the values denoted by 1, 2, 3 and 1', 2', 3' in Card 3/6

Producing single crystals of

2212F
S/070/61/006/003/009/009
E073/E535

X

the plot. At temperatures below 77°K a sharp increase in ϵ was observed. In the range 3 to 4°C above the liquid helium temperature ϵ remains practically constant, reaching a value of about 15 000. The temperature dependence of $\text{tg } \delta$ is characterized by a very pronounced maximum (at $T = 13^\circ\text{K}$), the position of which is practically independent of frequency. In the temperature range 48 to 98°K a second, weak maximum was observed for $\text{tg } \delta$, which shifts towards higher temperatures with increasing frequency. Investigation of the dielectric hysteresis was at 293, 77, 4.2 °K. No hysteresis loops were detected at room temperature and liquid nitrogen temperature. The maximum potential of the electric field in these cases did not exceed 30 kV/cm. The results obtained at liquid helium temperature are plotted in Fig. 2 (graph 1 - $E = 1$ kV/cm, graph 2 - $E = 3$ kV/cm, graph 3 - $E = 5$ kV/cm). They show that, at this temperature, the hysteresis loop is very narrow without a pronounced saturation. Due to breakdown of the investigated specimens, the authors were unable to observe hysteresis loops at higher field strengths. Work is proceeding on elucidating the influence of the purity of single crystals on their dielectric

Card 4/6

Producing single crystals of ...

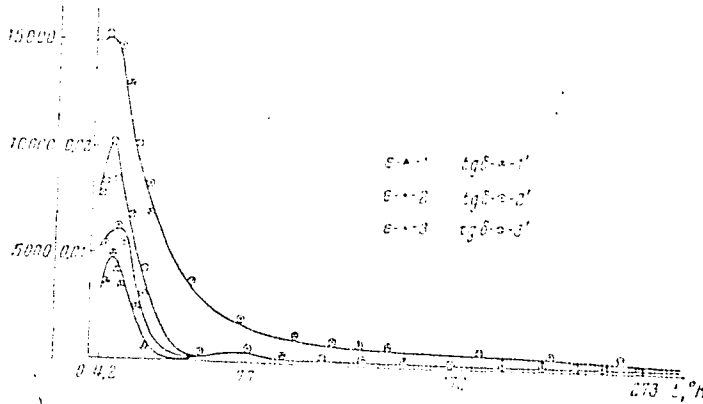
7/070/41/006/006/006/006
E073/0535

properties and the dependence of the latter on various small additions. There are 2 figures and 1 Soviet reference.

ASSOCIATION: Fizicheskii institut imeni P. N. Lebedeva
(Physics Institute imeni P. N. Lebedeva)

SUBMITTED: July 27, 1960

Fig. 1



Card 5/6

L 50732-65 EWT(m) Feb DIAAP

ACCESSION NR: AP5016339

PO/0046/65/010/002/0113/0130

15
B

AUTHOR: Radwan, Maciej (Radwan, M.); Golinczak, Henryk (Golin'shak, G.); Stasiuk, Jerzy (Stasyuk, G.); Krzysiak, Barbara (Kshysyak, B.)

TITLE: Indirect method determining the contamination of ground with fall-out

SOURCE: Nukleonika, v. 10, no. 2, 1965, 123-130

TOPIC TAGS: strontium, isotope, radioactive contamination, radioactive fallout

ABSTRACT: The concentration of strontium-90 in horns of stags derived from various places and several years was investigated. Pieces of horns were burned and samples were prepared from ash. The activity of those specimens (dry and liquid) was measured by use of several counters. It was found that the concentration of strontium-90 in horns grows with time. This can be taken as a criterium of ground contamination by fallout. Orig. art. has 2 tables and 1 graph.

