

PC NYAKOV, M.I., inzh.

Studying a fluted feed apparatus for sowing small seed. Trakt.
i sel'khoz mash. no. 5:26-28 My '65. (MIRA 18:6)

1. Vsesoyuznyy ordena Trudovogo Krasnogo Znameni nauchno-
issledovatel'skiy institut maslichnykh i efiromaslichnykh
kul'tur.

ANDRYUSHCHENKO, A.I., doktor tekhn. nauk; PONYATOV, V.A., inzh.

Increasing the efficiency of steam-gas systems by utilizing
the exhaust gases for air heating. Teploenergetika 12 no.6:
66-69 Je '65. (MIRA 18:9)

1. Saratovskiy politekhnicheskii institut.

PONYATOV, V.A., inzh.

Construction of high-pressure steam generators with increased
air excess. Sbor. nauch. soob. SPI no.17:54-64 '62.
(MIRA 17:6)

PONYATOV, V.A., inzh.

Calculation of the optimum temperature of the exhaust gases of steam and gas systems with high-pressure steam generators. Izv. vys. ucheb. zav.; energ. 6 no.6:57-65 Je '63. (MIRA 16:11)

1. Saratovskiy politekhnicheskoy institut. Predstavlena kafedroy teploenergetiki.

L 05212-67 EWP(f) WW

ACC NR: AP7000766

SOURCE CODE: UR/0143/66/000/005/0046/0053

AUTHOR: Ponyatov, V. A. (Candidate of Technical Sciences); Zmachinskiy, A. V. (Candidate of Technical Sciences); Musatov, Yu. V. (Engineer)

34
B

ORG: Saratov Polytechnic Institute (Saratovskiy politekhnicheskiy institut)

TITLE: Determination of most suitable backpressure in gas turbines in steam-gas installations with exhaust of combustion products into boiler unit

SOURCE: IVUZ. Energetika, no. 5, 1966, 46-53

TOPIC TAGS: steam boiler, gas turbine, steam turbine / K-200-130 steam turbine, K-300-240 steam turbine, GT-30-750 LMZ gas turbine, GT-60-750 gas turbine

ABSTRACT: An analysis of the determination of the optimal backpressure of the gases for a steam-gas unit consisting of typical steam and gas turbines with fixed initial parameters. The method developed permits analytic calculation of the economically most suitable backpressure. The economically most suitable pressure drops for each heating surface are also found. The values calculated are: a) for the steam turbine K-200-130 with the gas turbine GT-30-750 LMZ, 1.10 bar; b) for the K-300-240 steam turbine and GT-60-750 LMZ gas turbine, 1.11 bar. A calculation formula is presented for determining the economy of the optimal gas velocities in convective surfaces of the boiler, planned for operation in steam-gas units with exhaust of the combustion products to the boiler burner. [IPRS]

Card 1/190 SUB CODE: 13 / SUBM DATE: 05 May 65 / ORIG REF: 006 / OTH REF: 001
0423 1046

PONUROVA, V.A.

Mobility of neural processes in rabbits, dogs and the lower apes.
Trudy Inst.fiziol. no.2:398-410 '53. (MLRA 7:5)

1. Laboratoriya sravnitel'noy fiziologii vysshey nervnoy deyatel'nosti
i Kafedra anatomii i fiziologii cheloveka i shivotnykh Pedagogicheskogo
instituta im. A.I.Gertsena (sveduyushchiy - L.G.Voronin).
(Nervous system--Mammals)

PONUROVA, V.N., kand. med. nauk (Novosibirsk)

Organization of emergency aid in eye injuries. Zdrav. Ros.
Feder. 8 no.3:8-10 Mr:64 (MIRA 17:4)

PONUROVA V.N.

Late results of splinter wounds of the ciliary body. Oft. zhur. 13 no.6:
327-329 '58. (MIRA 12:1)

1. Iz kafedry glaznykh bolezney (zav. - prof. A.A. Kolen) Novosibirskogo
meditsinskogo instituta.
(EYE--WOUNDS AND INJURIES)

KOL'CHENKO, A.V.; PONYAKOVSKIY, V.I.; TITARENKO, A.I.

