

S/076/60/034/010/013/022
B015/B064

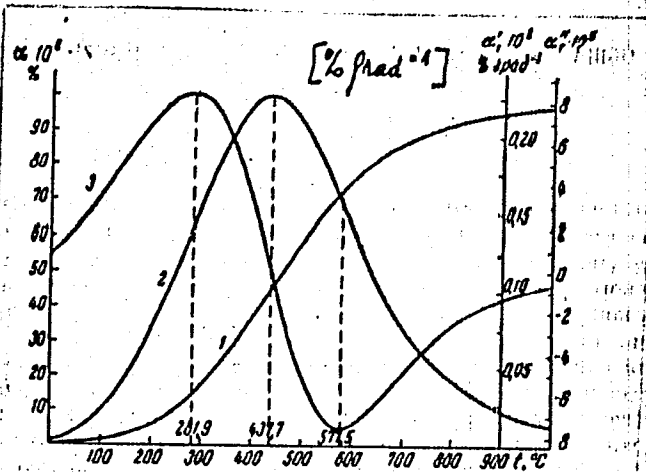


Рис. 1. Температурная зависимость: 1 — степени диссоциации α ; 2 — $\alpha'_T = (\partial\alpha/\partial T)_P$ и 3 — $\alpha''_T = (\partial^2\alpha/\partial T^2)_P$ для реакции $2\text{NH}_3 = \text{N}_2 + 3\text{H}_2$ при постоянном давлении $P = 300 \text{ атм}$.

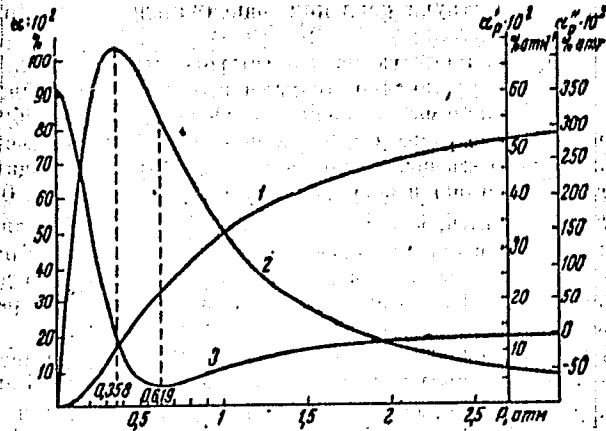
Legend for Fig. 1 - temperature dependences: 1 - degree of dissociation α , 2 - $\alpha'_T = (\partial\alpha/\partial T)_P$ and 3 - $\alpha''_T = (\partial^2\alpha/\partial T^2)_P$ for the reaction $2\text{NH}_3 = \text{N}_2 + 3\text{H}_2$ at a constant pressure $P = 300 \text{ atm}$.

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Legend for Fig. 2 - pressure dependences: 1 - degree of conversion α , 2 - $\alpha_p' = (\partial\alpha/\partial P)_T$, and 3 - $\alpha_p'' = (\partial^2\alpha/\partial P^2)_T$ for the reaction $\text{CO} + 2\text{H}_2 = \text{CH}_3\text{OH}_{\text{gas}}$ in the course of reaction in the equivalent mixture at a constant temperature $T = 113.82^\circ\text{C}$.

Рис. 2. Зависимость от давления: 1 - степени превращения α ; 2 - $\alpha_p' = (\partial\alpha/\partial P)_T$ и 3 - $\alpha_p'' = (\partial^2\alpha/\partial P^2)_T$ для реакции $\text{CO} + 2\text{H}_2 = \text{CH}_3\text{OH}_{(\text{газ})}$, протекающей в эквивалентной смеси при постоянной температуре $T = 113,82^\circ$

Card 6/6

LUTSKIY, A. Ye.; ATROSHCHENKO, V.I.; VORONOV, A.V.

Sergei Stepanovich Urazovskii; obituary. Mkr.khin. zhur. 27 no. 2:274-278
'61. (MIRA 1, 3)

(Urazovskii, Sergei Stepanovich, 1903-1961)

VORONOV, A.V.

Some thermodynamic corollaries of the dispersoidological theory
of gas - liquid phase transition. Zhur.fiz.khim. 35 no.9:1985-
1993 '61. (MIRA 14:10)

1. Khar'kovskiy politekhnicheskii institut imeni Lenina.
(Gas dynamics)

VORONOV, A.V.

New expression of the constant of chemical equilibrium. Izv.
vys. ucheb. zav.; khim. i khim. tekhn. 7 no.3:388-395 '64.

(M R. 17:10)

1. Khar'kovskiy politekhnicheskii institut imeni Lenina, kafedra
fizicheskoy khimii.

VORONOV, A.V.

Singular thermodynamic points of reversible chemical reactions. Part 3.
Zhur.fiz.khim. 37 no.7:1472-1480 J1 '63. (MIRA 17:2)

1. Khar'kovskiy politekhnicheskii institut imeni Lenina.

L 17726-63

EPF(c)/EWT(m)/EHS

ESD-1

Pr-

R/WW/RE

ACCESSION NR: AP3004058

E/0076/63/07/007/1472/1480

AUTHOR: Voronov, A. V.

TITLE: Special thermodynamic points of reversible chemical reactions, 3. maximum equilibrium shift pressure and boundary pressures in equivalent mixtures of reactants

SOURCE: Zhurnal fizicheskoy khimii, v. 37, no. 7, 1963, 1472-1480

TOPIC TAGS: equilibrium constant, shift pressure, stoichiometric reaction

ABSTRACT: A new and more convenient expression for the chemical equilibrium constant has been proposed. This constant is applied in the determination of reduced pressure which stems from chemical equilibrium. The dependence of the degree of conversion upon the reduced pressure and upon the reduced coordinates of special reaction points in equivalent mixtures are completely determined by the stoichiometric type of reaction, and, specifically, by the ratio of gas molecule numbers at the right and left side of the stoichiometric reaction equation. The reduced coordinates of special points for the various stoichiometric types of reactions have been determined, and the law which governs the change of these coordinates as a function of type of the reaction has been established. In ideal

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ACCESSION NR: AP3004058

systems, the ordinary coordinates of the special points are directly proportional to the coordinates of the reduced pressure. The proportionality coefficients are simply determined by means of the magnitude of new equilibrium constant. An explanation is given for the application of the equations and graphs with given values in non-ideal systems. Orig. art. has: 1 table, 4 figures and 23 formulas.

ASSOCIATION: Kharkovskiy politekhnicheskii institut im. V. I. Lenina (Kharkov polytechnical institute)

SUBMITTED: 07Mar62

DATE ACQ: 15Aug63

ENCL: 00

SUB CODE: CH

NO REF SOV: 004

OTHER: 000

Card 2/2

VORONOV, A. V.

Singular thermodynamic points of reversible chemical reactions.
Part 2: Methods for determination of the coordinates of the
singular points. Zhur. fiz. khim. 36 no.12:2593-2600 D '62.
(MIRA 16:1)

1. Khar'kovskiy politekhnicheskiy institut imeni Lenina.

(Chemical reactions--Conditions and laws)

VORONOV, A. Ya.

Plasma ellipsoid in its own field of forces. Vest. Mosk. un. Ser.
3: 74-80 S-0 '60. (MIRA 14:2)

1. Moskovskiy gosudarstvennyy universitet, kafedra statisticheskoy
fiziki i mekhaniki. (Plasma (Ionized gases))

VORONOV, A.Ya.

Plasma stability figures as affected by surface tension. Vest.
Mosk. un. Ser. 3:Fiz., astron. 18 no.5:43-48 S-O '63.

(MIRA 16:10)

1. Kafedra statisticheskoy fiziki i mekhaniki Moskovskogo
gosudarstvennogo universiteta.

DEBOV, S.S.; MARDASHVE, S.R.; VORONOV, A.Ya.