ASSOCIATION: Wojskowa Akademia Techniczna, Warsaw (Military Engineering Academy)

SUBMITTED: 24Apr64

ENCL: 00

SUB CODE: NP

NO REF SOV: 000

OTHER: 004

MI

Card 1/1 *me*

GOLINENKO, A.V., inzhener.

Increase the efficiency of excavator machinery. Gor.khoz.Mosk. 25 no.10:35-
37 0 '51. (MLRA 6:11)

(Excavating machinery)

GOLINENKO, A.V., inzh.

Motor cranes for building and assembling operations, Mekh.
stroi. 17 no.6:8-12 Je '60. (MIRA 13:6)
(Cranes, derricks, etc.)

KAMENSKIY, M.D.; GOLINETS, M.V., redaktor; ZABRODINA, A.A., tekhnicheskiy redaktor.

[Electric systems] Elektricheskie sistemy. Izd. 2-oe, perer. 1
dop. Leningrad, Gos. energeticheskoe izd-vo, 1952. 248 p.[Photostat]
(Electric networks) (MLRA 8:2)

AUTHOR: Golubits, M. V., Engineer JUV/ 148-50-7-26/72

TITLE: All Union Scientific-Technical Conference on the Electrification of Towns and Rural Districts of the USSR (Vsesoyuznoye nauchno-tekhnicheskoye novoshchaniye po elektrifikatsii gorodov i rayonov SSSR)

PERIODICAL: Elektrichestvo, 1958, Nr 7, pp. 10 - 10 (USSR)

ABSTRACT: The conference was convened in May, 1958, by the Central Board of Directors of the MTOEP together with the Institute of Power Engineering AS USSR in Leningrad. 424 persons from 100 cities attended the conference. Furthermore representatives of 60 Sovnarkhomy, of the Ministry of Electric Power Stations, of the State Scientific-Technical Committee Attached to the Council of Ministers of the USSR and to the Councils of Ministers of the Union Republics (Gosudarstvennyy nauchno-tekhnicheskyy Komitet Soveta Ministrov SSSR) of the Gosplans of the union- and autonomous republics, of the planning- and scientific research institutes. 10 reports were delivered. I. A. Syromyatnikov (State Scientific-Technical Committee Attached to the Council of Ministers of the USSR) spoke about the "Fundamental Problems of the Electri-

Card 1/4

All Union Scientific-Technical Conference on the Electrification of Towns and Rural Districts of the USSR: 1954-1957-26/32

fication of the Country". S.R.Kazachenko (Teploelektroproyekt) reported on the results of the work carried out by the Teploelektroproyekt on the basis of the scheme for the development of the power engineering of the USSR till 1970. D.G. Kotilevskiy (Ministry of Electric Power Plants USSR) reported on the functions of the ministry at the time after the reorganisation of the industrial administration. Ya.M.Chervonenkis (Giprokommunenergo) reported on the electric supply of towns and of workmen's colonies of the RSFSR. Ye.O.Shteyngauz, Moscow Engineering Economics Institute (Moskovskiy inzhenerno-ekonomicheskii institut) dealt with several problems concerning the planning of the electric supply of the cities. G.V.Sheremet'yev (Giprosel'elektro) reported on the basic scheme for the electric energy supply of agriculture in the USSR during the coming 10 - 15 years which had been worked out from 1954 to 1955 in the Giprosel'elektro and defined precisely in 1957. S.M.Rozhkov (Institute of Power Engineering AS USSR) dealt with the electric supply of agricultural consumers by means of the electric-supply lines of a.c.powered railway. S.D.Volobrin'skiy, Leningrad Institute of Railway Engineers (Leningradskiy institut inzhenerov zheleznodorozhnogo transporta) reported on