Using freezing packers in oil and gas wells. Neft. i gaz.
prom. 3:37-39 JI-S '65. (MIRA 18:11)

L 18331-65 EWT(1)/EEC(t) Feb IJP(c)/ESD(gs)/ESD(t) GG
 S/0185/64/009/011/1233/1239
 ACCESSION NR: AP5000628

AUTHOR: Ponyatenko, N. A. (Ponyatenko, N. A.); Radchenko, I. V. // ^B

TITLE: Effect of Li^+ , Na^+ , K^+ , Rb^+ , Cs^+ , Ag^+ , and NH_4^+ ions on the Raman scattering spectrum of the NO_3^- ion in melts and in aqueous solutions of nitrates

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 9, no. 11, 1964, 1233-1239

TOPIC TAGS: ion interaction, Raman scattering spectrum, Raman scattering

ABSTRACT: In order to study interactions between ions, Raman scattering spectra of NO_3^- ions in melts of LiNO_3 , NaNO_3 , KNO_3 , RbNO_3 , CsNO_3 , AgNO_3 , and NH_4NO_3 were investigated at temperatures ranging from the melting point of each salt up to 550C, as well as in aqueous solutions of these salts at concentrations ranging from weak to saturated and at temperatures ranging from 28 to 100C. It was found that the frequency of fully symmetrical oscillations ν_1 of the NO_3^- ion under the influence of surrounding cations in solutions and in melts varied linearly, depending on r_k/r_a (1/s), where r_k is the

Card 1/3

L 18331-65

ACCESSION NR: AP5000628

univalent radius of the cation, r_a is the univalent radius of the anion, and s is the screening factor of the cation. A comparison of the Raman scattering spectrum of a KNO_3 melt with the spectrum of this salt in an aqueous solution shows that the frequency ν_1 of the NO_3^- ion is the same in both cases. The conclusion is drawn that water molecules have the same effect on the frequency ν_1 of the NO_3^- ion oscillations as the K^+ ion. All other ions of the investigated series may be divided into two groups: 1) Li^+ and Na^+ , which affect the NO_3^- ion oscillations more strongly than water molecules; and 2) Rb^+ , NH_4^+ , Cs^+ , and Ag^+ , which have a weaker effect on those oscillations than water molecules. If these assumptions correspond to reality, then the frequency ν_1 should depend on the concentration of the salt in solution as well as on the number of cations of a given type which surround an NO_3^- ion. Such dependence is observed very clearly in the case of Li^+ and Ag^+ ions. Orig. art. has: 3 figures, 2 formulas, and 1 table.

ASSOCIATION: Dnipropetrovs'ky'y metalurgichny'y insty*tut
(Dnepropetrovsk Metallurgical Institute)

Card 2/3

L 18331-65

ACCESSION NR: AP5000628

SUBMITTED: 11Feb64

ENCL: 00

SUB CODE: NP, OF

NO REF SOV: 003

OTHER: 016

ATD PRESS: 3155

Card 3/3

PONYATENKO, N.A. [Poniatenko, M.A.]; RADCHENKO, I.V.

Effect of Li^+ , Na^+ , K^+ , Rb^+ , Cs^+ , Ag^+ , and NH_4^+ ions on the
Raman spectrum of the NO_3^- ion in melts and aqueous solutions
of nitrates. Ukr. fiz. zhur. 9 no.11:1233-1239 N '64
(MIRA 18:1)

1. Dnepropetrovskiy metallurgicheskiy institut.

DYAD'KIN, I.G. (Oktyabr'skiy); LISENENKOV, A.T. (Oktyabr'skiy);
PONYATOV, G.I. (Oktyabr'skiy)

Speeding up the convergence of the Monte Carlo method in solving
radioactive logging problems. Zhur. vych. mat. i mat. fiz. 5
no.4:763-768 J1-Ag '65. (MIRA 18:8)

ANDRYUSHCHENKO, A.I., doktor tekhn. nauk, prof.; LAPSHOV, V.N., kand. tekhn. nauk; PONYATOV, V.A., inzh., aspirant

Thermal effectiveness of steam and gas systems using the heat from intermediate air cooling in the steam portion. Teploenergetika 12 no.4:77-80 Ap '65. (MIRA 18:5)

1. Saratovskiy politekhnicheskiy institut.

ANDRYUSHCHENKO, A.I., doktor tekhn. nauk, prof.; LAPSHOV, V.N., kand. tekhn. nauk, dotsent; PONIYATOV, V.A., inzh.; GORBACHEV, A.I., inzh.; VESELOV, B.N., inzh.

