

Novikova, S. I.

✓ The utilization of phosphoric acid by *Streptococcus lactis* grows in milk. O. V. Kashina and S. I. Novikova. *Microbiol. Zhur., Akad. Nauk Ukr. S.S.R., Ind. Microbiol. im. D. K. Zabolotnogo* 18, No. 3, 37-9 (Russian summary, 30) (1956); cf. *C.A.* 51, 2935c. — A study was made of the content of inorg. phosphoric acid in the fraction of

2

*Inst. Microbiol. AS USSR*

**NOVIKOVA, S.**

F-1

USSR / Microbiology. General Microbiology

Abs Jour : Ref Zhur - Biol., No 2, 1958, No 5082

Author : Novikova, S.

Inst : Not given

Title : Study of Lactase Activity of Streptococcus Lactic. Communi-  
cation 1.

Orig Pub : Mikrobiologichnyi zh., 1956, 18, No 3, 40-44

Abstract : The presence of lactase activity in cultures of *S. lactis* 6.574, 41/48 and L4 was established with the aid of mix-  
tures containing lactose; the first and obligatory step  
of cleavage by action of extracts from cells of *S. lactis*  
is manifested by hydrolysis into glucose and galactose.  
Quantitative determination of these monosaccharides was

USSR/Microbiology. General Microbiology. Physiology and Biochemistry F-1

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 62261

Author : Novikova S.I.

Inst : -

Title : Investigation of the Activity of Lactase of Streptococcus Lactis. Report 2

Orig Pub : Mikrobiol. zh., 1957, 19, No 2, 29-33

Abstract : Fermentation extracts were investigated from cells of *S. lactis*, in strains distinguished by the activity of acid formation. A direct connection was established in the majority of cultures between the activity of acid formation and the activity of lactase. Similarly, in the active acid generator (strain L4), the lactase is not detectable in any of the seasons of the year. These facts are evidence against the existing point of view, that the lactase *S. lactis*

Card : 1/2

NOVIKOVA, S.I. (Novykova, S.I.)

Formation of phosphoric esters by *Streptococcus lactis*.  
Mikrobiol. zhur. 20 no.3:31-36 '58 (MIRA 11:11)

1. Iz Instituta mikrobiologii An USSR.  
(PHOSPHORIC ACID)  
(STREPTOCOCCUS LACTIS)

NOVIKOVA, S.I.

Method of producing the alkaloid nupharine. Mikrobiol. zhur.  
22 no. 1:67 '60. (MIRA 13:10)

(ALKALOIDS) (WATER LILIES)

NOVIKOVA, S.I. [Novykova, S.I.]

Effect of nupharine on the fermentation and respiration of Staphylococcus aureus and Corynebacterium michiganense. Mikrobiol. zhur. 23 no.1:51-56 '61. (MIRA 14:5)

1. Institut mikrobiologii AN USSR.  
(STAPHYLOCOCCUS AUREUS)  
(NUPHARINE)

(CORYNEBACTERIUM)

NOVIKOVA, S.I. [Novykova, S.I.]

Principal course of the synthesis of oligo- and polysaccharides by  
micro-organisms. Mikrobiol. zhur. 23 no.4:58-62 '61. (MIRA 15:4)  
(MICRO-ORGANISMS) (POLYSACCHARIDES)  
(OLIGOSACCHARIDES)

NOVIKOVA, S.I. [Novykova, S.I.]

Fundamental paths in the synthesis of oligosaccharides and polysaccharides by micro-organisms. Mikrobiol. zhur. 23 no.5:65-70 '61.  
(MIRA 14:12)

(MICRO-ORGANISMS)

(POLYSACCHARIDES)



NOVIKOVA, S. I. [Novykova, S. I.]

Action of nupharine on the respiration of some phytopathogenic  
Corynebacteria. Mikrobiol. zhur. 24 no.1:31-37 '62.  
(MIRA 15:7)

1. Institut mikrobiologii AN Ukr-SSR.

(CORYNEBACTERIUM) (NUPHARINE)

NOVIKOVA, S.I.

Transgalactosylase activity of *Streptococcus lactis*.  
Bibkimiia 28 no.1:13-17 Ja-F '63. (MIRA 1614)

1. Institut mikrobiologii imeni D.K.Zabolotnogo AN UkrSSR,  
Kiyev.

(TRANSGALACTOSIDASE) (STREPTOCOCCUS LACTIS)

NOVIKOVA, S.I. [Novykovu, S.I.]

Effect of enviromental conditions on some aspects of carbohy-  
drate metabolism in Streptococcus lactis. Mikrobiol. zhur. 27  
no.1:71-76 '65. (MIRA 18:7)

1. Institut mikrobiologii i virusologii AN UkrSSR.

NOVIKOVA, S.I. [Navykova, S.I.]

Isolation in pure form and study of the products of transgalactosylation of *Streptococcus lactis*. Mikrobiol. zhur. 37 no.2:15-17 '65. (MIRA 18:5)

1. Institut mikrobiologii i virusologii AN UkrSSR.

NOVIKOVA, S.I. [Novykova, S.I.]

Role of hydrolytic and transgalactosidase processes in the course of lactic acid fermentation under the influence of *Streptococcus lactis*. Mikrobiol. zhur. 27 no.4:3-10 '65.  
(MIRA 18:8)

1. Institut mikrobiologii i virusologii AN UkrSSR.

NOVIKOVA, S.I.

STREBKOV, P.G.; NOVIKOVA, S.I.

Quartz dilatometers used in low temperatures. 1. Heat expansion  
of copper and aluminum. Prib. i tekhn. eksp. no.5:105-110 3-0 '57.  
(MIRA 10:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut fiziko-tekhnicheskikh  
i radiotekhnicheskikh izmereniy.  
(Dilatometer) (Metals at low temperatures)

LEKSINA, I.Ye.; NOVIKOVA, S.I.

Thermal expansion of fluoreplast IV (polytetrafluoroethylene)  
between -190 and 325°C. Fiz. tver. tela 1 no.3:504-511 Nr '59.  
(MIRA 12:5)

(Ethylene--Thermal properties)

NOVIKOVA, S.I.; SERELKOV, P.G.

Thermal expansion of silicon at low temperatures. Fiz.tver.tela  
1' no.12:1841-1843 D '59. (MIRA 13:5)

1. Vsesoyuznyy institut fiziko-tekhnicheskikh i radiotekhnicheskikh  
issledovaniy. (Silicon--Thermal properties)



31257  
S/181/60/002/01/08/035  
B008/B011

24.7600

AUTHOR: Novikova, S. I.

TITLE: Heat Expansion of Germanium at Low Temperatures

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 1, pp. 43 - 44

TEXT: The author investigated the temperature dependence of the coefficient of thermal expansion  $\alpha$ . The measurements were made with an improved quartz dilatometer earlier described (Ref. 4).  $\alpha$  was calculated from experimental data. The temperature ranges did not exceed  $10^{\circ}\text{K}$  in the measurement. Two germanium crystals, sufficiently pure for the requirements of the semiconductor technique, were investigated. The one had the form of a parallelepipedon, the other had an irregular form. The results of 16 series of measurements are given (Fig. 1). Fig. 2 compares these results with the averaged curve  $\alpha = f(T)$ . This corresponds to experimental data in Fig. 1. It was ascertained that germanium has a negative coefficient of thermal expansion at  $T < 48^{\circ}\text{K}$ . The author thanks Professor P. G. Strelkov for his interest in this investigation.

Card 1/2

81257

Heat Expansion of Germanium at Low Temperatures S/181/60/002/01/08/035  
B008/B011

There are 2 figures and 5 references: 2 Soviet.

SUBMITTED: May 4, 1959

4

Card 2/2

81,986

S/181/60/002/007/044/047/KK  
B006/B067

24.7600 (1043, 1160, 1137)

AUTHOR: Novikova, S. I.TITLE: Thermal Expansion of Diamond From 25 to 750°K

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 7, pp. 1617-1618

TEXT: Investigations of the thermal expansion of silicon and germanium indicated that in the low-temperature range the expansion coefficient  $\alpha$  remains negative; since both crystallize in diamond structure, the author examined whether this holds also for diamond, i.e., whether the anomalous course of  $\alpha$  is related to the crystallographic structure. The data available in publications on  $\alpha(T)$  of diamond are contradictory. The author studied two natural diamonds (made available by the Institut fizicheskikh problem AN SSSR (Institute of Physical Problems AS USSR) and the Institut kristallografii. (Institute of Crystallography); the author thanks L. M. Belyayev and V. P. Panova in the direction of their longest diameter (4.63, 7.25 mm, respectively).  $\alpha$  of the first diamond was measured in the range from 20 to 750°K, and of the second one in the range from 20 to 350°K. The results of 14 series of measurements are illustrated

Card 1/2

54950

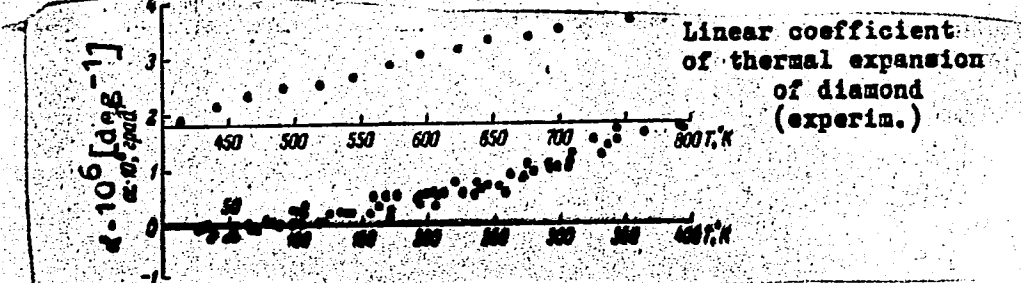
Thermal Expansion of Diamond From  
25 to 750°K

S/181/60/002/007/044/047/XX  
B006/B067

in a diagram; it may be seen that the effect is very low. Finally, the author thanks Professor P. G. Strelkov for his interest and advice. Dembovskaya is mentioned. There are 1 figure and 9 references: 2 Soviet, 3 German, and 4 US.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy Moskva (All-Union Scientific Research Institute of Physics, Technology and Radio Engineering Measurements, Moscow)

SUBMITTED: November 4, 1959



Card 2/2

NOVIKOVA, S.I.