Card 2/4

All Union Scientific-Technical Conference on the 337/15-58-7-26/72
Electrification of Towns and Rural Districts of the USSR

the possibility of taking energy immediately from the electric-supply line of railways powered with a.c. of industrial frequency. V.M.Mikhaylova, Leningrad Polytechnical Institute (Leningradskiy politekhnicheskii institut) reported on the analysis of the technical-economic parameters in the electric supply of remote regions on the basis of tap lines from the electric supply network. Yu.Ya.Mazur, Institute of Power Engineering, Latvia SSR (Institut energetiki i elektroniki Latvyskoy SSR) dealt with problems which result from the operation of small power plants in energy systems. The discussions were attended by: I.A.Nikulin (Sovmarkhoz, Krasnoyarsk), G.V.Komarov (Sovmarkhoz, Tatar ASSR), M.D.Garnichtoyn (Sovmarkhoz, Novosibirsk), A.M.Sarkisyan (Glavsvyaz' elektro), J.D. Polykovskiy (Sovmarkhoz, Leningrad), G.V.Smirnov (Ministry of Electric Power Stations USSR), M.D.Kamenskiy (Leningrad Polytechnical Institute), G.V.Vonyatytskiy (Gosplan, Latvia SSR), Yu.K.Stolyarov (Sovmarkhoz, St. Petersburg), G.C.Lovit (Central Administration of the NTOER), V.V.Besluykas (Sovmarkhoz, Lithuania) and others, altogether 32 persons.

Card 3/4

All Union Scientific-Technical Conference on the Electrification of Towns and Rural Districts of the USSR 30/105-58-7-20/52

1. Electric power production--USSR 2. Conferences

Card 4/4

BASOV, A.N.; GOLINEV, M.P.; GUTTSAYT, Z.I.; PAZHITNOV, V.N.

Classification of crude oils according to quality and the differentiation of their prices. Khim.i tekhn.topl. i masel 7 no.11:45-50 N '62.

(MIRA 15:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gazov i polucheniyu iskusstvennogo zhidkogo topliva.

(Petroleum--Prices)

GOLINEVICH, Ye. M., Ziredeovsky, P. F.

"Experimental Analysis of the Action of Antimeningococcus Serum"

SOURCE: Arkhiv Biol. Nauk, Ser. Biol., 1934 (2)

GOLINEVICH, Ye. M.; Zdrodovsky, P. F.

"Further Observations on Peritoneal Rickettsiosis in Guinea-pigs" in: RICKETTSIAE AND RICKETTSIOSIS, 1948, pp 151-155.

MD 581 61

GOLINEVICH, Ye. M.; Zdrodovsky, P. F.

"Immunity to Typhus Infection," in RICKETTSIAE AND RICKETTSIOSES, 1948, pp 194-199

MD DSI 61

GOLENYVICH, Ye. M.; Zdrodevsky, P. F.

"Experimental Observations on Marseilles Fever," in RICKETTSIAE AND RICHETSIOSIS, 1948,
pp 216-244.

MD DSI 61

GOLINSWITCH, ^{Yc.} M.

"Sur le systeme de rickettsioses a tiques"