Effect of polyadenylic acid on the incorporation of lysine
into proteins by liver ribosomes in rats. Vop. med. khim.
10 no.6:635-637 N-D '64. (MIRA 19:1)

1. Kafedra biologicheskoy khimii i Moskovskogo ordena Lenina
meditsinskogo instituta imeni Sechenova.

86280

S/188/60/000/005/009/010
B019/B056

108600

26.2311
AUTHOR:Voronov, A. Ya.

TITLE:

The Plasma Ellipsoid in an Intrinsic Field of Force

PERIODICAL:

Vestnik Moskovskogo universiteta. Seriya 3, fizika,
astronomiya, 1960, No. 5, pp. 74 - 80

TEXT: The author investigates an ellipsoid rotating round a z-axis with the angular velocity ω_z , which consists of an ideal liquid, positively charged with constant z charge density. On the surface of the ellipsoid a constant hydrostatic pressure p' is assumed to exist. The equilibrium equation in the system of coordinates of this ellipsoid is:

$$p/q_m = -q_e \phi / q_m + \omega_z^2 (x^2 + y^2) / 2 + C \quad (1)$$

Here, p is the hydrostatic pressure, q_m and q_e are the densities of the substance and of the positive electricity, ϕ is the electrostatic potential of the ellipsoid. The equation for a surface of the same pressure is set up. From studying this equation it follows that the ellipsoid of revolution can be in relative equilibrium only if the axis of rotation coincides

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The Plasma Ellipsoid in an Intrinsic Field
of Force

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with the larger axis. In the case of a tri-axial ellipsoid, the axis of rotation must coincide with the largest axis of this ellipsoid. Finally, slight disturbances of the ellipsoid surface at relative equilibrium are studied. The dispersion equation is set up and by means of a boundary transition, the dispersion equation for a sphere and an infinitely long cylinder is obtained. It is found that an oblong ellipsoid is absolutely unstable with respect to slight disturbances of its surface. If, however, an estimation of the charge density of the plasma is used, such as is given by the ambipolar diffusion theory, a lifetime results for such an ellipsoid, which is proportional to the square of the radius of a sphere having the same volume. The author thanks Professor A. A. Vlasov for raising the problem and for valuable advice. I. N. Igilina is mentioned. There are 3 references: 2 Soviet and 1 US.

ASSOCIATION: Kafedra statisticheskoy fiziki i mekhaniki (Department of
Statistical Physics and Mechanics)

SUBMITTED: April 13, 1960

Card 2/2

VORONOV, B.; KOSTROMTSOV, V.

Exhibits relate.... Prof.-tekh. obr. 18 no.7:31-32 JI '61.
(MIRA 14:7)

(London---Exhibitions)
(Vocational education)

VORONOV, B.

Fairy tale on the screen. Rabotnitsa 35 no.1:25 Ja '57. (MLRA 10:2)

(Motion-picture cartoons)

VORONOV, B.A.

In assistance to labor organization. Vest. svyazi 25 no.6:
15-16 Je '65. (MIRA 18:11)

1. Direktor izdatel'stva "Svyaz'".

VORONOV, B.A.

Literature for telecommunication workers for 1965. Vest.
svyazi 25 no.1 31-32 'a '65.

(MIRA 18:4)

1. Direktor izdatel'stva 'Svyaz'".

VORONOV, B.A.

Books for the people. Vest. sviazi 24 no.3;4 Mr '64.
(XIRA 17:4)

1. Direktor izdatel'stva "Svyaz'".

VORONOV, B.A.

ublished by "Sviyaz'" for its readers. Vest. sviyazi 24 no.2:
31 32 F '64. (MIRA 17:4)

1. Direktor izdatel'stva "Svyaz'", Moskva.

VORONOV, B.A., instruktor

The greater Moscow area should be provided with outstanding communication services. Vest. sviazi 21 no.1:3-4 Ja '62.
(MIRA 15:5)

1. Moskovskiy gorodskoy komitet Kommunisticheskoy partii
Sovetskogo Soyuza.

(Moscow---Telecommunication)

VORONOV, B.A.

Recommended literature for communication workers. Vest. svyazi 23 no.1:
32 Ja '63. (MIRA 16:3)

1. Nachal'nik Gosudarstvennogo izdatel'stva literatury po voprosam
svyazi i radio.

(Bibliography--Telecommunication)

VORONOV, B.A.

Literature for communication workers. Vest. svyazi 22 no.3:31-32
Mr '62. (MIRA 15:2)

1. Nachal'nik Gosudarstvennogo izdatel'stva literatury po voprosam
svyazi i radio.

(Bibliography--Telecommunication)

VORONOV, B. A.

Speed up the mechanization of postal service. Vest. svyazi 23
no.4:20-21 Ap '63. (MIRA 16:4)

(Postal service)

VORONOV, B. F. (Gor'kiy)

Protective glasses with reflective light filters. Gig. truda i
prof. zab. no.4:48 '62. (MIRA 15:4)

1. Otdel tekhniki bezopasnosti i promyshlennoy sanitarii Gor'kovskogo
avtozavoda.

(SAFETY GOGGLES)

VORONOV, Boris Georgiyevich; KURDYUMOVA, Angelina Mikhaylovna;
BORZOV, V.F., red.

[Using MUS-1 equipment for the microspectroscopy of steel]
Primenenie ustanovki MUS-1 dlia mikrospektral'nogo analiza
stalei. Leningrad, 1965. 16 p. (MIRA 18:8)

VORONOV, B.G.

Work done on spectra in the laboratory of metal physics of
the Stalingrad branch of the State Institute for Petroleum
Machinery Design and Research. Fiz.sbor. no.4:395-402 '58.
(MIRA 12:5)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut Neftyanogo
mashinostroyeniya, Giproneftemash.
(Spectrum analysis)

VORONOV, B.G.

Apparatus for the excitation and recording of spectra. Zav.lab.
28 no.5:621-625 '62. (MIRA 15:6)

1. Volgogradskiy nauchno-issledovatel'skiy institut tekhnologii
mashinostroyeniya.

(Spectrograph)

VORONOV, B.G.; GUSEVA, L.M.; KURDYUMOVA, A.M.; KRASNOPROSHIN, V.A.

Spectrum analysis of girth joints in high-alloy steel. Avtom.
svar. 17 no.4:94-95 Ap '64 (MIRA 18:1)

VORONOV, B.G.; GUSEVA, L.M.

Spectrum analysis of deposited high speed steel. Avton.
svar. 16 no.12:84-85 D '63. (MIRA 17:1)

Vorobov, B.G.

307/1700

PHASE I BOOK EXPLORATION

24(7)

L'bor. Universitet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii, 1956.
 8. II. Atomnaya spektroskopiya (Materials of the 10th All-Union
 Conference on Spectroscopy, 1956. Vol. 2: Atomic Spectroscopy)
 (Obozr. Izd-vo L'vovskogo univ., 1958. 568 p. (Series: Itz:
 Fizicheskii sbornik, vyp. 4(9)). 3,000 copies printed.
 Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po
 spektroskopii.

Editorial Board: G.S. Landsberg, Academician, (Resp. Ed.);
 B.S. Reporent, Doctor of Physical and Mathematical Sciences;
 I.L. Fabelinskii, Doctor of Physical and Mathematical Sciences;
 V.A. Fabrikant, Doctor of Physical and Mathematical Sciences;
 V.G. Koritskiy, Candidate of Technical Sciences; S.M. Rayzskiy,
 Candidate of Physical and Technical Sciences; L.K. Klimovskaya,
 (Deceased), Doctor of Physical and Mathematical Sciences; V.S. Milyanchuk
 (Deceased), Doctor of Physical and Mathematical Sciences; A.Ye.
 Shubertan, Doctor of Physical and Mathematical Sciences;
 M.I. Zhukovskiy, Tech. Ed.; T.V. Saranyuk.

Purpose: This book is intended for scientists and researchers in
 the field of spectroscopy, well as for technical personnel
 using spectrum analysis in various industries.

Contents: This volume contains 177 scientific and technical studies
 of atomic spectroscopy presented at the 10th All-Union Confer-
 ence on Spectroscopy in 1956. The studies were carried out by
 members of scientific and technical institutes and include
 extensive bibliographies of Soviet and other sources. The
 studies cover many phases of spectroscopy: spectra of rare earths,
 electromagnetic radiation, physicochemical methods for controlling
 uranium production, physics and technology of gas discharge,
 optics and spectroscopy, abnormal dispersion in metal vapors, ores
 and minerals, and the combustion theory, spectrum analysis of
 and minerals, photographic methods for quantitation of the
 hydrogen content of metals and alloys, spectral absorption, and
 analysis of spectral lines, part in the parameters of calibration
 statistical study of traces in the parameters of calibration
 studies, determination of traces of metals, spectrum analysis in
 metallurgy, heterogeneity in metallurgy, and principles and
 practice of spectrochemical analysis.

Card 2/31

Materials of the Xth All-Union Conference (Cont.)