Thermal expansion of  $\alpha$ -Sn, InSb, CdTe. Fiz. tver tela 2 no.9:2341-  
2344 S '60. (MIRA 13:10)  
(Tin) (Indium antimonide) (Cadmium telluride)

NOVIKOVA, S.I.

Thermal expansion of some engineering materials at low temperatures. *Frib. i tekhn. eksp. no.3:147 My-Je '60. (MIRA 14:10)*

1. *Vsesoyuznyy nauchno-issledovatel'skiy institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy.*  
(Metals at low temperatures)

S/181/61/003/001/022/042  
B006/B056AUTHOR: Novikova, S. I.

TITLE: Study of the thermal expansion of GaAs and ZnSe

PERIODICAL: Fizika tverdogo tela, v. 3, no. 1, 1961, 178-179

TEXT: The present paper is a continuation of those papers (Refs. 1-4), in which the thermal expansion of elements and compounds has been studied, which crystallize with a diamond structure. The investigations, whose results are given here, were carried out by means of a quartz dilatometer described in Ref. 5. The GaAs specimens were molten from spectrally pure components, and consisted of several irregular, intergrown crystals having a maximum dimension of  $l_0 = 9.46$  mm. Fig. 1 shows  $\alpha(T)$  for GaAs, determined in the course of 5 series of measurement. As may be seen,  $\alpha$  decreases with decreasing T, passes through zero at  $T \approx 55^\circ\text{K}$ , and then continues having negative values. The lowest  $\alpha$ -value was measured at  $T \approx 40^\circ\text{K}$  and amounted to  $-0.5 \cdot 10^{-6} \text{deg}^{-1}$ . The ZnSe specimens were pressed in a nitrogen atmosphere in the form of 4.78 mm long cylinders and were tempered at  $1350^\circ\text{C}$ . ✓

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S/181/61/003/001/022/042  
B006/B056

## Study of the thermal expansion..

These specimens were prepared at the problemnaya laboratoriya chistykh metallov, metallicheskih soyedineniy i poluprovodnikov Krasnoyarskogo instituta tsvetnykh metallov im. M. I. Kalinina (Laboratory for Problems of Pure Metals, Metal Compounds, and Semiconductors of the Krasnoyarsk Institute of Nonferrous Metals imeni M. I. Kalinin) by assistant E. Kruchean. The purity of the initial components was 99.9996% (Zn) and 99.992% (Se). Fig. 2 shows  $\alpha(T)$  (6 series of measurement).  $\alpha$  passes through zero at  $T \approx 64^\circ\text{K}$ , and attains the lowest value at  $36^\circ\text{K}$ , where  $\alpha_{\text{min}} = -3.10 \cdot 10^{-6} \text{ deg}^{-1}$ . A comparison between the  $\alpha(T)$  curves for GaAs, ZnSe, and Ge shows that they coincide for Ge and GaAs, and that the curve of Ge is somewhat higher only in the negative. A comparison of the numerical values in the table shows that in the isoelectronic series of Ge  $\rightarrow$  ZnSe the ion component in the binding forces increases. An analogous result was obtained for the isoelectronic series of  $\alpha$ -Sn. The author thanks Professor P. G. Strelkov for interest and discussions.

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S/181/61/003/001/022/042  
B006/B056

Study of the thermal expansion...

Substance	T <sub>trans</sub> , °K	$\lambda$ min $\cdot 10^5 \text{ deg}^{-1}$
Ge	48	-0.040
GaAs	55	-0.050
ZnSe	64	-0.310

There are 3 figures, 1 table, and 5 Soviet-bloc references.

SUBMITTED: June 13, 1960

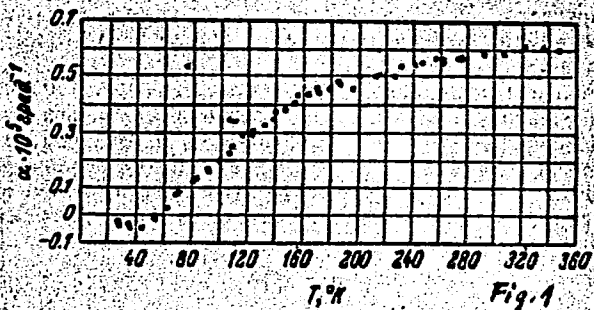


Fig. 1

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Study of the thermal expansion...

S/181/61/003/001/022/042  
B006/B056

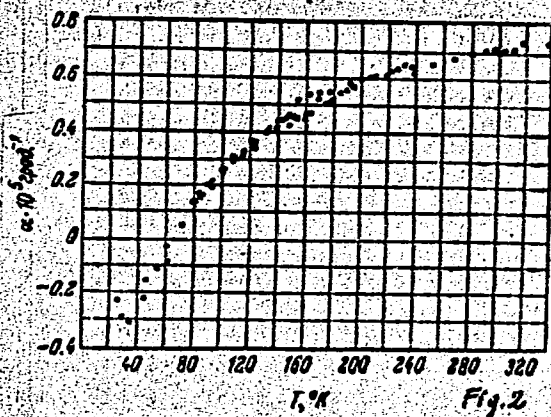


Fig. 2

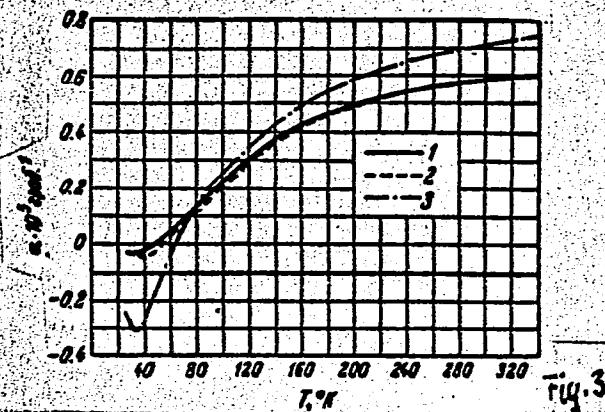


Fig. 3

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S/181/63/005/004/019/047  
B102/B186

AUTHORS: Leksina, I. Ye., and Novikova, S. I.

TITLE: Investigation of the thermal expansion of copper, silver and gold in a wide temperature range

PERIODICAL: Fizika tverdogo tela, v. 5, no. 4, 1963, 1094 - 1099

TEXT: The thermal expansion coefficients  $\alpha$  were measured for Cu, Ag and Au in the range 20 - 1200°K, and, using the relation  $\alpha = \gamma c_v \chi_T / 3V$ , the Grüneisen coefficient  $\gamma$  was calculated:  $\chi_T$  denotes the compressibility for  $T = \text{const}$  and  $V$  is the atomic volume. In the environment of the Debye temperature ( $T \approx \theta$ )  $\gamma$  is a constant defined by  $\gamma = -\partial \log \theta / \partial \log V$ ; it amounts to 2.0 (Cu), 2.4 (Ag) and 3.0 (Au). For  $T < 0.3 \theta$  and  $T > 2\theta$   $\gamma$  is temperature-dependent. From the deviation of the experimental values of  $\gamma$  from the theoretical in the range  $T > 2\theta$  the energy of vacancy formation is calculated; it was found to equal 12.41 kcal/mole (Cu), 11.76 kcal/mole (Ag) and 12.96 kcal/mole (Au). The fact that  $\alpha$  increases with  $T$  in the case of high temperatures ( $T > 2\theta$ ) much more rapidly than at low temperatures is due to the effect of lattice structure distortions which become considerable from Card. 1/2

Investigation of the thermal...

S/181/63/005/004/019/047  
B102/B186

T - 20 on. There are 4 figures and 2 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut fiziko-  
tekhnicheskikh i radiotekhnicheskikh izmereniy Mendeleyevo,  
Moskovskoy oblasti (All-Union Scientific Research Institute of  
Physicotechnical and Radiotechnical Measurements, Mendeleyevo,  
Moscow oblast')

SUBMITTED: November 9, 1962

Card 2/2

L 18124-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD/RDW  
ACCESSION NR: AP3003888 s/0181/63/005/007/1913/1916

AUTHORS: Novikova, S. I.; Abrikosov, N. Kh.