Journal Microbiol, Epidemiol et Immunol, No 10, pp 23-36, 1949

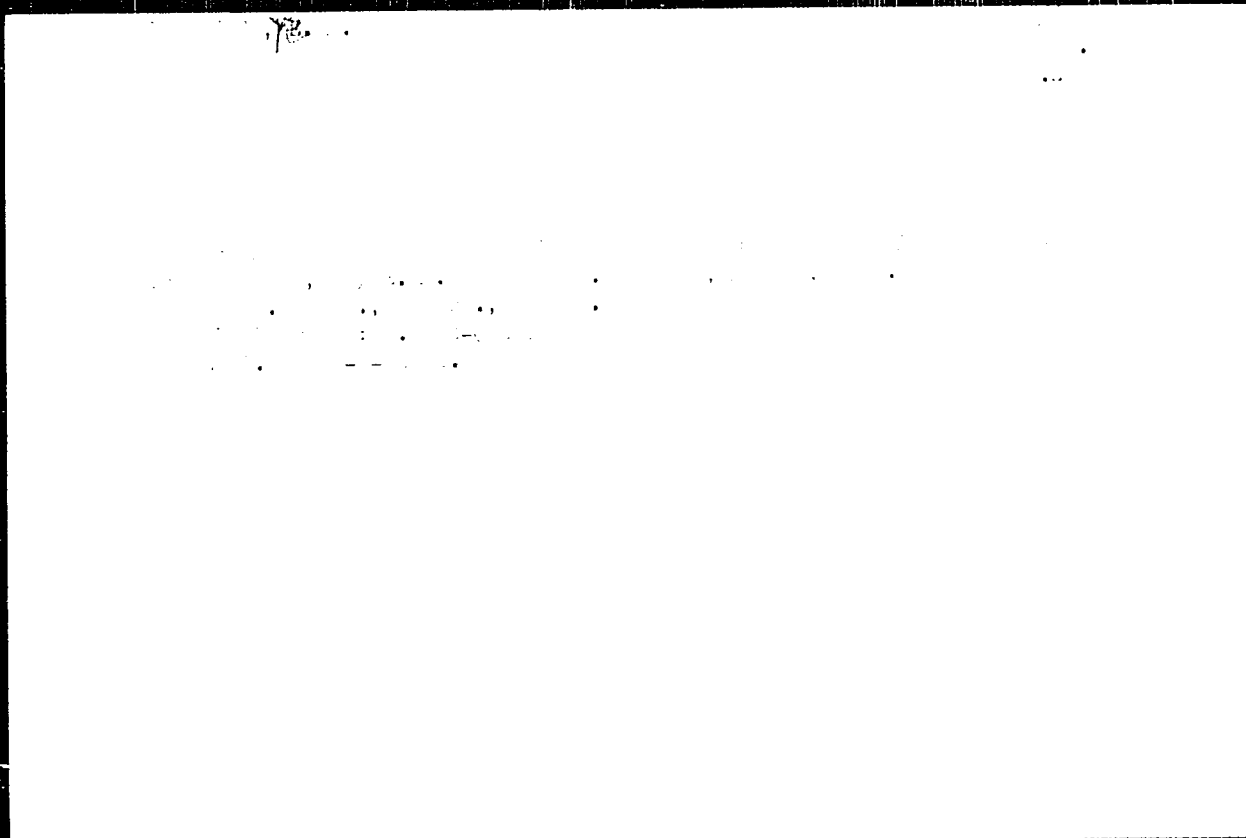
B-89335

GOLINEVICH, Ye. M.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1953)

<u>Name</u>	<u>Title of Work</u>	<u>Instituted by</u>
Golinevich, Ye. M.	"Teaching on Rickettsiae and Rickettsioses"	Institute of Epidemiology and Microbiology named N. G. Gamaley, Academy of Medical Sciences USSR

SO: W-30604, 7 July 1954



GOLINEVICH, Ye.M.

Dry corpuscular rickettsial antigens. Zhur.mikrobiol. epid. i
immun. no.6:35-40 Je '55. (MLRA 8:9)

1. Iz otdela rikketsiozov (zav.-prof. P.F. Zdradovskiy) Instituta
epidemiologii i mikrobiologii imeni N.F. Gamalei AMN SSSR
(dor-prof. G. V.Vygodchikov)

(RICKETSIA,
antigens)
(ANTIGENS AND ANTIBODIES,
Rickettsia antigens)

GOLINEVICH, Ye. M.

"Dry Corpuscular Antigens Derived From Rickettsia." Proceedings of Inst. Epidem and Microbiol in. Gornoye 1954-56.

Division of Rickettsiosis, Zdrodevskiy, P. F., Active Member of Academy of Medical Sciences USSR, Professor. head. Inst. Epidem and Microbiol in. Gornoye AME USSR.

SO: Sum 1186, 11 Jan 57.