Vorob'ev, G.G. Study of Minerals by Means of Spectrum Analysis	379
Sverdlov, S.M., and L.D. Fedorova. New Method for the Spectrum Analysis of Minerals	381
Balandin, V.M., and S.I. Mandel'shtam. Possibility of the Analysis of a Metal in an Electric Arc Furnace Without Sampling	387
Ivanov, L.M., I.I. Konstantinov, V.V. Subhvalova, and A.I. Shurpin. Industrial Tests of an Experimental Photoelectric Unit for Rapid Determination of Phosphorus in Steel	388
Topalov, L.I. Methods of Calculating Calibration Curves for the Determination of High Concentrations of Components in Ferroalloys	392
Vorobov, B.G. Spectral Studies of the Metals and Physics Laboratory of the Stalingrad Branch of the Giproftemash Institute	395

Card 22/31

VORONOV, B.I. (Kun'ya)

Universal board. Mat. v shkole no.6:19-20 N-D '54. (MLRA 7:11)
(Mensuration)

1. VORONOV, B.I.
2. USSR(600)
4. Algebra - Study and Teaching
7. From the practice of teaching algebra in the 6th grade, Mat.v shkole no. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953. Unclassified.

VORONOV, B.I. (Kalininskaya oblast')

Measuring students' knowledge by means of quizzes. Mat. y
shkole no.4:43-45 J1-Ag 61. (MIRA 14-8)

(Mathematics--Study and teaching)
(Grading and marking (Students))

S/576/61/000/000/006/020
E132/E135

AUTHORS: Voronov, B.K., Dashevskiy, M.Ya., Titova, E.M., and
Khvostikova, V.D.

TITLE: Obtaining uniform single crystals of semiconductors
by Czochralski's method

SOURCE: Soveshchaniye po poluprovodnikovym materialam, 4th.
Voprosy metallurgii i fiziki poluprovodnikov,
poluprovodnikovyye soyedineniya i tverdyye splavy.
Trudy soveshchaniya. Moscow, Izd.-vo AN SSSR, 1961.
Akademiya nauk SSSR. Institut metallurgii imeni
A.A. Baykova. Fiziko-tekhnicheskii institut. 51-54

TEXT: The problem in growing crystals for electrical
purposes is not now just one of purity but of distributing a
controlled impurity in a uniform way. Experimentally this is done
by making the crucible in the form of two communicating vessels
(Fig.1). Generally the inner vessel contains the impurity in the
desired concentration and the outer contains the material, either
pure, or with a selected reduced concentration of impurity. The
connecting aperture is made so small that diffusion of the

Card 1/3

Obtaining uniform single crystals... S/576/61/000/000/006/020
E132/E135

impurity from the inner vessel to the outer can be neglected; the flow in of new material thus takes place only when the crystal is withdrawn from the melt. The concentration of the impurity in the inner vessel can thus be kept up by feeding it into the outer. Formulae are then derived relating the geometrical dimensions of the inner and outer vessels and a specimen calculation is given for designing a crucible for growing an alloyed single crystal. If the distribution of impurity in the crystalline rod drawn out of the crucible is to be non-uniform then this can be arranged by making the cross-sectional area of the outer vessel vary appropriately with depth.

There are 2 figures and 12 references: 3 Soviet-bloc and 9 non-Soviet-bloc. The four most recent English language references are:
Ref.4: W. Leverton, J. Appl. Phys., 1958, V.29, 1241-1242.
Ref.5: W. Leverton, J. Electrochem. Soc., 1958, 12.
Ref.7: Nelson, Transistors, 1956, Vol.1, publ. RCA Laboratories.
Ref.9: W. Pfann, J. Hobstaller, G. Indig. J. Appl. Phys., 1958, Vol.29, 1238-1240.

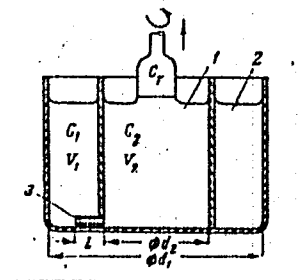


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Obtaining uniform single crystals ...

S/576/61/000/000/006/020
E132/E135

Fig.1



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33807

S/137/62/000/001/069/237
A060/A101

24.7600

AUTHORS: Voronov, B. K., Dashevskiy, M. Ya., Titova, E. M., Khvostikova, V. D.

TITLE: Obtaining homogeneous single crystals of semiconductors, grown by the Chokhral'skiy method

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1962, 45, abstract 10346 (V sb. "Vopr. metallurgii i fiz. poluprovodnikov". Moscow, AN SSSR, 1961, 51 - 54)

TEXT: A method is proposed for obtaining single crystals of semiconductors according to Chokhral'skiy's method by pulling out. The semiconductors have a uniform impurity distribution and, accordingly, have uniform electrical characteristics. The method is based on the maintenance of a constant concentration of impurities in the melt and on growing the crystals under conditions such that the effective coefficient of impurity distribution remains constant throughout the process of growth. The uniformity of the impurity concentration in the melt is attained by the use of a crucible fabricated in the form of two communicating vessels. The dimension of the connecting pipe is selected in such a way that it allows one to neglect the diffusion of the impurities from the inner vessel into

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33807

S/137/62/000/001/069/237

A050/A101

Obtaining homogeneous single crystals of...

the outer. The flow of material from the outer vessel into the inner occurs only as the crystal is pulled out, and ensures a supply for maintaining a constant concentration of impurities in the melt in the inner crucible. A calculation is given for the ratio of the geometrical dimensions of the outer and the inner crucibles and the calculation of alloying by this method. A hypothesis is put forth as to the possibility of the application of the proposed method for programmed feeding of the melt to obtain single crystals with segments containing various predetermined quantities of impurities. There are 12 references.

B. Turovskiy

[Abstracter's note: Complete translation]

Card 2/2

ACC NR: AP7004401

SOURCE CODE: UR/0226/67/000/001/0073/0080

AUTHOR: ~~Voronoy, B. K.~~ (Moscow); Dudkin, L. D. (Moscow); Kiryukhina, N. I. (Moscow); Trusova, N. N. (Moscow)

ORG: none

TITLE: Study of the Cr-Si system in the disilicide region

SOURCE: Poroshkovaya metallurgiya, no. 1, 1967, 73-80

TOPIC TAGS: chromium, silicon, ^{metal phase} system, stoichiometric mixture, microhardness, heat conductivity, carrier density, ~~single crystal~~ ~~nonlinear defect~~, ~~microstructure~~, stoichiometry, ~~powder metallurgy~~, ~~chromium alloy~~, ~~chromium disilicide~~ polycrystal, ~~Cochran's method~~

ABSTRACT: It was found that the chromium disilicide phase, crystallizing at CrSi_{1.95}, expands with a drop in temperature, shifts toward silicon, and at 1250C corresponds to the saturated composition of CrSi_{1.98-1.99} - CrSi_{2.02-2.03}. The stoichiometric composition corresponds to the minimum of microhardness, the maximum of heat conduction, the minimum value of hole concentration, the

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ACC NR: AP7004401

minimum effective density of states of the carriers, and the maximum value of the prohibited zone width, ~ 0.7 ev, which falls near the single-phase boundaries to 0.4—0.5 ev. It is assumed that the high hole concentration ($5 \cdot 10^{20}/\text{cm}^3$) in the stoichiometric mixture is due to intracrystalline defects. With deviation from stoichiometry toward chromium, the defects are reduced, and at $\text{CrSi}_{1.95}$ of stretched single crystals, it approaches 0, while on deviation toward excess silicon, it remains approximately constant. One molecular defect yields from 0.5 to 1 carrier into the valence band. Orig. art, has: 2 figures and 2 tables. [Based on authors' abstract] [NT]

SUB CODE: 11/²⁰SUBM DATE: 30May66/ORIG REF: 013/OTH REF: 003/

Card 2/2

L-09124-67 EWT(m)/EWP(j)/EWP(t)/ETI IJP(o) JD/WB/DJ/RH

ACC NR: AP6031279 (N) SOURCE CODE: UR/0229/66/000/008/0026/0028

AUTHOR: Voronov, B. M.