TITLE: Investigation of thermal expansion in PbS, PbSe, and PbTe 60  
59

SOURCE: Fizika tverdogo tela, v. 5, no. 7, 1963, 1913-1916

TOPIC TAGS: thermal expansion, Pb, S, Se, Te, Grüneisen constant, elongation

ABSTRACT: This work was undertaken because of meager study previously made on the thermodynamic properties of semiconductors. The authors devote themselves to an investigation of thermal expansion in the range from 20 to 300K. The coefficient of linear elongation was measured, and from this value the Grüneisen constant was computed. Figure 1 (see Enclosure 1) shows the dependence of linear elongation,  $\alpha$ , on temperature for PbS. The curves for PbSe and PbTe are very similar. Figure 2 (see Enclosure 2) shows the dependence of the Grüneisen constant,  $\gamma$ , on temperature for all three compounds. It is seen that  $\gamma$  increases with drop in temperature. The authors thank Z. F. Gulinitzyna and L. Ye. Glukhikh for furnishing the samples. Orig. art. has: 4 figures, 1 table, and 4 formulas.

ASSOCIATION: Institut metallurgii im. A. A. Baykova AN SSSR, Moscow (Institute of

Card 1/1

L 18722-63

EMP(q)/EMT(m)/BDS AFFTC/ASD RDW/JD

ACCESSION NR: AP3005320

S/0181/63/005/008/2138/2140

AUTHORS: Novikova, S. I.; Abrikosov, N. Kh,

61  
60

TITLE: Thermal expansion of AlSb, GaSb, ZnTe, and HgTe at low temperatures

SOURCE: Fizika tverdogo tela, v. 5, no. 8, 1963, 2138-2140

TOPIC TAGS: thermal expansion, Al, Sb, Ga, Zn, Te, Hg, low temperature, solid state, interaction, zero vibration

ABSTRACT: The authors made their study of thermal expansion in the temperature range from 20 to 340K. They used coarsely crystalline material of irregular form, the greatest dimension ranging from 9.27 mm in ZnTe to 16.55 mm in AlSb. They established the fact that the coefficient of thermal expansion becomes negative at low temperature. This is most clearly shown in the behavior of AlSb, shown in Fig. 1 (see enclosure). The temperature values at which the coefficient changes sign are 85K for AlSb, 52K for GaSb, 46K for ZnTe, and 62K for HgTe. The authors have examined the solid-state equation for this reversal and have shown that when the coefficient is negative the interaction of atoms in a state of zero vibration must be at a minimum during any change in volume. Orig. art. has:

Card 1/02

L 18722-63

ACCESSION NR: AP3005320

4 figures and 6 formulas.

ASSOCIATION: Institut metallurgii im A. A. Baykova AN SSSR, Moscow (Institute of Metallurgy, Academy of Sciences, SSSR)

SUBMITTED: 01Mar63

DATE ACQ: 06Sep63

ENCL: 01

SUB CODE: PH

NO REF SOV: 004

OTHER: 000

Card 2/02

ACCESSION NR: AP4011788

S/0181/64/006/001/0333/0333

AUTHOR: Novikova, S. I.

TITLE: Effect of impurities on the thermal expansion of silicon

SOURCE: Fizika tverdogo tela, v. 6, no. 1, 1964, 333

TOPIC TAGS: impurity, thermal expansion, silicon, n type silicon, p type silicon, carrier concentration, donor, semiconductor

ABSTRACT: The author's purpose was to test the conclusion of T. A. Kontorova (Fiz. Tverd. Tela, 4, 3328, 1962) that the introduction of donors into a semiconductor leads to an increase in thermal expansion. She tested two samples of Si: one p-type with a carrier concentration of about  $10^{17}\text{cm}^{-3}$  and one n-type with a carrier concentration near  $10^{19}\text{cm}^{-3}$ . The results are shown in Fig. 1 on the Enclosure in comparison with a curve for pure Si. The accuracy of measuring thermal expansion in these experiments was + 3%. The author concludes that T. A. Kontorova's proposed effect may be expected at temperatures above 340K and for samples with carrier concentrations exceeding  $10^{19}\text{cm}^{-3}$ . Orig. art. has: 1 figure.

Card 1/32



ACCESSION NR: AP4011788

ASSOCIATION: Institut metallurgii im. A. A. Baykova, Moscow (Institute of Metallurgy)

SUBMITTED: 11Sep63

DATE ACQ: 14Feb64

ENCL: 01

SUB CODE: PH

NO REF SOV: 003

OTHER: 000

Card 2/32

L 6327-66 EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD

ACCESSION NR: AP5019869

UR/0181/65/007/008/2493/2495

AUTHOR: ~~Novikova, S. I.~~

TITLE: Influence of active impurities on the thermal expansion of silicon 27

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2493-2495

TOPIC TAGS: silicon, impurity center, thermal expansion

ABSTRACT: The author has measured the coefficient of expansion of six samples of silicon with different content of impurities and dislocations. The impurity concentration ranged from  $\sim 10^{12}$  to  $\sim 10^{19}$  and the dislocation density from 0 to  $\sim 10^7$ . The results indicate that introduction of active impurities into silicon leads to a slight decrease of the expansion coefficient ( $|\delta\alpha| \sim 10^{-7} \text{ deg}^{-1}$ ), which is observed in the temperature range 90--160K, in which the expansion coefficient  $\alpha$  reverses sign. The minimum value of the expansion coefficient does not depend on the degree of doping of the sample. The dislocations have a similar effect on the expansion coefficient. The experimentally obtained value of  $\delta\alpha$  agrees with the value predicted by the theory. Since the effect is at the limit of sensitivity of the experimental methods employed, all that can be concluded is that the effect exists, and no quantitative investigation is possible by this method. Orig. art. has: 3 figures.

Card 1/2

09020018

L 6327-66

ACCESSION NR: AP5019869

ASSOCIATION: Institut metallurgii im. A. A. Baykova, Moscow (Institute of Metallur-  
gy) <sup>3</sup>

<sup>55,44</sup>  
SUBMITTED: 25Mar65

ENCL: 00

SUB CODE: SS

NR REF SOV: 004

OTHER: 002

nw

Card 2/2

L 8594-66 EWT(m)/EWG(m)/EWP(b)/EWP(t) YJP(c) RDW/JD

ACCESSION NR: AP5019885

UR/0181/65/007/008/2544/2545

AUTHOR: Novikova, S. I.; Shelinova, L. Ye.

TITLE: Phase transition in  $\text{SnTe}$

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2544-2545

TOPIC TAGS: tin compound, telluride, solid solution, phase transition, thermal expansion, crystal lattice structure

ABSTRACT: To check on similarities between  $\text{SnTe}$  and  $\text{GeTe}$ , with which it forms a continuous series of solid solutions, the authors investigated the thermal expansion of  $\text{SnTe}$ , with particular attention to temperatures near 100K, where a polymorphic transition was expected. The measurements were made with a quartz dilatometer from 20 to 300K. The samples were prepared from high purity tin containing less than  $10^{-3}\%$  impurities, and A-1 tellurium purified by double vacuum distillation. Two samples were tested containing 50.4 at.%Te, in the form of cylinders 16.07 and 10.86 mm long. A plot of the results is shown in Fig. 1 of the Enclosure. The dip at 75K can be related to the expected polymorphic transition in  $\text{SnTe}$  from the rhombohedral low temperature modification to the cubic high temperature modification. Orig. art. has: 1 figure.

Card 1/3

51  
49  
B

Z

L 8594-66

ACCESSION NR: AP5019885

ASSOCIATION: Institut metallurgii im. A. A. Baykova, Moscow (Institute of Metallurgy) 2

SUBMITTED: 25Mar65

ENC: 01

SUB CODE: SS

NR REF SOV: 002

OTHER: 002

Card 2/3

L 8594-66

ACCESSION NR: AP5019885

ENCLOSURE: 01

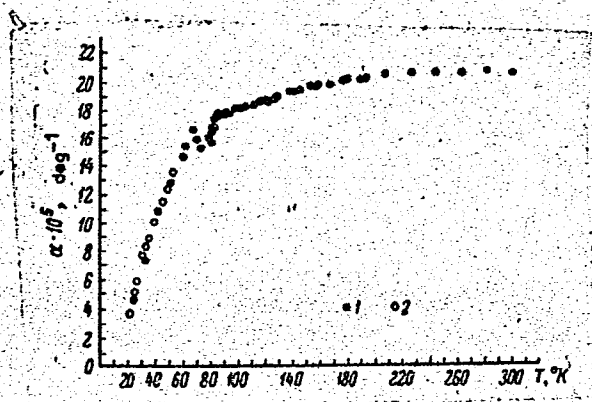


Fig. 1. Dependence of the coefficient of thermal expansion on the temperature.