ZDRODOVSKIY, P.F., redaktor; GOLINEVICH, Ye.M., redaktor

Российский институт эпидемиологии и микробиологии
[Theories of Rickettsia and rickettsiosis] Uchenie o rickettsiakh i
rickettsiozakh. Izd.2., perer. i dop. Moskva, Medgiz, 1956. 491 p.

(RICKETTSIA)

(MLBA 9:12)

ZDRODOVSKIY, P.F., GOLINEVICH, Ye.M. YABLONSKAYA, V.A.

Characterization of the E strain of *Rickettsia prowazekii* and its pathogenic properties [with summary in English]. *Vop.virus.* 3 no.3:136-142
My-Je '58 (MIRA 11:7)

1. Otdel rickettsiozov Institute epidemiologii i mikrobiologii imeni
N.F. Gamalei AMN SSSR, Moskva.
(RICKETTSIA, PROWAZEKII,
characterization & pathogen. properties of new strain.
(Rus))

ZDRODOVSKIY, P.F., GOLINEVICH, Ye.M.

Differentiation of organisms causing Kenya tick typhus and Indian tick typhus. [with summary in English]. Vop.virus 3 no.4:202-206
Jl-Ag '58 (MIRA 11:9)

1. Otdel rikketsiozov Instituta epidemiologii i mikrobiologii
imeni N.F. Gamalei AMN SSSR, Moskva.

(RICKETSIA.

differentiation of strains causing Kenya tick typhus
causing Indian tick typhus (Ru))

ZDRODOVSKIY, P.F., GOLINEVICH, Ye.M.

Immunogenic properties of *Rickettsia prowazekii* strain E. [with
summary in English]. *Vop.virus* 3 no.5:266-266 S-C 158 (MRJ 11:10)

1. Otdel rikhetsionov Instituta opeidmiologii i mikrobiologii imeni
N.F. Gamaleya AMN SSSR, Moskva.

(RICKETTSIA PROWAZEKII,

E, immunogenic properties (Ru-))

GOLINEVICH, Ye.M.; GENIG, V.A.

Associated immunization against typhus fever, Q fever, and tick-borne rickettsiosis in northern Asia in experiments on guinea pigs. Vop. virus. 6 no.5:598-602 S-0 '61. (MIRA 15:1)

1. Otdel rickettsiozov AMN SSSR, Moskva.
(RICKETTSIAL DISEASES) (VACCINATION)

GOLINEVICH, Ye.M.; GENIG, V.A.

Associated vaccine against exanthematous typhus and typhus fever and the possibility of decreased reactogenic properties of the vaccine against typhus fever. Vop. virus. 6 no.6:728-732 M-D '61. (MIRA 15:2)

1. Institut epidemiologii i mikrobiologii imeni N.F.Gamalei ANi SSSR.
(TYPHUS FEVER) (TYPHUS FEVER) (VACCINES)

ABELEV, G.I., kand. med. nauk; BUBRINSKAYA, A.G., kand. med. nauk;
GEL'TSER, R.R., prof.; GOLINEVICH, Ye.M., prof.; ZHDANOV, V.M.,
prof.; ZDRODOVSKIY, P.F., prof.; KALINA, G.P., prof.; KAULEN,
D.R., kand. med. nauk; KIKTENKO, V.S., prof.; KRYLOVA, O.P.,
kand. med. nauk; KUCHERENKO, V.D., kand. med. nauk; LOMAKIN,
M.S., kand. med. nauk; MOSING, G.S., doktor med. nauk; PERSHINA,
Z.G., kand. sel'khoz. nauk; PEKHOV, A.P., doktor biol. nauk;
PESHKOV, M.A., prof.; TIKHONENKO, T.I., kand. med. nauk;
TOVARNITSKIY, V.I., prof.; SHEN, R.M., prof.; ETINGOF, R.H.,
kand. med. nauk; KALININA, G.P., prof., nauchnyy red. toma;
ZHUKOV-VEREZHIKOV, N.N., prof., otv. red.; VYGOUDCHIKOV, G.V.,
prof., zamest. otv. red.; TIMAKOV, V.D., prof., zam. otv. red.
BAGRYAN, O.A., prof., red.; KALINA, G.P., red.; PETROVA, N.K.,
tekh. red.