58

ORG: None

TITLE: Protecting diesel cylinder sleeves and blocks from corrosion-cavitation damage

3

4

SOURCE: Sudostroyeniye, no. 8, 1966, 26-28

TOPIC TAGS: marine engine, diesel engine, corrosion inhibitor, cavitation, engine cooling system

ABSTRACT: Various corrosion inhibitors used in closed diesel engine cooling systems are considered. These include such additives as potassium dichromate and emulsified oil. However, potassium dichromate actually promotes corrosion when its concentration decreases significantly in the cooling reservoir. Moreover, if for some reason salt water gets into the cooling system, potassium dichlorate becomes completely ineffective besides leaving scale in the system. Emulsified oil, on the other hand, in the form of such substances as Emul'sol "B", becomes stratified with the introduction of salt water into the fresh water cooling system or during transportation and storage at low temperatures. The poor corrosion and cavitation resistance of these inhibitors make it mandatory to find another way of preventing corrosion cavitation damage in marine

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UDC: 629.12.037.17-82

L 09124-67

ACC NR: AP6031279

3

diesel engines. The possible use of lacquers as well as cadmium and chromium plating is discussed, but the cost involved is too great. A series of scientific research organizations have worked on the development of a good inhibitor and as a result of their efforts the following anticorrosion additives were presented for testing: INK-8, emulsoid "KS" and VNII NP-117. Results of comparative tests show that the VNII NP-117 inhibitor is the best. This inhibitor was developed by the All Union Scientific Research Institute of Petroleum Processing. The additive is a water soluble oil which protects metal surfaces from corrosion. One disadvantage of this additive is that it damages rubber seals, but this can be taken care of by using various types of more stable rubber products. Operational procedures for using this inhibitor specify that the entire cooling system should be drained after 1000 operating hours and washed out with fresh water. VNII NP-117 inhibitor has replaced all others at the present time and significantly increases the service life of marine diesel engines. Orig. art. has: 1 table.

21, 07, 13, 10/
SUB CODE: 07/ SUBM DATE: None

Card 2/2 nst

VORONOV, B.L.

π -Meson - nucleon interaction in the axiomatic approach.
Zhur.eksp. i teor.fiz. 49 no.6:1802-1811 D '65.

(MIRA 19:1)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR. Submitted
July 1, 1965.

VORONOV, B.N., kapitan voyenny letchik pervogo klassa

Flight of fighter planes in pairs during bad meteorological conditions. Vest.Vozd.Fl. no.4:49-52 Ap '60.
(MIRA 13:8)

(Fighter planes--Piloting)

VORONOV, B. N.

AID P - 5461

Subject : USSR/Aeronautics - training

Card 1/1 Pub. 135 - 7/29

Author : Voronov, B. N., Captain

Title : To improve the methods of flying training in aviation schools.

Periodical : Vest. vozd. flota, 2, 33-37, F 1957

Abstract : The author, a flying instructor, points out the lack of coordination between the methods of flying training used in the flying schools and in the Air Force units. The article merits attention.

Institution : None

Submitted : No date

L 25691-66 EWT(m)/T

ACC NR: AF6002721

SOURCE CODE: UR/0056/65/049/006/1802/1811

AUTHOR: Voronov, B. L.ORG: Physica Institute im. P. N. Lebedev, Academy of Sciences USSR (Fizicheskiy institut Akademii nauk SSSR)TITLE: Pion-nucleon interaction¹⁹ in the axiomatic approach

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 6, 1965, 1802-1811

TOPIC TAGS: strong nuclear interaction, pion interaction, nucleon interaction, S matrix, perturbation, matrix element

ABSTRACT: Charge-symmetric interaction between pions and nucleons is considered within the framework of a new axiomatic approach proposed by V. Ya. Faynberg (ZhETF v. 47, 2285, 1964 and elsewhere). Approximate equations are obtained for πN scattering at low energies, where the neglect of other strongly interacting particles is justified. Faynberg's system of basic actions is modified by adding to it the principle of minimal singularity of quasilocal operators, so that the quasilocal terms are eliminated. Together with other standard principles, this makes it possible to obtain a closed system of equations for the matrix elements of the S-matrix, subject to going off the mass shell only with respect to a single momentum variable. The arbitrariness of the theory is reduced to two undefined real constants corresponding to the pion-nucleon vertex and to the meson four-point diagram. A solution of the

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L 25691-66

ACC NR: AF6002721

resultant equations by perturbation theory yields a renormalized series. Author thanks V. YA. Faynberg for suggesting the topic and for guidance. (orig. art. has: 28 formulas.

SUB CODE: 20/

SUBM DATE: 01Jul65/

ORIG REF: 004/

(YIN REF: 004

Card

2/2

VORONKOV B. S.

507/1397
507/11-06-112

PHASE I BOOK EXPLANATION

Moscow. Aviatstomoy Institut Imeni Seryo Ordzhonikidze

Metodye metody rascheta sistem avtomaticheskogo regulirovaniya i im elementov; shornik statyi (Some Methods of Calculating Automatic Control Systems and Their Components; Collection of Articles). Leningrad, Shorniki, 1958, 23 p. (Series: Iza Trudy, VP. 112) Errata slip inserted. 6,000 copies printed.

Scientific Ed.: B.N. Petrov; Ed. (title page): B.N. Petrov; Corresponding Member USSR Academy of Sciences, Professor Ed. (inside book): V.S. Chikhanava; Tech. Ed.: M.V. Erastova.

PURPOSE: This collection of articles is intended for specialists in scientific research institutions and special design bureaus and plants engaged in problems of automatic regulation. It may also be useful to students and teachers in schools of higher education.

CONTENTS: This collection of articles presents original works in the field of analysis and synthesis of nonlinear systems of automatic regulation of linear systems with variable parameters. Some problems of calculating physical components of automatic systems are also discussed. References are listed after most of the papers.

Voronkov, B.S., Candidate of Technical Sciences. Obtaining Optimal Parameters in Certain Relay Regulation Systems 39

The author defines as "optimal" the shortest, aperiodical transient process (at a given amplification factor of the relay component) without overshoot and with the smallest residual irregularity. He investigates a relay regulation system affected by an external disturbance. The attempt is made to obtain the auxiliary signal necessary for obtaining optimal conditions. 49

Bibliography

Jemal'yanov, S.V., Candidate of Technical Sciences. Regulation of a Neutral Object by an Astatic Regulator with a Nonlinear Correction Element 50

The author discusses a method of regulating a neutral object by an astatic regulator with proportional velocity and nonlinear correction, which permits obtaining a system stable in the large. The regulating process is analyzed in the first approximation and the stability conditions are obtained. The author also discusses the method of calculating the coefficients of the object and of the regulator. Both the object and the regulator are described by equations of the second order. The author makes a qualitative investigation of such a system for all possible kinds of movement occurring after arbitrary initial disturbances. He establishes relationships between parameters which determine the dynamic indices of the system. 59

Bibliography

Kobzarev, L.A., Doctor of Technical Sciences. Motion Stability in the First Time Interval 105

The author investigates disturbed motion in the first time interval by using the direct method of Lyapunov as an example. He determines the maximum time interval in a problem presented by S.V. Krasovskiy. 113

Bibliography

Kobzarev, L.A., Candidate of Technical Sciences. Critical Temperature Spring in Windings of Regulator Electrical Components 114

The author investigates this problem in the case of a short winding at a constant voltage, and finds an expression for the critical temperature. 120

Bibliography

Belashov, M.A., Engineer. Semiconductor Thermostats in Delay Circuits 121

The author constructed a time relay equipped with a semiconductor thermostat and applied it to a network at commercial frequencies. He investigates the stability of its operation with fluctuations in the voltage and determines the sufficient range of time delays and of operating conditions. 127

AVAILABLE: Library of Congress
Card 7/7

VORONOV, B.V.

Teorema chetayeva o neustoychivosti s točki zreniya yee⁴¹ dokazatel'stva. M.,
Trudy voyen. - vozd. akad., Zap. seminar po teorii ustoychivosti dvizheniya, 2
(1946)

So: Mathematics in the USSR, 1917-1947
edited by Kurosh, A.G.,
Markushevich, A.K.,
Rashevshiy, P.K.
Moscow-Leningrad, 1948

STRASHKEVICH, L.P.; VORONOV, B.V.

Exhibitions and displays of special items. Inform. biul. TENKH no. 11335.
36 N '64. (MIRA 1832)

1. Glavnyy metodist pavil'ona "Biologiya" AN SSSR na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Strashkevich).
2. Direktor pavil'ona "Professional'notekhnicheskoye obrazovaniye" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Voronov).

VORONOV, B. Ya. [deceased]; VOLKOVA, G.I.

Automatic device for the turbidimetric titration of polymers.
Zav. lab. 30 no.11:1411-1413 '64 (MIRA 18:1)

1. Moskovskiy tekhnologicheskii institut myasnoy i molochnoy
promyshlennosti.

VORONOV, D (g. Ashkhabad)

The way out has been found. Izobr.i rats. no.2:44 P '61.

(MIRA 14:2)

(Ashkhabad---Technological innovations)

ROKHLIN, L.L., prof. (Kuybyshev), otv.red.; BANSHCHIKOV, V.M., prof. (Moskva), red.; VORONOV, D.A., red.; YEROSHEVSKIY, T.I., prof., red.; ZLOTOBEROV, A.I., prof. (Kuybyshev); CHEKEMISOV, M.F., tekhn.red.; BELOTSEKOVSKIY, N.I., tekhn.red.