- 1 - Measurements under equilibrium temperature conditions,
- 2 - dynamic measurements.

jw  
Card 3/3

L 2470-66 EWT(1)/T/EWA(h) IJP(c) AT

ACCESSION NR: AP5022705

UR/0181/65/007/009/2683/2687

AUTHOR: Novikova, S. I. 47  
13TITLE: Thermal expansion and Grüneisen's parameter for some simple and compound  
semiconductors 21.4.35

SOURCE: Fizika tverdogo tela, v. 7, no. 9, 1965, 2683-2687

TOPIC TAGS: thermal expansion, heat expansion, atomic structure, crystal structure,  
crystal lattice structure

ABSTRACT: The thermal expansion of the  $\text{CuInTe}_2$  compound crystallizing into a chalcopyrite structure was investigated in the temperature range from 20 to 340K. It was shown that the coefficient of thermal expansion ( $\alpha$ ) becomes negative at temperatures of the order of two-tenths of the Debye temperature. The  $\text{CuInTe}_2$  compound was selected because of its ratio  $c/a = 1.98$ , which differs very little from an ideal case. The investigated specimen, alloyed from components of a purity of not less than 99.99%, was polycrystalline in the form of a cylinder 16.76 mm long. The measurements were made with a quartz dilatometer. Experimental data of four series of measurements showed that the expansion coefficient changed sign at  $T \approx 43\text{K}$ , with a minimum value equal to  $1.15 \cdot 10^{-6} \text{ deg}^{-1}$  at 30K. The Grüneisen parameter  $\gamma$ , which is

Card 1/2

3

L 2470-56

ACCESSION NR: AP5022705

the measure of the anharmonicity of forces in the crystal, was calculated for diamond, silicon, germanium, and gray tin, for antimonides of aluminum, gallium, and indium, and for gallium arsenide. The following conclusions were made: 1) in regions where the law  $C_v \sim T^3$  is valid, the Grüneisen parameter does not change with temperature, i.e.,  $\gamma = \gamma'$ . 2) At a temperature when the expansion coefficient is constant. 3) The temperature at which  $\gamma$  differs from zero and is equal to  $A/E_{vib}$ , where A is constant. 3) The temperature at which  $\gamma$  changes sign shifts to the region of larger values in comparison with the temperature at which the expansion coefficient changes sign. This shift depends on the magnitude of the low-temperature threshold. In some cases  $\gamma$  can be positive at all temperatures, while  $\gamma'$  must necessarily have a region of negative values coinciding with the region of negative values of  $\alpha$ . Orig. art. has: 4 figures and 4 formulas. [JA]

ASSOCIATION: Institut metallurgii im. A. A. Baykova, Moscow (Institute of Metallurgy)

SUBMITTED: 25Mar65

ENCL: CO

44.6

SUB CODE: SS

NO REF SOV: 007

OTHER: 016

ATD PRESS: 4/05

BVK

Card 2/2



L 50130-88 ERP(e)/EPL IJP(c) RDW/JD

ACC NR: AP6018342 SOURCE CODE: GE/0030/66/013/001/K019/K022

44  
112  
B

AUTHOR: Zhdanova, V. V.; Lukina, V. I.; Novikova, S. I.

ORG: Institute of Semiconductors, Academy of Sciences of the UkrSSR, Leningrad

TITLE: Thermal expansion of the HgSe in the 50—500-K temperature range

11

SOURCE: Physica status solidi, v. 13, no. 1, 1966, K19-K22

TOPIC TAGS: thermal expansion, polycrystal, thermal acoustic effect, mercury compound, mercury selenide, *SELENIDE*

ABSTRACT: The thermal expansion coefficient of mercury selenide which crystallizes in the zinc-blende lattice has been measured in the 20—500-K temperature range. A quartz dilatometer, an OP-I type recorder (V. V. Zhdanova, Fiz. tverd. Tele 5, 3341, 1963), and Strelkov's dilatometer (P. G. Strelkov and S. I. Novikova, Prib. Tekhn. Eksper., No.5, 105, 1957) have been used. The results obtained with these devices were in good agreement within the limits of experimental error. Measurements have been carried out on two polycrystalline

Card 1/2

L 36150-66  
ACC NR: AP6018342

and two monocrystalline HgSe samples. The concentrations of free carriers in the polycrystals and one monocrystal were determined from Hall measurements at the room temperature and were found to be  $4 \times 10^{17}$  —  $1 \times 10^{18} \text{cm}^{-3}$ . The second monocrystalline sample was doped with Al, and its concentration of free carriers was  $4.8 \times 10^{19} \text{cm}^{-3}$ . The temperature dependence of the thermal-expansion coefficient of HgSe is characteristic for all substances having a diamond-type lattice. The transition temperature of the thermal-expansion coefficient of HgSe to negative values was found to be very high. Negative values of the thermal-expansion coefficient are caused by the increased role of transverse acoustic vibrations at low temperatures. The behavior of the thermal-expansion coefficient must be taken into consideration when investigating semiconductor characteristics of HgSe. The authors thank S. Aliev and S. S. Shalyt for providing monocrystalline samples. Orig. art. has: 1 figure. [NT]

SUB CODE: 20/ SUBM DATE: 26Nov65/ ORIG REF: 005/ OTH REF: 002

Card

2/2 *lll*

SELEZNEV, Sergey Ivanovich; NOVIKOVA, S.N., red.

[Accounting in industry] Bukhgalterskii uchet v pro-  
myshlennosti. 3. perer. izd. Moskva, Statistika, 1965.  
206 p. (MIRA 18:6)

ABANINA, Anna Vasil'yevna, dots.; FEDOROVA, Galina Sergeyevna,  
dots.; SHCHEDRIN, Nikolay Ivanovich, dots.; NOVIKOVA,  
S.N., red.

[Problems and exercises in the organization of machine  
accounting] Sbornik zadach i uprazhnenii po organizatsii  
mekhanizirovannogo ucheta. Moskva, Statistika, 1965.  
154 p. (MIRA 18:7)

BAKLANOV, Gleb Ivanovich, prof.; IVANOV, Aleksandr Ivanovich,  
dots.; USTINOV, A.N., dots.; SHIFMAN, A.G., dots.;  
NOVIKOVA, S.N., red.

[Industrial statistics] Statistika promyshlennosti. Mo-  
skva, Statistika, 1965. 358 p. (MIRA 18:6)

RAPOPORT, Mikhail Moiseyevich; NOVIKOVA, S.N., red.

[Machine accounting in agriculture] Mekhanizatsiya ucheta  
v sel'skom khoziaistve. 2., perer. izd. Moskva, Statistika,  
1965. 97 p. (MIRA 18:4)

SAVOST'YANOV, Dmitriy Dmitriyevich; NOVIKOVA, S.N., red.

[Construction and repair of KEL (VMP-2), KELR, KELRS, SAR (VMM-2) and SARS calculating machines] Konstruktsiia i remont vychislitel'nykh mashin modelei KEL (VMP-2), KELR, KELRS, SAR (VMM-2) i SARS. Izd.3., perer. i dop. Moskva, Statistika, 1964. 242 p. (MIRA 18:6)

YEGER, Yekaterian Ivanovna; LEBEDEV, Aleksandr Vasil'yevich;  
LEVINA, Dina Lipovna; NOVIKOVA, S.N., red.; KAPRALOVA,  
A.A., tekhn. red.

[Principles of statistics; textbook for training accountants  
of industrial enterprises] Osnovy statistiki; uchebnoe poso-  
dliia podgotovki bukhgalterov promyshlennykh predpriatii.  
Izd.2., perer. i dop. Moskva, Gosstatizdat, 1963. 223 p.  
(MIRA 17:1)



KEMELEV, Nikolay Nikolayevich; TSERLEVSKAYA, Ye.S., red.; MOVIKOVA,  
S.N., red.; PYATAKOVA, N.D., tekhn. red.

[Accounting on collective farms] Bukhgalterskii uchet v  
kolkhozakh. Moskva, Gosstatizdat, 1963. 211 p.  
(MIRA 17:2)

ISAKOV, Vasilii Ivanovich; NOVIKOVA, S.N., red.

[Mechanization of accounting statistical and computing work] Mekhanizatsiia ucheto-statisticheskikh i vychislitel'nykh rabot. Moskva, Statistika, 1965. 360 p.  
(MIRA 18:12)

L 7888-66 EWT(m)/EPF(c)/EWP(j) RM

ACC NR: AP5025043

SOURCE CODE: UR/0286/65/000/016/0085/0085

AUTHORS: Kolesnikov, G. S.; Teylina, A. S.; Novikova, S. P.; Alovitdinov, A. B.; Levin, B. B.; Trunina, G. I.

ORG: none

TITLE: Method for obtaining poly- $\alpha$ -phenylvinylphosphonic acid. Class 39, No. 173955 /announced by Moscow Order of Lenin Chemico-technological Institute im. D. I. Mendeleev (Moskovskiy khimiko-tehnologicheskii institut)

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 85

TOPIC TAGS: phenylvinylphosphonic acid, polymer, organic phosphorus compound, cerium compound, alcohol

ABSTRACT: This Author Certificate presents a method for obtaining poly- $\alpha$ -phenylvinylphosphonic acid. The  $\alpha$ -phenylvinylphosphonic acid is polymerized in an aqueous solution in the presence of redox initiators such as salts of tetravalent cerium and polyvinyl alcohol.