[Multivolume manual on the microbiology, clinia, and epidemiology
of infectious diseases]Mnogotomnoe rukovodstvo po mikrobiologii
klinike i epidemiologii infektsionnykh boleznei. Moskva, Medgiz,
Vol.2. [General microbiology]Obshchaya mikrobiologiya. Red. V.M.
Zhdanov. 1962. 535 p. (MIRA 1b:1)

(Continued on next card)

GOLINEVICH, E.M. [Golinevich, Ye.M.] YABLONSKAYA, V.A.

Live typhus vaccine prepared from strain "E" of Rickettsia
prowazeki. J. Hyg. epidem. 7 no.3:290-300 '63.

1. Gamaleya Institute of Epidemiology and Microbiology, Academy
of Medical Sciences of the U.S.S.R., Rickettsiae Department,
Moscow.

*

HERSCOVICH, I. E.; WILSON, W. M.

"The Report of the CIA."

Report submitted to the Int. Sec. Council, Geneva, 1964, 1-10-64, 1-10-64.

and 1-10-64, 1-10-64, 1-10-64.

ACCESSION NR: AP4022936

S/0248/64/000/003/0049/0058

AUTHOR: Gollinovich, Yo. M.; Fryazimova, I. B.

TITLE: Antigenic and Immunogenic fractions of "whole" antigens from rickettsial cultures grown in chicken embryos

SOURCE: ANN SSSR. Vestnik, no. 3, 1964, 49-58

TOPIC TAGS: rickettsial disease, tick-borne fever, typhus, "whole" antigen, antigen fraction, R. prowazeki, R. mooseri, D. sibiricus, ammonium sulfate precipitation, complement fixing reaction, typhus vaccine, immunogenic property, allergenic property

ABSTRACT: Rickettsial "whole" antigens of typhus and tick-borne spotted fever grown in chicken embryos have been successfully used in direct and differential serodiagnosis. They have been found equal to corpuscular antigens in quality, easier to prepare, and to contain highly immunogenic properties. However, they cannot be recommended as a vaccine because of the considerable admixture of egg protein. In the present study the antigen fractions were isolated from "whole" antigens (R. prowazeki, R. mooseri, and D. sibiricus) by precipitation with varying amounts (15 to 35%) of ammonia sulfate and the antigenic,

Card 1/2

ACCESSION NR: AP4022936

immunogenic, and allergenic properties of the lysate protein fractions and "whole" antigens were compared. Antigen activity was determined by complement fixing reaction. Immunogenic properties were determined by reactions of immunized guinea pigs to virulent culture inoculations a month after immunization. Allergenic properties were based on skin reactions of guinea pigs to subcutaneous injections. Findings show that R. prowazeki "whole" antigens (5.58 mg/ml protein or 798 micrograms/ml nitrogen) precipitated with 25% ammonium sulfate produces the purest antigen fraction with minimum quantities of protein (0.338 mg/ml or 22 micrograms/ml nitrogen) and can be recommended as a typhus vaccine. Antigen fractions of R. prowazeki and D. sibiricus "whole" antigens produced by precipitation with 25 and 35% ammonium sulfate cause specific allergic reactions and can be used as allergens. Orig. art. has: 9 tables.

ASSOCIATION: Institut epidemiologii i mikrobiologii im. N. F. Gamalei, Moscow (Epidemiology and Microbiology Institute)

SUBMITTED: 05Aug63

ENCL: 00

SUB CODE: LS

NR REF SOV: 003

OTHER: 002

Card 1/2

GOLINGER, Rudolf, mgr. inż.