[Current problems in neuropathology and psychiatry] Aktual'nye problemy nevropatologii i psikhiiatrii. Trudy. Kuibyshev, 1957. 566 p. (Gosudarstvennyi nauchno-issledovatel'skii institut psikhiiatrii MZ RSFSR. Trudy, vol. 16; Kuibyshevskii gosudarstvennyi meditsinskii institut. Trudy, vol.9).

(MIRA 13:12)

1. Mezhhoblastnoye soveshchaniye nevropatologov i psikhiiatrov Povolzh'ya i primykayushchikh oblastey, 1956.
(NERVOUS SYSTEM--DISEASES) (PSYCHIATRY)

VORONOV, D.I., inzh. (Sverdlovsk).

What should a graphic train sheet be like? Zhel. dor. transp. 40
no.2:28-33 F '58. (MIRA 11:3)

(Railroads--Traffic)

VORONOV, D.L.

"Epidemiological and Ecological Data on Spreading of Trichophytons in Man and Animals," Professor D.L. VORONOV, Department of Phytoparasitology, State Institute of Veterinary Dermatology (Director A.M. Pribelkov), 51pp
Questions regarding biology and classification of sources of trichophytons and microspores have practical as well as theoretical value. In 1937-1941 author worked out system for sources of trichophytons and microspores on basis of their biology and ecology. (LC;h8776)
SO: Meditsinskiy Parazitologiya; No.1; Jan 1946 uncl. deg

VORONOV, D. L.

27270. VORONOV, D. L. Sezonnost' rasprostraneniya i sposoby peredachi epizooticheskogo limfangoita loshadey. Veterinariya, 1949, No.9, s. 23-25.

So: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949.

VORONOV, D. L. Prof.

State Institute of Veterinary Dermatology

"Seasonality of the spread and the methods of transmission
of epizootic lymphangitis."

SO: Veterinariya 26(9), 1949, p. 23

VORONOV, D. L., Prof.

State Institute of Veterinary Dermatology

"Eradication of epizootic lymphangitis of horses according to
the seasonal scheme"

SO: Veterinariya, 27 (5), 1950, p. 24

VORONOV, D. L.

Ringworm.

Treatment of ringworm in farm animals. Veterinaria 29 no. 3, 1952.

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

VORONOV, D.L., professor

Separation of megasporia into a special nosologic unit, Vest.ven.
i dermat. 30 no.5:23-25 8-0 '56. (MIRA 9:12)

1. Iz kliniki kozhnykh i venericheskikh bolezney (zav. kafedroy -
prof. D.L.VORONOV) Ryazanskogo meditsinskogo instituta imeni akad.
I.P.Pavlova (dir. - prof. I.S.Sutulov)
(FUNGUS DISEASES, diag:
megasporia as isolated nosologic unit)

SULIN, V.A., inzh.; VALIYEV, K., starshiy tekhnik (g.Volzhskiy); VOLOCHOV,
Dm. (g.Ashkhabad); KATKINOV, A., elektrik (g.Gor'kiy); SHAPIRO, Ye.;
KOPCOV, H., inzh. (g.Leningrad)

Suggested, created, introduced. Izobr.i rats. no.6:38-40 Je '60.
(MIRA 14:2)

1. Byuro sodeystviya ratsionalizatsii i izobretatel'stvu Gosudar-
stvennogo soyuznogo konstruktorsko-tekhnologicheskogo byuro po proyek-
tirovaniyu schetnykh mashin, g.Leningrad (for Sulin). 2. Sotrudnik
gazety "Stroitel", g.Baku (for Shapiro).
(Technological innovations)

VORONOV, D.V., kand.med.nauk; KLIMOVITSKIY, V.A., prof.

Innovators in science at Kuybyshev Medical Institute. Zdrav.
Ros. Feder. 5 no.9:16-19 S '61. (MIRA 14:9)

1. Iz Kuybyshevskogo meditsinskogo instituta.
(KUYBYSHEV...MEDICAL RESEARCH)

VORONOV, F.

Our reliable reserves. Prof.-tekh. obr. 22 no.9:9-10 S '65.
(MIRA 18:9)

1. Direktor Magnitogorskogo metallurgicheskogo kombinata.

PROCESSES AND POTENTIALS INDEX

21

ca
 Hydrogenation under high pressure in apparatus having a continuous output of hydrogenated product. H. N. Klyukvin, F. Voronov and M. Frenn. *Khim. Tseluloz. Papir 4, 207* (1968). *Chimia & Industrie 31, 658*.
 Continuation of investigations on the hydrogenation of fuels, dealing more particularly with solar oil and paraffin-

base fuel oil. Increasing the temp. in the heater tends to increase the yield of low-boiling fractions; the oil in the heater must be under pressure of H₂. The shape of the heater must be under pressure of H₂. The shape of the filling of the reaction chamber has considerable influence on the hydrogenation operation: with horizontal chambers, metal shavings give the best results; with vertical chambers optimum conditions for diffusion of the H₂ in the liquid phase are obtained by using a fine-mesh metal screen wound into a spiral. By increasing the time of passage of the raw material through the hydrogenation zone, the reaction temp. can be lowered without reducing the yield of low-boiling fractions; the d. of the residue decreases correspondingly. No polymerization nor cracking reactions are observed in the light fractions, disty. below 160°, under the conditions of the expts.; the 170-250° fractions, on the other hand, undergo considerable cracking, particularly at the expense of the heavier fraction. Diln. of the liquid phase of the hydrogenation products with volatile hydrocarbons formed during hydrogenation decreases the amt. of cracking; it is therefore irrational, at a given temp., to accumulate low-boiling hydrocarbons beyond a definite point; e. g., under the conditions of the expts. with solar oil, the proportion of the low-boiling fractions should not exceed 30-40%.

A. Papineau-Couture

METALLURGICAL LITERATURE CLASSIFICATION

VORONOV, F.

F. Voronov, Director of the Stalin Magnitogorsk Metallurgical Combine

"For Advanced Technology in Ferrous Metallurgy"

Yellow Book #95, 16 Mar 55

VORONOV, F.

PA - 2370

AUTHOR:

VORONOV, F., Director of the Metallurgical Combine of Magnitogorsk.

TITLE:

The Tasks now Facing the Metallurgists of Magnitogorsk. (Oche-rednyye zadachi magnetogorskikh metallurgov, Russian).

PERIODICAL:

Stal', 1957, Vol 17, Nr 1, pp 5 - 6 (U.S.S.R.)

Reviewed: 5 / 1957

Received: 5 / 1957

ABSTRACT:

The statement that the amount of work performed corresponded to what was planned is followed by the following report: The iron content in the ores remained the same, the quality of the re-worked cast iron improved, but the quality of coal and thus also that of coke deteriorated. Waiting times were reduced by 7.1 %. Supplies of scrap iron, iron alloys, and mazout were insufficient. The production volume and the selection of rolled products increased considerably in 1956. Transportation of rolled goods by rail was not satisfactory. Platforms were lacking. During the 25 years in which the Magnitogorsk mines had been exploited, the major part of the reserves of oxide ores and sulphide ores had become exhausted. Among the remainder of the reserves the specific weight of the sulphide ores containing copper and requiring more treatment and also a process of agglomeration increases. The dressing- and agglomerating plants available are not able to keep pace with crude ore preparation. It will be necessary, in 1957/58, to provide for a new mill

Cqrd 1/2

PA - 2370

The Tasks now Facing the Metallurgists of Magnetogorsk.

consisting of crushing device, and enrichment and an agglomerating plant. A serious deficit was found to exist in the "Combine" with respect to gas fuel, which makes it necessary, besides importing natural gas from the Ishimbay area and using mazout, to build 2 coke-piles in the course of the years 1957 and 1958, because coke gas will in any case remain in the basic fuel used by the "Combine". The increase of basic production also led to a deficit with respect to electric energy, steam, compressed air, oxygen, and water. Also railroad transportation no longer warrants transport of finished goods within due time.

ASSOCIATION: Magnitogorsk Metallurgical Combine.

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress.

Card 2/2

SOV/133-59-2-5/26

AUTHORS: Voronov, E.D., Engineer,
Dikshteyn, Ye.I.,
Zuts, K.A., Candidate of Technical Sciences, Docent
Trifonov, A.G.