SUB CODE: 07/ SUBM DATE: 08May64

Card 1/1

UDC: 678.746.87

KOZLOV, Leonid Mikhaylovich; BURMISTROV, Vasilii Ivanovich;  
NOVIKOVA, S.S., prof., red.

[Nitrated alcohols and their derivatives] Nitrospirty i  
ikh proizvodnye. Kazan', Kazanskii khimiko-tekhnologicheski  
skii in-t im. S.M.Kirova, 1960. 179 p. (MIRA 17:4)

A L 11519-66 EWT(m)/EWP(j)/T RPL WW/RM

ACC NR: AP6001873 SOURCE CODE: UR/0190/65/007/012/2160/2163

AUTHORS: <sup>4/4,55</sup> Kolesnikov, G. S.; <sup>4/4,55</sup> Tevlina, A. S.; <sup>4/4,55</sup> Novikova, S. P.; <sup>4/4,55</sup> Sividova, S. N. 49

ORG: Moscow Chemical-Technological Institute im. D. I. Mendeleev (Moskovskiy <sup>4/4,55</sup> Khimiko-tekhnologicheskii institut) B

TITLE: <sup>7,44,55</sup> Copolymerization of  $\alpha$ -phenylvinylphosphonic acid with acrylic acid and acrylonitrile. 58th communication in the series Carbocyclic Polymers and Copolymers 7

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 12, 1965, 2160-2163

TOPIC TAGS: polymer, polymerization, ~~polymerization rate~~, ~~polymerization kinetics~~, copolymer, copolymerization, acrylic acid, acrylic plastic, *phosphonic acid*

ABSTRACT: The copolymerization of  $\alpha$ -phenylvinylphosphonic acid with acrylic acid and acrylonitrile was studied as an extension of previously published work on the polymerization properties of  $\alpha$ -phenylvinylphosphonic acid by G. S. Kolesnikov, A. S. Tevlina, and A. B. Alovitdinov (Vysokomolek. soyed., 7, 1913, 1965). The copolymerization was carried out in evacuated glass tubes in the presence of mole 1% benzoyl peroxide at 70C. The experimental results are presented in tables and graphs (see Fig. 1). The copolymerization constants,  $r$  for the systems,  $\alpha$ -phenylvinylphosphonic acid - acrylic acid, and  $\alpha$ -phenylvinylphosphonic acid and acrylonitrile, were calculated and were found to be:  $r_1 = 0.44 \pm 0.03$ ,  $r_2 = 0.98 \pm 0.08$ , X

Card 1/2

UDC: 66.095.26+678.744+678.745+678.86 2

I 11519-66

ACC NR: AP6001873

0

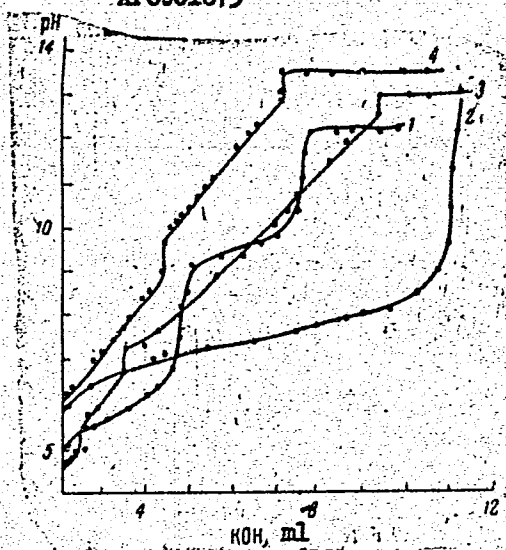


Fig. 1. Potentiometric titration curves.  
1 -  $\alpha$  phenylvinylphosphonic acid (I);  
2 - acrylic acid (II);  
3 - copolymer I - II;  
4 - copolymer I - acrylonitrile.

and  $r_1 = 0.32 \pm 0.07$ ,  $r_2 = 0.69 \pm 0.18$  respectively. The activity parameters  $Q$  and  $e$  for phenylvinylphosphonic acid were found to be  $0.80 \pm 0.02$  and  $0.76 \pm 0.04$  respectively. Orig. art. has: 4 tables and 1 graph.

SUB CODE: 01.11/ SUBM DATE: 02Feb65/ ORIG REF: 003/ OTH REF: 004

Card 2/2

L 10339-67 EWP(j)/EWT(m) IJP(e) RM/DS

ACC NR: AF6029908

(A)

SOURCE CODE: UR/0413/66/000/015/0086/0086

INVENTORS: Kolesnikov, G. S.; Tevlina, A. S.; Novikova, S. P.; Levin, B. B.; Chernomyrdina, L. F.; Abramova, T. D. 45

ORG: none

TITLE: A method for obtaining heat-resistant and chemically stable cationite membranes. Class 39, No. 184427 announced by Moscow Institute of Chemical Technology Im. D. I. Mendeleev (Moskovskiy khimiko-tehnicheskiy institut)

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 86

TOPIC TAGS: ion exchange membrane, monomer, polymer, graft copolymer, fluorine, acrylic acid

ABSTRACT: This Author Certificate presents a method for obtaining heat-resistant and chemically stable cationite membranes by grafting monomer compounds containing ionogenic groups to fluorine-containing copolymers. To obtain membranes characterized by a selectivity in separating the ions of polyvalent metals, a mixture of  $\alpha$ -phenylvinyl phosphinic acid and acrylic acid or acrylonitril is used as the monomer compound.

Card 1/1<sup>th</sup> SUB CODE: 07/ SUBM DATE: 13May65 UDC: 661.183.123.2:678.743-139

WEISENFELD, V.N.: NOVIKOVA, T.A.

Medical service for workers of the Orsha Linen Combine. Zdrav. Belor.  
5 no.1:38-39 Ja '59. (MIRA 12:7)  
(ORSHA--TEXTILE INDUSTRY--HYGIENIC ASPECTS)



GAVRILOV, B.G.; GULIN, Ye.I.; LESNIKOV, A.P.; NOVIKOVA, T.A.

Chemical principles of the thermoforcing of a diesel engine.  
Zhur. prikl. khim. 36 no.11:2498-2502 N '63.

(MIRA 17:1)

MITKALEV, B.A.; LEBEDEV, Ye.P.; NOVIKOVA, T.A.

Purification of phenol waste waters by adsorption on activated carbons. Nefteper. i neftekhim. no.11:13-15 '64 (MIRA 18:2)

1. Nauchno-issledovatel'skiy institut neftekhimicheskikh proizvodstv, Ufa.

SOV/180-59-2-8/34

**AUTHORS:** Baranov, A.I., Bystrova, K.A., Novikova, T.A., and Funke, V.F. (Moscow)

**TITLE:** The Influence of Molybdenum, Chromium and Aluminium on the Strength of Hard Alloys on a Nickel or Cobalt Base (Vliyaniye molibdena, khroma i alyuminiya na prochnost' tverdykh splavov na nikelovoy i koba'tovoy osnove)

**PERIODICAL:** Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, Metallurgiya i Toplivo, 1959, Nr 2, pp 43-47 (USSR)

**ABSTRACT:** The influence of the alloying additions on the strength of WC-Co and WC-Ni alloys was investigated. Alloys containing 8, 10, 12 and 15% Co and 8% Ni were used. Various additions of Cr, Mo, and Al were added to the Co or Ni. (Cr Mo and Al form wide ranges of solid solution with Co and Ni). Alloys were prepared by sintering at 1400 to 1600 °C in a hydrogen atmosphere. X-ray analysis showed that Co in all the alloys had a cubic structure. The distribution of the alloying addition between WC and Co or Ni was determined by chemical analysis after extracting Co or Ni with HCl at 100 °C. The results are given in the table. Cr in WC-Co-Cr alloys is in solid solution with Co almost completely, but in WC-Ni-Cr

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SOV/180-59-2-8/34

The Influence of Molybdenum, Chromium and Aluminium on the Strength of Hard Alloys on a Nickel or Cobalt Base

alloys it is in the carbide phase. Mechanical strength was determined from bend tests and results showed that at room temperature the binary WC-Co and WC-Ni alloys have the highest strength. Addition of 20% Cr to the cementing phase results in a fall in strength of WC-Co alloys from 170 to 85 kg/mm<sup>2</sup> and of WC-Ni alloys from 140 to 110 kg/mm<sup>2</sup>. At elevated temperatures the maximum strength is obtained by an alloying addition, the highest increase being shown by a Cr addition and the lowest by an Al addition. The highest strength is shown by alloys containing relatively small amounts of alloying addition (3-7%Cr, 3-7%Cr, 1-2%Cr). Further increases in alloying additions lead to decrease in strength and a large decrease in plasticity of the Co phase even at 600 - 800 °C. The effect of Cr, Mo and

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SOV/180-59-2-8/34

The Influence of Molybdenum, Chromium, and Aluminium on the Strength of Hard Alloys on a Nickel or Cobalt Base

Al additions increases with total content of cementing phase.