Blast-furnace slag is next. Budown wiejskie 14 no.3126-27 Pr 162

1. Ostrodek Instytutu Techniki Budowlanej, Krakow.

GOLINEA, P.I. [Holinka, P.I.]

Dynamics of pigment accumulation in grape leaves during the
vegetation period, Ukr. bot. zhur. 20 no. 4:40-44 '63.
(MIRA 17:2)

L. Uzhgorodskiy gosudarstvennyy universitet, kafedra fiziolo-
logii rasteniy.

GOLINKA, P.I. [Golinka, P.I.]

Characteristics of the growth of leaves, development of chloroplasts
and accumulation of pigments in grapes depending on pinning. Ukr. bot.
zhur. 21 no.4:33-40 1974. (KIBZ 1974)

I. Kafedra fiziol. rasteniy i zhyvoynskogo gosudarstvennogo
universiteta.

GOLINKER, B.I.

Case of primary cardiac sarcoma. Trudy LSGMI 40:310-314
'58. (MIRA 12:8)

1. Fakul'tetskaya terapevticheskaya klinika Leningradskogo
sanitarno-gigiyenicheskogo meditsinskogo instituta (zav.
kafedroy - prof.A.A.Kedrov). Rukovoditel' raboty - prof.
V.D.Vyshegorodtseva.

(HEART, neoplasms,
sarcoma (Rus))
(SARCOMA, case reports,
heart (Rus))

GOLIKOV, M.S., kandidat tekhnicheskikh nauk.

Interaction of impeller blades. Trudy VNITOSS é no.2:93-97 '55.
(MLR: 10:5)

(Hydraulic turbines)

GOLINKEVICH, N.A.

L.S.Konstantinov's critical article. Lit.proizv. no.9:29-30 S'55.
(Central casting) (MLRA 8:12)

Содержание

123-1-1184

Translation from: Referativnyy Zhurnal, Mashinostroyeniye, 1957,
Nr 1, p. 174 (USSR)

AUTHOR: Goliukevich, N.A.

TITLE: How to Increase the Effectiveness of Guide Nozzles of
Screw Propeller When Reversing (O povyshenii effek-
tivnosti napravlyayushchikh nasadok k grebnym vintam
pri rabote na zadniy khod)

PERIODICAL: Tr. Gor'kovsk. politekhn. in-ta, 1956, 11, Nr 4,
pp.33-52

ABSTRACT: On the basis of results obtained from tests conducted
at the Gor'kiy Polytechnic Institute with several patterns
of nozzles, the author attempts to explain the causes
of a sharp decrease in the thrust of the propulsion unit,

Card 1/2

SOV 124-58-5-5410

Translation from Referativnyy zhurnal, Mekhanika, 1956, Nr 5, p 54 (USSR)

AUTHOR Golinkevich, N.A.

TITLE On One of the Possible Modifications of Impeller-vane-type Propulsors (Ob odnoy iz vozmozhnykh modifikatsiy kryl'chatogo dvizhitelya)

PERIODICAL Tr. Gor'kovsk. politekhn. in-ta, 1956, Vol 12, Nr 3, pp 5-9

ABSTRACT To reduce nonuniformity in the azimuthal cyclic loading of the impeller vanes of vane-type propulsion mechanisms, the author proposes varying the angle of pitch of the impeller blades.

G.I. Mavkapar

1. Impeller--Design

Card 1/1

GOLINKEVICH, N.A., kand.tekhn.nauk

Effect of slot flow on the degree of circulation velocity along
the propeller blade profile in the nozzle. Trudy GPI 14 no.1:
34-37 '58, (MIRA 13:2)
(Propellers) (Hydrodynamics)