TITLE: An Experience in Converting a 400 Ton Open Hearth Furnace
to Firing with Sulphurous Fuel Oil (Opyt perevoda 400-t
martenovskoy pechi na sernisty mazut)

PERIODICAL: Stal', 1959, ¹²/₈ Nr 2, pp 112-116 (USSR)

ABSTRACT: The Magnitogorsk Metallurgical Combine was designed with
a balanced fuel economy i.e. coal was delivered only for
coking and the coke oven and blast furnace gases should
be sufficient for all other fuel requirements. However,
an improvement in the operation of blast furnaces lead
to a considerable decrease in the coke consumption and
thus to a decrease in the output of coke oven gas. Moreover,
the calorific value of blast furnace gas decreased from
944 K cal/m³ in 1952 to 866 K cal/m³ in 1957 and its
consumption for heating blast increased as much higher
blast temperatures are used. In addition some new gas

Card 1/3

SOV/133-59-2-5/26

An Experience in Converting a 400 Ton Open Hearth Furnace to Firing with Sulphurous Fuel Oil

consumers were introduced (sheet rolling mill etc.) so that a wider use of fuel oil became necessary. A description of the transfer of a 400 ton open hearth furnace from firing with a mixture of coke oven and blast furnace gas to oil firing and operational results obtained is given. The design of the furnace remained the same only the design of parts was modified. Oil was supplied through two injectors placed outside of the casing. The two oil flames from both sides of the gas part unit into one flame at a distance of 1 m from the injectors (Fig.2). Air is being blown by a fan via former gas conduit. The following operational results were obtained: consumption of conventional fuel 105 kg/t of steel instead of previous 130 kg/t; mean duration of heat 12 hrs 15 min instead of 13 hours; the durability of regenerators to the first hot repairs 274 heats instead of 170; the volume of the regenerators changed during small cold repairs 260 m³ instead of 350 m³. However, due to high sulphur content of oil (about 2%) a noticeable increase of the transfer

Card 2/3

SOV/133-59-2-5/26

An Experience in Converting a 400 Ton Open Hearth Furnace to Firing with Sulphurous Fuel Oil

of sulphur to the metal bosh was observed. For this reason smelting of steels in the furnace was limited to grades with the permissible sulphur content of 0.045%. There are 9 figures.

ASSOCIATION: Magnitogorskiy Metallurgicheskiy Kombinat i
Magnitogorskiy Gorno-metallurgicheskiy Institut
(Metallurgical Combine and Magnitogorsk Institute of Mining Metallurgy)

Card 3/3

VORONOV, F.D.; BIGEYEV, A.M.; KOTOV, V.N.; SHITOV, I.S.; LETIMIN, V.N.

Production of fluxed briquets for converter steel smelting.
Stal' 23 no. 3:214-216 Mr '64. (MIRA 17:5)

1. Magnitogorskiy metallurgicheskiy kombinat i Magnitogorskiy
gornometallurgicheskiy institut.

VORONOV, F. D.; D'YAKONOV, A. I.; LORMAN, V. V.

Oxidation of the open-hearth furnace bath by the hearth atmosphere and its effect on the indices of smelting. Izv. vyx. ucheb. zav.; chern. met. 7 no.6:40-43 '64. (MIRA 17:7)

1. Magnitogorskiy gornometallurgicheskiy institut.

VORONOV, P.D., prof.; FILATOV, A.D., inzh.; DEYNEKO, D.I., inzh.; BIGETEV,
A.M., kand. tekhn. nauk; TKACHENKO, I.A., inzh.; SELIVANOV, N.M.,
kand. tekhn. nauk; ARYCHENKOV, V.P., inzh.

Use of boil intensifiers in the rapid pouring of rimmed steel.
Stal' 25 no.4:317-319 Ap '65. (MIRA 18:11)

1. Magnitogorskiy metallurgicheskiy kombinat i Magnitogorskiy
gornometallurgicheskiy institut.

VORONOV, F.D.; BIGEYEV, A.M.; SARYCHEV, V.F.; GONCHAREVSKIY, Ya.A.; MILYAYEV,
A.F.; VORONOV, V.F.; KOROTKIKH, V.F.

Operation of large-capacity open-hearth furnaces with winter in
place of ore in the charge and with the use of oxygen in the flame.
Stal' 25 no.7:603-605 JI '65. (MIRA 18:7)

1. Magnitogorskiy metallurgicheskiy kombinat i Magnitogorskiy
gornometallurgicheskiy institut.

L 3972-06 ENI(1)/ENI(B)/EFF(B)-4/ENI(A)/ENI(B)/ENI(C)
ACC NR: AP5024694 JD/wa/HW UR/0056/65/049/003/0755/0759

AUTHOR: Voronov, F. F.; Stal'gorova, O. V. 6544 4544

TITLE: Elastic properties of barium under pressures up to 22,000 kg/cm²

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 3, 1965, 755-759

TOPIC TAGS: elasticity, barium elasticity, rigidity, barium rigidity, solid body elasticity, solid body rigidity, pressurized barium elasticity, ultrasonic elasticity measurement, ultrasonic rigidity measurement

ABSTRACT: The ultrasound pulse method was used for an investigation of the elastic properties of solid bodies over a wide range of pressures. Barium specimens were used in the investigation. The velocity of longitudinal and transverse ultrasonic waves and the Debye temperatures were plotted as functions of pressure. The increase of longitudinal and transverse ultrasound velocities at 22,000 kg/cm² reached the value of about 8%. All these functions show monotonically a nonlinear growing pressure dependence, with a noticeable jump at 18,000 kg/cm². The corresponding jump when pressure is decreasing occurs at 17,000 kg/cm², thus showing a hysteresis loop about 1000 kg/cm² wide. The pressure increase of density was calculated from the average ultrasonic velocity functions. The modulus of bulk rigidity, the Young modulus, the shear modulus, Poisson coefficients, and Debye temperatures were then deduced from the above data. The density and compressibility (instantaneous and usual) as functions of pressure were compared with the Bridgeman and Yevdokimova-Vereshchagina data and found to

Card 1/2

ACC NR: AP5024694

be in good agreement. The density increase at 22,000 kg/cm² was 2.1%. The bulk rigidity and the Young and shear moduli increased with pressure nonlinearly and their change amounted to 40% at 22,000 kg/cm². At the phase jump, the Young modulus changed by 1.49, and shear modulus by 1.73%. The pressure dependence of the Debye temperature was also found nonlinear, with the phase jump of 0.63%. The Poisson coefficient, however, showed a 1.11% drop at the phase jump and continued to decrease with increasing pressure, but at a slower rate. The nonlinearity of the pressure dependence of elastic characteristics requires employment of elastic constants of higher than third-order for its description. The same is possibly the case with substances of lesser compressibility within a wider pressure range. The data of the experiments do not explain whether the phase jumps observed are due to a rearrangement of the lattice or to a transition of electrons between energy levels. Orig. art. has: 3 figures, 1 table, and 6 formulas. [FP]

ASSOCIATION: Institut fiziki vysokikh davleniy Akademii nauk SSSR (Institute of High-Pressure Physics, Academy of Sciences, SSSR)

SUBMITTED: 23Apr65

ENCL: 00

SUB CODE: AS, ME

NO REF SOV: 008

OTHER: 005

AND PRESS: 4/11

PC
Card 2/2

VORONOV, F.D.; BIGEYEV, A.M.; GONCHAREVSKIY, Ya.A.; SARYCHEV, V.F.

Slag formation in the melting period in very high capacity
open-hearth furnaces of the Magnitogorsk Metallurgical Combine.
Izv.vys.ucheb.zav.; chern. met. 8 no.4:65-71 '65.

(MIRA 18:4)

1. Magnitogorskiy gornometallurgicheskiy institut i Magnitogorskiy
metallurgicheskiy kombinat.

12

VORONOV, F.D., prof.; D'YAKONOV, A.I., kand.tekhn.nauk; DIKSHEYN, Ye.I., inzh.;
TRIFONOV, A.G., inzh.; LORMAN, V.V., inzh.; KAZAKOV, A.I., inzh.; KOVALIK,
I.S., tehnik.

Technological characteristics of Magnitogorsk Metallurgical Combine open-
hearth furnace operations using compressed air in the fuel spray. Stal'
23 no.12:1088-1091 D '63. (MIRA 17:2)

1. Magnitogorskiy metallurgicheskiy kombinat i Magnitogorskiy gorno-
metallurgicheskiy institut.

VORONOV, F.D.; TRIFONOV, A.G.; KHUSID, S.Ye.; DIKSHTEYN, Ye.I.; VAL'PITER, E.V.
SNEGIREV, Yu.B.; ANTIPIN, V.G.; Primali uchastiya; SMIRNOV, L.A.;
KAZAKOV, A.I.; YELIZAROV, A.G.; KULAKOV, A.M.; KOZHAKOV, M.G.;
ZARZHITSKIY, Yu.A.; ARTAMONOV, M.P.; GOL'DENBERG, I.B.; ROMANOV,
V.M.; NOVIKOV, S.M.; MAYEVSKIY, A.B.; DMITRIYEV, I.; MANZHULA, M.;
BEREZOVOY, I.A.; ZUTS, K.A.; BADIN, S.N.; TATARINTSEV, G.;
MITROFANOV, N.G.; GAVRILOVA, K.M.; IVANOV, N.I.