There are 5 figures, 1 table and 9 references, 5 of which are English, two German and two Soviet.

SUBMITTED: November 27, 1958

Card 3/3

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S/180/60/000/004/020/027  
E193/E483

12:6:00

AUTHORS: Bystrova, K.A., Novikova, T.A. and  
Funke, V.F. (Moscow)

TITLE: The Effect of Alloying Additions on Structure and  
Properties of Tungsten Carbide-Cobalt Hard Alloys

PERIODICAL: Izvestiya Akademii nauk, SSSR, Otdeleniye tekhnicheskikh  
nauk, Metallurgiya i toplivo, 1960, No.4, pp.124-128

TEXT: The object of the investigation described in the present paper was to determine the effect of chromium, molybdenum and aluminium additions on the grain size, transverse rupture strength and hardness of cobalt-bonded, sintered tungsten carbides. The experimental specimens contained 8, 12 or 15% Co, the content of the alloying additions introduced in the grinding stage varying between the following limits (wt. % of the cobalt content): Cr - 3 to 20; Mo - 3 to 20; Al - 1 to 8. Several conclusions were reached. (1) The grain size of the WC phase is reduced in the presence of chromium and molybdenum but is unaffected by addition of aluminium. (2) With increasing content of Cr, Mo and Al the room temperature strength of the sintered carbide decreases, the decrease being largest in the case of chromium and smallest in

Card 1/2

23432

S/121/61/000/006/009/012  
D040/D112

181120 also 2908

AUTHORS: Funke, V.F., Romanov, K.F., Novikova, T.A., Guseva, A.N., and  
Bystrova, K.A.

TITLE: Wear resistance of W-Co hard-alloy cutter tips in machining  
EI437 alloy

PERIODICAL: Stanki i instrument, no. 6, 1961, 32-33

TEXT: Results are given of an experimental investigation with W-Co alloy-tipped cutters in turning cylindrical smooth and grooved blanks of 3M 437 (EI437) heat-resistant alloy. The experiments were performed on a Gustlow Werke lathe, using a cutting speed  $v=30$  m/min, cutting depth  $t=1.0$  mm and feed rates  $s$  of 0.6 and 0.3 mm/rev for continuous cutting (on smooth blanks); intermittent cutting (grooved blanks) was done with  $v=10$  m/min,  $t=1.0$  mm and  $s=0.2$  mm/revolution, and with  $v=6$  m/min,  $t=1.0$  mm, and  $s=0.6$  mm/rev. Wear on the rear face of the tips was used as a criterion of the wear. The results are illustrated in four graphs (Fig. 1-4). It was established that 8% Co gave the maximum wear resistance and hardness. A Co content lower than 8% gave lower wear resistance on account of insufficient alloy strength (the cutting edge crumbled), and higher than 8% also resulted in lower wear resistance.

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S/121/61/000/006/009/012  
D040/D112

Wear resistance of W-Co ...

tance on account of insufficient hardness. A lower feed rate facilitated cutting and raised wear resistance. It was concluded that the cutter tips used for machining EI437 alloy must have higher strength than those used for cutting cast iron or steel. The maximum wear resistance for continuous cutting of EI437 is shown by cutter tips with 8% Co; for intermittent cutting of cast iron and steel the Co content in W-Co alloy cutting tips must be lower. There are 4 figures and 2 Soviet-bloc references.

Card 2/4



Wear resistance of W-Co .....

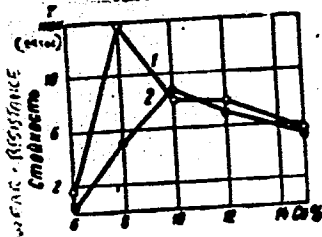


Fig.1: Wear resistance of tips during continuous turning.  
 1 - Feed 0.6 mm/rev;  
 2 - Feed 0.3 mm/rev.

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D040/D112

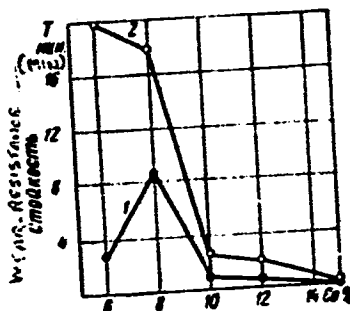


Fig.2: Wear resistance of tips during intermittent turning.  
 1 - v=10 m/min, t=1.0 mm, feed s=0.2 mm/rev;  
 2 - v=6 m/min, t=1.0 mm, feed s=0.6 mm/rev.

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Wear resistance of W-Co .....

S/121/61/000/006/009/012  
D040/D112

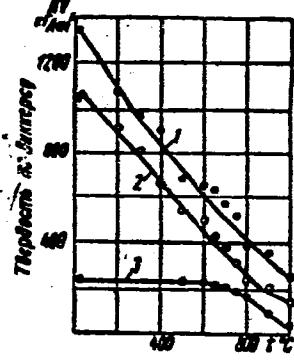
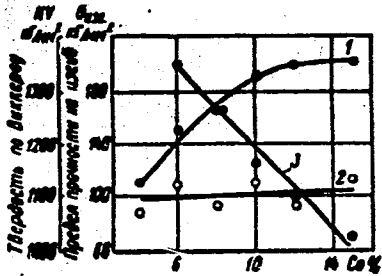


Fig.3: Dependence of ultimate bending strength ( $\sigma_{wear}$ ) kgf/mm<sup>2</sup> and hardness (HV) kgf/mm<sup>2</sup> on the Co content: 1 -  $\sigma_{wear}$  at 20°C; 2 -  $\sigma_{wear}$  at 800°C; 3 - HV at 20°C.

Fig.4: Dependence of hardness (HV kgf/mm<sup>2</sup>) of W-Co and EI437 alloys on temperature: 1 - alloy with 4% Co; 2 - alloy with 15% Co; 3 - EI437

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S/180/61/000/006/017/020  
E073/E535

AUTHORS: Tumanov, V.I., Funke, V.F., Baskin, M.L. and  
Novikova, T.A. (Moscow)

TITLE: Physical properties of the alloys tungsten carbide-  
cobalt

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye  
tekhnicheskikh nauk, Metallurgiya i toplivo.  
No.6, 1961, 144-148

TEXT: Systematic data on the physical properties of WC-Co alloys have not been published and, therefore, the authors have investigated the specific resistance, the Young modulus, the coefficient of linear expansion and the hardness of WC-Co alloys containing various quantities of the binder phase with various sizes of the tungsten carbide grains. For the tests, specimens containing 0 to 100% Co and specimens containing 6 wt.% Co were investigated, differing as regards the size of the tungsten carbide grain. The alloys were produced according to standard technology. The main series of alloys with various contents of binder had a practically equal average diameter of the tungsten  
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Physical properties of ...

S/180/61/000/006/017/020  
E073/E555

carbide grain of 2.5  $\mu$ . The phase composition of the alloys throughout the entire range of changes of the Co content remained constant: phase WC plus solid solution of tungsten and carbon in cobalt. The porosity of the alloys did not exceed 0.2 vol.%, the tungsten carbide had a porosity of 3.5%. The sintered specimens were quenched and annealed; the quenching consisted of heating in a hydrogen atmosphere at 1000°C for 12 hours and cooling in the water-cooled cooler of the furnace. The annealing was at 1000°C for 12 hours in a hydrogen atmosphere followed by cooling to 800°C and holding at that temperature for 24 hours and then cooling to room temperature at an average rate of 1.3 °C/min. The specific resistance  $\rho$ , the modulus of elasticity  $E$ , the coefficient of linear expansion  $\alpha$  and the hardness  $H_v$  were determined on quenched and annealed specimens. The specific electric resistance was determined by the compensation method using a potentiometer, the maximum error being 2.0%; the coefficient of linear expansion was determined with a quartz rod dilatometer in the range 18 to 420°C with an error of 2.5%; the Young modulus was determined by a dynamic method with

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Physical properties of ...