ABRAMOV, V.V., kand.tekhn.nauk; AGEYEV, D.V., doktor tekhn.nauk, prof.;
RAMDAS, A.M., doktor tekhn.nauk, prof.; VERZHOVSKIY, A.V., doktor
tekhn.nauk, prof.; GOLINKEVICH, N.A., kand.tekhn.nauk, dots.;
DERTEV, N.K., doktor tekhn.nauk, prof.; MATTES, N.V., doktor tekhn.
nauk, prof.; RYZHIKOV, A.A., doktor tekhn.nauk, prof.; PASYNKOV,
O.N., otv.za vypusk

[New method for calculating thermal stresses] Novyi raschetnyi
metod vychisleniia termicheskikh napriazhenii. Gor'kii, 1958.
57 p. (Gorkiy.Politekhnicheskii institut. Trudy, vol.14, no.3)

(MIRA 13:7)

(Thermal stresses)

GOLINKEVICH, N.A., kand. tekhn. nauk

Determining the optimal dimensions and shapes of the basic
elements in the propeller - nozzle complex. Study GBT 19
no.2121-59 '63. (MIRA 17:10

GOLINKEVICH, T.A.

Calculating the precision of universal joints. Trudy Sem. po toch.mash.
no.4:56-63 '52. (MLHA 6:6)

(Universal joints (Mechanism))

Osnovy proyektirovaniya konstruktsiy i tekhnologicheskikh protsessov v priborostroyenii

AID 539 - X

	Pages
3. Information used in designing instruments of the PUAZO type	11-14
4. Working out of tactical and technical requirements on the instrument	14
5. The choice of hypothesis relative to the movement of the target	14-17
6. The choice of the system of coordinates for the target in PUAZO design	15-17
7. Setting a system of formulae for the apparatus	17-21
8. Setting of the basic layout of the apparatus	21-25
9. Elaborating a kinematic scheme of the apparatus	25-43
10. Design of the follow-up systems	43-51
11. Fundamentals of the precision calculation of the mechanisms	51-67
12. Simplified methods of calculating the error of the position of typical assembled parts of the calculating solving devices	67-79
13. Calculating of the precision of electrical circuits	79-83
14. Taking account of the influence of errors varying during the mechanism's operation	83-85

Osnovy proyektirovaniya konstruktsiy i tekhnologicheskikh protsessov v priborostroyeni:

AID 539 - 7

	Pages
15. Calculation of measured chains	85-90
16. Fundamentals of the calculation of moments and stresses	90-96
17. Shapeing the kinematic layout	96-100
18. Manufacturability of the design	100-102
19. Manufacturability of components	102-104
Ch. II Basic Problems of Machine Shop Practice and Characteristic Methods of Components Manufacture	
1. Basic conceptions and definitions	105-109
2. Importance of manufacturing processes	109-112
3. Dependence of the manufacturing process on the type of production	112-113
4. Initial data and the subsequent working out of manufacturing processes	113-115
5. Manufacturing documentation	115-122
6. Standardization of manufacturing processes	122-128
7. Bases and basic surfaces	129-133
8. Basic information concerning the design of fittings	133-151
9. Basic information on the precision of machining	151-157
10. Methods of study of production errors	157-161

GOLINKEVICH, T. A.

T. A. Golinkevich, "On the Calculation of Accuracy of Complicated Calculators."

On the Calculation of Accuracy of Complicated Calculators

27975
S/194/61/000/004/007/052
D249/D302

16.6800

AUTHOR: Golinkevich, T.A.
TITLE: Some problems in calculating the accuracy of complex computers
PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 4, 1961, 10, abstract 4 B65 (V sb. teoriya mashin avtomat. deystviya i teoriya tochnosti v mashinostri i priborostr., M., Mashgiz, 1960, 152-157)

TEXT: The following topics are of importance in calculating the accuracy of complex computers: 1) The sequence of calculations. The setting-up of equations should be performed in accordance with the programming system of the computer and in the direction from the output towards input. 2) The primary errors should be defined as follows: a) non random errors by definite numerical quantities and relations; b) random quantities by mean value and dispersion; and c) random processes by mean value and spectral density. 3) The

Card 1/2