Operating a 400-ton open-hearth furnace on casing-head gas.
Stal' 20 no. 7:594-598 J1 '60. (MIRA 14:5)
(Open-hearth furnaces--Equipment and supplies)

VORONOV, F.D.; TRIFONOV, A.G.; SNEGIREV, Yu.B.; VAL'PITER, E.V.

Operation of Magnitogorsk Metallurgical Combine open-hearth
furnaces on natural gas. Stal' 22 no.8:701-704 Ag. '62.
(MIRA 15:7)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Magnitogorsk--Open-hearth furnaces)
(Gas, Natural)

VORONOV, F.D.

Thirtieth anniversary of the Magnitogorsk Metallurgical Combine.
Stal' 22 no.8:673-674 Ag '62. (MIRA 15:7)

1. Direktor Magnitogorskogo metallurgicheskogo kombinata.
(Magnitogorsk--Iron and steel plants)

VORONOV, F.D., prof.; SELIVANOV, N.M., kand.tekhn.nauk; RABINOVICH, Ye.I.,
kand.tekhn.nauk; UZIYENKO, A.M., inzh.; TKACHENKO, I.A., inzh.;
KUSTOBAYEV, G.G., inzh.; IVANOVA, N.G., inzh.; RYABCHIKOV, F.D., inzh.;
GRUZNOV, A.K., inzh.

Developing a technology for the casting and quality investigation
of 21-ton rimmed steel ingots. Stal' 22 no.8:709-713 Ag '62.
(MIRA 15:7)

(Steel ingots)

VORONOV, F.D., prof.; MOROZOV, A.N., prof., doktor tekhn.nauk;
SELIVANOV, N.M., kand.tekhn.nauk; SMIRNOV, Yu.I., kand.tekhn.nauk;
RABINOVICH, Ye.I., kand.tekhn.nauk; CHERNOV, G.I., inzh.;
TKACHENKO, I.A., inzh.; BIKTAGIROV, K.K., inzh.; FILIPPOV, V.M.,
inzh.; KUSTOBAYEV, G.G., inzh.

Making St. 3ps capped steel in Magnitogorsk Metallurgical
Combine open-hearth furnaces. Stal' 22 no.8:716-718 Ag '62.
(MIRA 15:7)

1. Magnitogorskiy metallurgicheskiy kombinat i Chelyabinskiy
nauchno-issledovatel'skiy institut metallurgii.
(Magnitogorsk—Open-hearth process)

MAVLYANOV, G.A., otv.red.; KRYLOV, M.M., doktor geologo-mineral.nauk, red.;
KENESARIN, N.A., doktor geologo-mineral.nauk, red.; DMITRIYEV,
V.L., kand.geologo-mineral.nauk, red.; GEYINTS, V.A., inzh., red.;
VORONOV, F.I., kand.geologo-mineral.nauk, red.; TILYAGANOV, Kh.T.,
inzh., red.; GAFUROV, V.G., kand.geologo-mineral.nauk, red.;
BEDER, B.A., kand.geologo-mineral.nauk, red.; KHASANOV, A.S., inzh.,
red.; MANSUROV, A.R., red.izd-va; CHERNYAVSKAYA, A.B., red.izd-va;
GOR'KOVA, Z.P., tekhn.red.

[Transactions of the Second Hydrogeological Conference of Uzbekistan,
Tashkent, Apr.2-9, 1958] Trudy Vtorogo Uzbekistanskogo gidrogeologi-
cheskogo soveshchaniia. Tashkent, Izd-vo Akad.nauk Uzbekskoi SSR, 1959.
339 p. (MIRA 13:9)

1. Uzbekistanskoye gidrogeologicheskoye soveshchaniye, 2nd. Tashkent,
1958. (Soviet Central Asia--Water, Underground--Congresses)

ACCESSION NR: AP4042814

S/0126/64/01B/001/0159/0160

AUTHOR: Voronov, F. P.; Stal'gorova, O. V.

TITLE: Effect of hydrostatic pressure on elastic properties of sintered hard alloys

SOURCE: Fizika metallov i metallovedeniye, v. 18, no. 1, 1964, 159-160

TOPIC TAGS: sintered tungsten carbide alloy, VK6 alloy, VK 10 alloy, alloy elastic property, sintered hard alloy, hard alloy elasticity, hard alloy elasticity characteristics, hard alloy Young modulus

ABSTRACT: The effect of hydrostatic pressure of up to 10,000 kg/cm² on the elastic properties of sintered hard alloys VK-6 (94% WC, 6% Co) and VK-10 (90% WC, 10% Co) has been investigated at 22C using ultrasonic pulses at a frequency of 10 mc. Calculations based on the obtained data showed that all elasticity characteristics (Young's modulus E, shear modulus G, volume elasticity modulus K, Poisson's ratio σ) and the propagation velocity of longitudinal v_p and transverse v_s ultrasonic waves change linearly with increasing pressure.

Card 1/2^s

L 6462-66 EWT(m)/EPF(c)/EPF(n)-2/T/EWP(t)/EWP(k)/EWP(h)/RMA(c) LIP(a)

ACC NR: AP5025250 JD/HW

SOURCE CODE: UR/03/6/65/002/004/0153/0157

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TITLE: The Mossbauer effect in metallic tin at pressures up to 110 kbar

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu (Prilozheniye), v. 2, no. 4, 1965, 153-157

TOPIC TAGS: tin, Mossbauer effect, Mossbauer spectrum, pressure effect, high pressure research

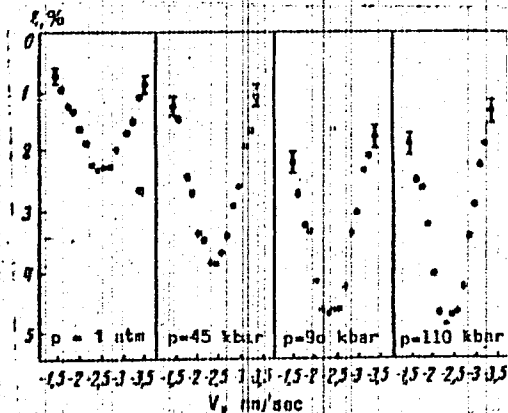
ABSTRACT: The Mossbauer effect was used to study the properties of metallic tin (β -Sn) because its large compressibility gives grounds for hoping to obtain distinctly noticeable pressure effects. In particular, a large increase is expected in the probability of emission of recoilless γ quanta and the isomeric shifts with pressure. A high-pressure chamber resembling chambers with flat anvil and tablet of amorphous boron, similar to that used in work on x-ray structural analysis at high pressure, was employed. A β -Sn source in the form of a foil 20 μ thick, containing $\text{Sn}^{119\text{m}}$, was placed in the pressure chamber. The pressure in the chamber was calibrated against the jumps of the electric resistivity at known polymorphic transitions in bismuth, thallium, and barium. The calibration curve was linear and was linearly extrapolated to 110 kbar. The setup for the observation of the Mossbauer effect was similar to the constant-speed setup described by K. P. Aleshin et al. (PTE no. 4, 43-49, 1964). All the mea-

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Fig. 1. Resonance curves for different pressures.



Measurements were made with the source and absorber at room temperature. The resonance curves for each experiment were plotted at pressures of 1 atm and 45, 90, and 100 kbar. Sample resonance curves for different pressures are shown in Fig. 1. The results show that the depth of the resonance increases with increasing pressure, and the half-widths of the resonance curves remain constant. Comparison of the areas of the resonance curves for different pressures with the area of the curve at atmospheric pressure yields the pressure dependence of the probability of recoilless γ -quantum

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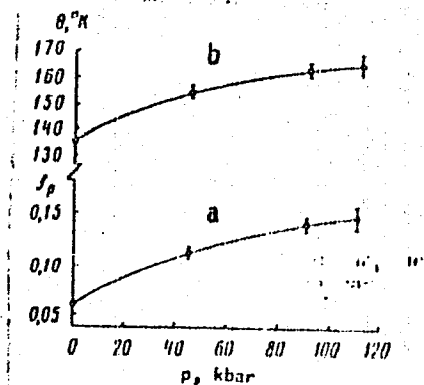


Fig. 2. Dependence on the pressure P : a - of the probability of recoilless γ -quantum emission f_p , b - of the effective Debye temperature θ .