S/180/61/000/006/017/020  
E073/E535

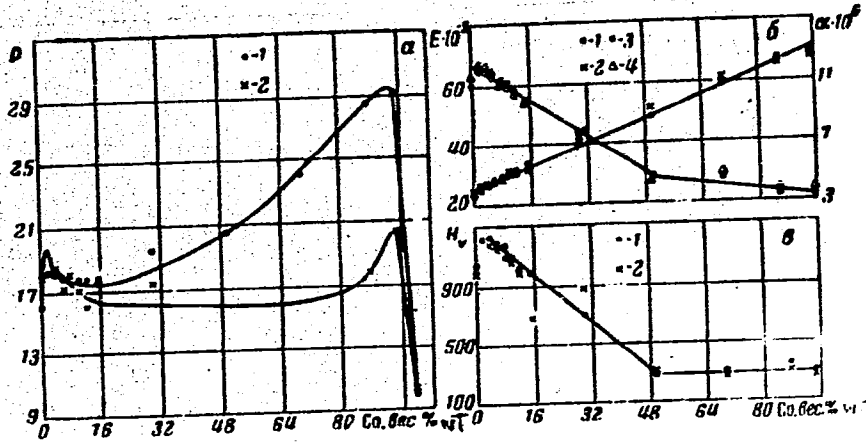
an error of 1%. Fig.1 shows the dependence on the cobalt content, wt.% of the following: specific resistance  $\rho$ ,  $\mu\text{ohm}\cdot\text{cm}$  (a); modulus of elasticity  $E$ ,  $\text{kg}/\text{mm}^2$  and the coefficient of linear expansion  $\alpha$ ,  $1/\text{deg}$  (b); hardness  $H_v$ ,  $\text{kg}/\text{mm}^2$  (b). Curves 1 and 3 - after quenching, curves 2 and 4 - after annealing. The obtained experimental results show that the specific electric resistance is the most sensitive physical characteristic of WC-Co alloys which provides an indication of the state and the composition of the binding and the carbide phases and of the structure. The modulus of elasticity and the coefficient of linear expansion indicate predominantly the quantitative relations between the tungsten carbide and the cobalt in the alloy and depend little on heat treatment and composition of the binding phase. The modulus of elasticity changes considerably with the grain size of the tungsten carbide. The results confirm the view of the existence of a continuous cobalt phase in alloys of this type. L. G. Grigorenko and A. A. Cheredinov participated in the experiments. There are 2 figures and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc. The English-language references read as follows: Ref.1: Dawihl W. and Hinnuber J. The structure of hard metal alloys. Kolloid-Z., Card 3/4

Physical properties of ...

S/180/61/000/006/017/020  
E073/E535

1943, 104, No.2/3, 233; Ref.2: Gurland J. and Norton J. Role of the binder phase in cemented tungsten carbide-cobalt alloys. Metals, 1952, 4, No.10, 1051.

SUBMITTED: June 18, 1961



Card 4/4

Fig. 1

FUNKE, V.F.; ROMANOV, K.F.; NOVIKOVA, T.A.; GUSEVA, A.N.; BYSTROVA, K.A.

Durability of tips made of tungsten-cobalt hard alloy used in the  
machining of the EI437 alloy. Stan.i instr. 32 no.6:32-33 Je '61.  
(MIRA 14:6)

(Metal-cutting tools)  
(Cobalt-tungsten alloys)

NOVIKOVA, Tat'yana Aleksandrovna; FIALKOV, A.S., red.; MISHARINA,  
K.D., red. izd-va; ISLENT'YEVA, P.G., tekhn. red.

[Copper powders] Mednye proshki. Moskva, Metallurgizdat,  
1962. 63 p. (MIRA 15:7)  
(Copper) (Powder metallurgy)



37732

S/180/62/000/002/011/018  
E040/E135

18.1152

AUTHORS: Funke, V.F., Novikova, T.A., and Tumanov, V.I.  
(Moscow)

TITLE: Structure and properties of  
tungsten-carbon-cobalt-molybdenum alloys

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye  
tekhnicheskikh nauk. Metallurgiya i toplivo,  
no.2, 1962, 113-118

TEXT: The results are reported of an investigation of the  
phase composition, chemical composition and structure of the  
W-C-Co-Mo alloys with 80 and 47% W contents. Special attention  
was paid to the changes in the alloy properties as a result of  
variation in their Mo and C contents. Alloys with 80% W  
(remainder carbon and cobalt) were found to be suitable for  
many industrial purposes and those with 47% W find application  
in X-ray structural analysis of the cobalt-base solid  
solutions. The test specimens were prepared by powder  
metallurgy techniques, starting with powders of W, Co and Mo.  
Card 1/4

Structure and properties of ...

S/180/62/000/002/011/018  
E040/E135

by pressing and sintering at 1450 °C (for alloys with 80% W) and 1250 °C (for alloys with 47% W). The above sintering conditions were found to give alloy specimens with the highest density and the best ultimate bending strength. The specimens were then annealed at 1200 and 1000 °C for 2 hours and at 800 °C for 24 hours and allowed to cool, together with the furnace, at the rate of about 1.5 °C/min. The ultimate bending strength was measured at 20 and 800 °C and the hardness of the test alloys was determined at temperatures in the range of 20 to 1000 °C. In addition, determination of the phase composition of the alloys was made by means of X-ray structural and chemical analyses. Special analysis was made of the cobalt and carbide phases. An increase in the Mo content of the test alloys, while the tungsten and carbon content are kept constant, was found to produce a change in the phase composition of the alloys. According to metallographic analysis, the two-phase structure is retained by alloys with 80% W when the molybdenum content is raised from 0 to 1.5%, the two phases being tungsten carbide and a cobalt-base solid solution. At a molybdenum content of 3% or higher, a

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Structure and properties of ...

S/180/62/000/002/011/018  
E040/E135

third phase was found to appear. The structure of this phase was found to be identical with that of the  $\eta_1$ -phase present in the W-C-Co system (double carbide of tungsten and cobalt). The quantity of this third phase was found to rise with increasing molybdenum concentration. In the alloys with 47% W, the third phase appears at molybdenum contents exceeding 10%, but an increase in the carbon content at a constant molybdenum concentration leads to a reduction in the quantity of the third phase. At the carbon content of 5.36% or more, the test alloys with 80% W and about 3.3% Mo were found to have two phases only: WC phase and the cobalt phase. In the alloys with 47% W content and 10% Mo, the third phase does not form if the carbon content is increased to 4.3%. Phase composition analysis of the test alloys showed that if molybdenum is at concentrations up to 10%, a two-phase structure can exist in the alloy with 47% W. This is taken as an indication of the presence of a solid solution region of molybdenum and carbon in the tungsten carbide phase. It was found that the introduction of molybdenum in the alloys of the W-C-Co system, the raising of molybdenum content up to

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Structure and properties of ...

S/180/62/000/002/011/018  
E040/E135

3% and the resultant appearance of the double carbide ( $\eta_1$ -phase), as well as a change in the composition of the WC and Co-phases, are accompanied by some reduction of strength at room temperature and some increase of the strength at 800 °C. The hardness of the W-C-Co-Mo alloys is greater than that of the W-C-Co alloys of equal strength.

There are 7 figures and 2 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut  
tverdykh splavov  
(All-Union Scientific Research Institute for Hard  
Alloys)

SUBMITTED: September 18, 1961

Card 4/4

TUMANOV, V.I.; FUNKE, V.F.; PAVLOVA, Z.I.; NOVIKOVA, T.A.;  
BYSTROVA, K.A.

Effect of the composition and structure of alloys in the system  
WC - Co and TiC - WC - Co on the strength limit during com-  
pression. Fiz. met. i metalloved. 15 no.2:285-289 F '63.  
(MIRA 16:4)

I. Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh  
spлавov.

(Tungsten-cobalt alloys—Metallography)  
(Titanium-tungsten-cobalt alloys—Metallography)  
(Deformations(Mechanics))

ACCESSION NR: APL019817

S/0279/64/000/001/0170/0175

AUTHORS: Tumanov, V. I. (Moscow); Funke, V. F. (Moscow); Baskin, M. L. (Moscow);  
Novikova, T. A. (Moscow)TITLE: Temperature effect on physical properties of tungsten carbide and cobalt  
alloys

SOURCE: AN SSSR. Izv. Metallurgiya i gornoye delo, no. 1, 1964, 170-175

TOPIC TAGS: cermet alloy, metaloceramic solid alloy, WC+Co alloy, WC+Co physical  
properties, WC grain size, WC+Co thermal expansion, WC + Co electrical resistiv-  
ity

ABSTRACT: This work was carried out in order to determine the variation in the elasticity modulus, linear expansion coefficient, and specific electrical resistivity of WC+Co with respect to the temperature changes (800-1000C), the cobalt content, and the grain size of the WC-phase. The samples consisted of two sets: 1) the alloys containing 0-50 wt% of Co and made up of equal WC-phase grains (2.9-2.6  $\mu$ ); 2) the alloys with a constant Co content (6%) and with varied grain sizes of the WC-phase (1.7-3.7  $\mu$ ). The results are shown on Figures 1, 2 and 3 of the

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ACCESSION NR: APL019617

Enclosures. The authors conclude that the experimental data confirmed the general idea that Co may occur in WC-Co alloys either in the form of thin capillary films or in large inclusions. The varying amounts of the two forms determines the alloy properties with the change in Co content and grain size of the WC-phase. Orig. art. has: 1 table and 3 figures.

ASSOCIATION: none

SUBMITTED: 15May63

DATE ACQ: 31Mar64

ENCL: 03

SUB CODE: ML

NO REF SOV: 007

OTHER: 001

Card 2/5

ACCESSION NR: AP4029208

S/0226/64/000/002/0057/0060

AUTHOR: Tumanov, V. I.; Funke, V. F.; Trukhanova, Z. S.; Novikova, T. A.;  
Kuznetsova, K. F.

TITLE: Heat treatment of tungsten carbide-cobalt alloys

SOURCE: Poroshkovaya metallurgiya, no. 2, 1964, 57-60

TOPIC TAGS: tungsten carbide, cobalt, heat treatment, carbon, tungsten, tungsten  
carbide based alloy, cobalt containing alloy, binding phase

ABSTRACT: In this paper the authors present the results of studies of the effect of the cooling rate on the composition of the binding phase and the bending strength of tungsten carbide-cobalt alloys. The effect of the cobalt content is plotted in graphs. The authors draw the following conclusions: 1) the composition of the binding phase does not, in practice, depend on the cooling rate within the investigated temperature range, and 2) in the examination of the dependence of the bending strength on the composition of tungsten carbide-cobalt alloys, it is also necessary to consider the change of thermal stresses. Orig. art. has: 3 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh spalvov  
(All-Union Scientific Research Institute of Solid Alloys)

Card 1/1

Sub: 24 Jan 65



NOVIKOVA, T.D.

Effectiveness of antibacterial therapy for patients with pulmonary tuberculosis under dispensary conditions. Probl.tub. no.8:23-28 '61. (MIRA 15:5)

1. Iz Voronezhskogo gorodskogo protivotuberkuleznogo dispansera (glavnyy vrach Z.I. Yelyutina). (TUBERCULOSIS)

NOVIKOVA, T.I.

Upper Silurian dolomites in the central part of the northern slope of the Gissar Range. Dokl. AN Tadsh. SSR no.19:13-16 '56. (MIRA 10:4)

1. Institut geologii AN Tadshikskoy SSR. Predstavleno chlenom-korrespondentom AN Tadshikskoy SSR R. B. Baratovym.  
(Gissar Range--Dolomite)

NOVIKOVA, T.I.

NOVIKOVA, T.I.

Wall rock changes in one of the mercury-antimony deposits of  
central Tajikistan. Trudy AN Tadzh, SSR 98-95-106 '56.  
(Tajikistan--Ore deposits) (Antimony ores) (MLRA 10:6)  
(Mercury ores)

NOVIKOVA, T.I.

Mineralogy of antimony ochers in the Dzhibikrut mercury-antimony  
deposit. Trudy AN Tadsh. SSR 77:283-298 '57. (MIRA 11:9)  
(Gissar Range--Cervantite)

NOVIKOVA, T.I.

Antimony oxide minerals from the Dshidhikrut mercury-  
antimony deposit. Izv.Otd.est.nauk AN Tadsh.SSR no.2:  
13-27 '58. (MIRA 13:4)

1. Institut geologii AN Tadshikskoy SSR.  
(Dshishikurt region--Antimony ores)

NOVIKOVA, T. I., Cand of Geologo-Mineral-Sci --- (diss) "Mineralogy  
of the Mercuric-Antimony Deposits of Dzhizhikrut. (Central Tadzhikistan),  
Tashkent, 1959, 15 pp (Ministry of Higher Education. Central Asiatic  
State Univ. imeni V. I. Lenin) (KL, 6-60, 121)

NOVIKOVA, T.I.

Colloform antimonite from the Dzhizhikrut mercury-antimony  
deposit. Dokl. AN Tadsh. SSR 2 no.1:15-18 '59.

(MIRA 13:4)

1. Institut geologii AN Tadshikskoy SSR. Predstavleno chlenom-  
korrespondentom AN Tadshikskoy SSR E.B. Baratovym.  
(Dzhizhikrut region--Stibnite)

KOVIKOVA, T.I.

Discovery of Guadalcazarite in Tajikistan. Dokl. AN Tadsh. SSR  
2 no.3:21-24 '59. (MIRA 13:4)

1. Institut geologii AN Tadshikskoy SSR. Predstavleno chlenom-  
korrespondentom AN Tadshikskoy SSR R.B. Baratovym.  
(Dzhishikrut region--Guadalcazarite)



NOVIKOVA, T.I.

Sulfates of the oxidation zone of Dzhizhikrut. Izv. Otd. est.  
nauk AN Tadzh. SSR no.3:87-105 '59. (MIRA 15:5)

1. Institut geologii AN Tadzhikskoy SSR.  
(Dzhizhikrut—Sulfates)

NOVIKOVA, T.I.

Minerals of the kaolin group in the Dzhishikrat mercury-antimony  
deposits. Trudy AN Tadzh.SSR 104, no.1:61-75 '59. (MIRA 15:4)

1. Institut geologii AN Tadzhikskoy SSR.  
(Tajikistan--Kaolin)

NOVIKOVA, T.I.

Some data on antimonites from the deposits of central Tajikistan.  
Trudy Inst.geol. AN Tadzh.SSR 6:180-191 '62.

(MIRA 16:5)

(Tajikistan—Stibnite)

BARATOV, R.B., otv. red.; KUKHTIKOV, M.M., zam. otv. red.;  
BABAKHODZHAYEV, S.M., red.; BABKOV, K.V., red.;  
DZHALILOV, M.R., red.; ZAKHAROV, S.A., red.; ~~NOVIKOVA,~~  
T.I., red.; PANKRATOV, P.A., red.; REYMAN, V.M., red.

[Problems of the geology of Tajikistan; festschrift for  
the 23d Session of the Geological Congress in Delhi]  
Problemy geologii Tadzhikistana; sbornik, posviashchennyi  
XXII sessii Mezhdunarodnogo geologicheskogo kongressa v  
Deli. Dushanbe, AN Tadzhik SSR, 1964. 290 p.

(MIRA 18:3)

1. Akademiya nauk Tadzhikskoy SSR, Dushanbe. Institut  
geologii.

BABAKHODZHAYEV, S.M.; BARATOV, R.B.; MOROZOV, S.A.; NOVIKOVA, T.I.

In memory of M.Kh. Khamidov; with a supplementary list of works  
by M.Kh. Khamidov. Trudy Inst. geol. AN Tadzh. SSR 8:5-12 '64.  
(MIRA 17:11)

YESIPOVA, I.K., prof.; NOVIKOVA, T.K.; KHARKHUTA, A.F.

Pathological anatomy and histogenesis of changes in the veins of the lower extremities in varix. Vop. pat. i reg. org. krov. i dykh. no.1: 111-120 '61. (MIRA 18:7)

GURVICH, G.A.; ZDRODOVSKIY, P.F.; SHUMAKOVA, G.V.; NOVIKOVA, T.K.

Endotoxins as nonspecific biostimulants of antibody formation.  
Vest. AMN SSSR 19 no.8:50-61 '64. (MIRA 18:7)

1. Institut epidemiologii i mikrobiologii imeni N.F. Gamalei  
AMN SSSR, Moskva.

**NOVIKOVA, T.K.**

Immunological reactivity in early postnatal period. Zhur.  
mikrobiol., epid. i immun. 42 no.7:123-128 JI '65.  
(MIRA 18:11)

1. Institut epidemiologii i mikrobiologii imeni Gamalei  
AMN SSSR, Moskva.



NOVIKOVA, T.M.

⑦

*C.A. V-48  
Jan 10, 1954  
Fats, fatty oils  
Waxes + Detergents*

Experiment on refining and hydrogenation of rape oil on  
Kharkov Fat-Combine. A. M. Zharskiy, T. M. Novikova,  
T. E. Romanova, S. D. Kopylenko, P. I. Kaminskaya,  
A. Ya. Zak, and T. I. Gladkaya. *Maslobolno-Zhirnaya  
Prom.* 18, No. 7, 16-7(1953).—The oil was washed with  
H<sub>2</sub>SO<sub>4</sub> (d. 1.82), neutralized with 30-40% lye, boiled with  
1-1.95% soln. NaCl, and settled 8-10 hrs. The fat is  
bleached at 160-170° with active C and fuller's earth (0.7-1  
and 3-3.3 kg./ton, resp.) and in an atm. of H<sub>2</sub>. Hydrogena-  
tion is with Ni formate catalyst and at 215-230° to a m.p. of  
32-6° (4-6 hrs.).  
Vladimir N. Krukovsky

*Kharkov zhirkombinat*

NOVIKOVA, T. M.

USSR

The manufacture of edible hydrogenated fat by using a continuous process at Kharkov fat combine. A. M. Zharskii, T. M. Novikova, O. I. Teslenko, and S. D. Kopylenko (Kharkov Fat Combine). *Masloelno-Zhirovaya Prom.* 19, No. 7, 18-20 (1951).—The process and the quality and characteristics of the hydrogenated fat produced are discussed. Vladimir N. Krukovskiy

NOVIKOVA, T.M.

KUZ'MINA, N.D., tekhnik; NOVIKOVA, T.M., inzhener.

Improving the quality of milkless margarine. Masl.-zhir.prom.  
20 no.1:32 '55. (MIRA 8:3)

1. Khar'kovskiy zhirkombinat.  
(Oleomargarine)

NOVIKOVA, TE. N.

USSR/Chemical Technology - Chemical Products and Their Application, Treatment of solid mineral fuels I-12

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12872

Author : Yermolenko N.F., Novikova Te.N., Ginzburg D.Z.

Inst : Academy of Sciences Belorussian SSR

Title : Preparation Methods and Properties of Bitumen Emulsions Based on Peat Tar.

Orig Pub : Metody atrymannya i ylastsivasti bitumnykh emul'siy na asnove tarfyanoy smaly. Vestsi AN BSSR, 1954, No 3, 116-122 (Belorussian)

Abstract : A translation. See RZhKhim., 1956, 48050

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