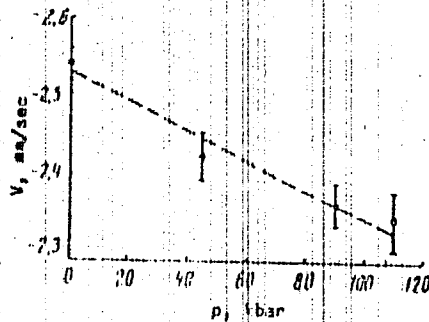


Fig. 3. Pressure dependence of the position of the resonance line of β -Sn relative to the energy of the resonance in SnO_2 .

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emission f_p and the increase of the corresponding effective Debye temperature Θ with increasing pressure. These are shown in Fig. 2. The obtained dependence yields an estimate $\gamma = 2.4 \pm 0.3$ for the Gruneisen constant at atmospheric pressure, which agrees well with the value $\gamma = 2.25$ calculated by the Gruneisen formula. Another result of the experimental curves is the shift in the energy of the resonance in β -Sn towards the energy of the resonance in SnO_2 , shown in Fig. 3. Authors thank L. F. Vereshchagin and Ye. N. Yakovlev for support and interest in the work, V. V. Sklyar^{4/5} revskiy, N. N. Filipov^{4/5}, and K. P. Aleshin^{4/5} for help in constructing the Mossbauer spectrometer, N. N. Delyagin for a useful discussion of the results, and also Yu. T. Babotin and V. A. Guzov for participating in the experiments. Orig. art. has: 5 figures. ^{4/5} ^{4/5}

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VORONOV, F.F.; STAL'GOROVA, O.V.

Elastic properties of barium at pressures up to 22000 kg/cm^2 . Zhur.
eksp. i teor. fiz. 49 no.3:755-759 S '65. (MIRA 18:10)

1. Institut fiziki vysokikh davleniy AN SSSR.

KLK6466, F. I.

USSR/Atomic and Molecular Physics - Statistical Physics, Thermodynamics, D-3

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34347

Author: Vereshchagin, L. F., Voronov, F. F.

Institution: Laboratory of Ultrahigh Pressures, Academy of Sciences USSR, Moscow

Title: Change in Melting Temperature of Solid Ammonia at High Pressures

Original Periodical: Zh. fiz. khimii, 1956, 30, No 2, 329-333

Abstract: To determine the melting temperature t_m of ammonia as a function of the applied pressure, a setup was built which makes it possible to carry out the research at pressures up to 3,000 atmos. It is established that t_m increases monotonically in the range of one to 3,000 atmos.

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SOV-120-58-3-20/33

AUTHORS: ~~Voronov, P. F.~~, Vereshchagin, L. F., Murav'yev, V. I.

TITLE: A Pulse Method of Measuring the Speed of Propagation of Ultrasonic Waves (Impul'snaya ustanovka dlya izmereniya skorosti rasprostraneniya ul'trazvukovykh voln)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 3, pp B1-85 (USSR)

ABSTRACT: The method is based on measuring the time by which the echo signal is delayed with respect to the incoming signal. The method is illustrated by Fig.1. The triggering block 1 produces pairs of pulses at a repetition frequency of 1 kc/s. One of the pulses is used to trigger the pulse generator 2 and the other triggers the slave sweep of the oscilloscope 4. The second pulse in each pair produced by the generator 2 is delayed with respect to the first one by adjustable and known length of time. Simultaneously with the triggering pulse the generator 2 produces a short packet of waves having a frequency of 10 Mc/s at a rate of 1000 packets per second. This r.f. pulse is

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A Pulse Method of Measuring the Speed of Propagation of Ultrasonic Waves

applied to the piezoelectric crystal 5 . This leads to the production of elastic vibrations 7 in the specimen under investigation 6 . The elastic waves are reflected at the far end of the specimen (or a reflector) and return to the quartz crystal. The reflected signal (echo) is amplified by the receiver 3 , is detected and then applied to the oscillograph 4 . The triggering block is designed so that when the triggering pulses are suitably delayed one can observe on the CRO screen both the transmitted and the reflected pulses. If the reflected and transmitted pulses are made to coincide on the CRO screen (by adjusting the delay time in each pair of pulses) one obtains a measure of the time taken by the elastic wave in traversing the specimen under investigation. The time scale must of course be calibrated in a preliminary experiment. The apparatus differs from those used previously in that it employs a very accurate delaying circuit based on a quartz stabilised generator (2). If the leading edge of the signal is considerably distorted on passing through the medium the "dark spot" method described by Bergman in Ref.6 is used. Using the above method, the velocity of propagation of ultrasonic

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A Pulse Method of Measuring the Speed of Propagation of Ultrasonic Waves

waves may be measured to an accuracy of 5%. Results are given for copper and iron. There are 4 figures, 1 table and 6 references, of which 3 are English and 3 Soviet.

ASSOCIATION: Laboratoriya fiziki sverkhvysokikh davleniy AN SSSR
(Laboratory of Physics of Ultra-High Pressures of the Academy of Sciences, USSR)

SUBMITTED: September 15, 1957.

1. Ultrasonic radiation--Propagation
2. Ultrasonic radiation--Measurement
3. Pulse generators--Applications
4. Pulse generators--Performance

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E073/E335

AUTHORS: Voronov, F.F. and Vereshchagin, L.F.

TITLE: High-pressure Apparatus for Ultrasonic
Investigations up to 10 katm.

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No. 6,
pp. 104 - 107

TEXT: For the purpose of studying the elastic properties
of solid bodies at pressures up to 10 katm. By means of ultra-
sonic pulses, using a method described in earlier work
(Ref. 1), compact high-pressure equipment was built. This
equipment can also be used for other investigations for which
it is sufficient to have available a volume of 96 cm³. The
range of operating temperatures is determined by the
potentialities of the circulation thermostat, which is
connected to the jacket of the high-pressure vessel and
also by the properties of the operating fluid. A sketch of
the equipment is shown in Fig. 1. A high-pressure vessel
1 contains a quartz plate and the investigated specimen.

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High-pressure Apparatus for Ultrasonic Investigations up to 10 katm.

The pressure multiplier consists of two cylinders 17 and 21 with pistons 18 and 20 and the housing 19, 3 being a connection crosspiece. The low-pressure system 10-15 feeds the pressure multiplier. The system 5-9 produces a preliminary pressure of the operating fluid in the high-pressure range which is measured by a 10 katm. spring pressure gauge 16 and a manganin pressure gauge 4. The outer thermostat 2 is connected to the jacket of the high-pressure vessel. The entire equipment is vertical and is mounted in a housing of 1.2 x 1. x 2.2 m, made of 10 mm thick sheet steel. Visual observation of the pressure gauges is through a 120 x 200 mm window, which is protected by a 35 mm thick sheet of perspex. The equipment is controlled by a press-button pump starter and a system of valves, the handles of which are outside the housing. The components of the equipment are described in some detail. Fig. 2 shows the obturator 5

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High-pressure Apparatus for Ultrasonic Investigations up to 10 katm.

with a collar 1 and a seal consisting of two steel rings 2 and 4 and the teflon ring 3. The obturator fits onto the holder of the specimen 9. The same figure shows clearly the radiofrequency lead into the high-pressure zone, connecting the quartz plate 10 that is glued onto the specimen 11 with the pulse-generating equipment. The radio connection is made by means of a steel head 8 which carries a thin spike and a plane-parallel sealing ring 7 and a plane-parallel microlite, 3 mm thick, sealing ring. Chlorvinyl washers are fitted between the faces of the microlite ring and the adjacent steel surfaces. The steel spike is a current conductor but also serves for preliminary pressing of the steel head and the microlite ring onto the flat face of the obturator. The self-capacitance of the radio input lead was 22 pF in air at 10 Mc/s. Fig. 3 shows a sketch of the joint of individual elements of the high-pressure system. Fig. 4 shows the internal housing of the high-pressure

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cylinder of the multiplier : the piston 10 has a seal consisting of a mushroom-shaped part 5, the seat 9, steel 8, copper 6 and teflon 7 sealing rings. This figure also shows the obturator 1, which is fitted with an uncompensated surface consisting of a stepped bushing 4 and chlorvinyl rings 2 and 3. Fig. 6 shows an obturator with the electric leads to the manganin pressure gauge. The equipment worked reliably in the pressure range of 10 katm. The "mushroom" seals of the piston of the cylinder withstood 30 operating cycles without requiring replacement. The sealing rings of the obturator in the high-pressure vessel required frequent replacement due to the fact that the obturator has to be removed and re-fitted after each test.

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