Choice of the optimal parameters for gas part of large steam
gas units. Izv. vys. ucheb. zav.; energ. 7 no.11:39-46 N '64
(MIRA 18:1)

1. Sgaratovskiy politekhnicheskoy institut. Predstavlena kafedroy
teploenergetiki.

ANDRYUSHCHENKO, A.I., doktor tekhn. nauk, prof.; LAPSHOV, V.N., kand.
tekhn. nauk, dotsent; PONYATOV, V.A., inzh.; AMINOV, R.Z.,
inzh.

Thermodynamic calculation technique of the optimum parameters
of the gas section of binary steam and gas systems. Izv. vys.
ucheb. zav.; energ. 7 no.6:54-60 Je '64 (MIRA 17:8)

1. Saratovskiy politekhnicheskiy institut. Predstavlena ka-
fedroy teploenergetiki.

LAPSHOV, V.N., kand. tekhn. nauk; PONYATOV, V.A., inzh.

Determination of the optimum outflow speed of gases in large
steam and gas systems. Izv. vys. ucheb. zav. i energ. no. 7:
34-40 J1 '64 (MIRA 17:8)

1. Saratovskiy politekhnicheskiy institut. Predstavlena ka-
fedroy teploenergetiki.

L 04814-67

ACC NR: AP6025420

(N)

SOURCE CODE: UR/0143/66/000/007/0054/0061

AUTHOR: Ponyatov, V. A. (Candidate of technical sciences); Musatov, Yu. V. (Engineer)

ORG: Saratovsk Polytechnic Institute (Saratovskiy politekhnicheskiy institut)

29
B

TITLE: Determination of the most advantageous size of the heating surfaces in the boiler units of steam gas plants

SOURCE: IVUZ. Energetika, no. 7, 1966, 54-61

TOPIC TAGS: gas turbine engine, steam boiler

ABSTRACT: The article is devoted to determination of the optimum temperature gradients and gas velocities at the heating surfaces of boiler units operating under pressure feeding. Under these conditions, the total temperature effect due to radiation (q_r) of a boiler unit is a variable at constant temperature of the gases (T'') at the outlet from the furnace, and varies according to a linear law as a function of Δt :

$$q_r = \alpha_{r, \text{max}} (T'_a - T'' + \Delta t), \quad (1)$$

where T'_a is the absolute theoretical combustion temperature,

Card 1/2

UDC: 621.180+621.44

L 04814-67

ACC NR: AP6025420

conventionally determined at $\Delta t = 0$, $^{\circ}\text{K}$; ξ is a coefficient taking into account the difference of the heat capacities of the gases in the furnace (c_{pm}^x) and in the temperature interval of the exiting gases and the surrounding medium (c_{pm}^{yx}); $\xi = \frac{c_{pm}^{yx}}{c_{pm}^x}$; ϕ is the coefficient of heat

retention. Based on data calculated according to the proposed method, a figure allows selection, based on the heating value and the type of fuel, of the optimum values of the minimum temperature gradient in the boiler unit of a steam gas plant with a K-200-130 LMZ turbine, within the limits of 25-110 $^{\circ}\text{C}$. Orig. art. has: 26 formulas and 4 figures.

SUB CODE: 20, 21/ SUBM DATE: 03Nov65/ ORIG REF: 005/ OTH REF: 001

Card 2/2 *gd*

PONYATOV, Vladimir Ivanovich; BERENBLYUM, L.L., redaktor; SVYATITSKAYA,
K.P., vedushchiy redaktor; SHIKIN, S.T., tekhnicheskii redaktor

[Repairing, assembling, and operating boring machinery] Remont,
montazh i obsluzhivanie burovogo oborudovaniia. Moskva, Gos.
nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1956.
254 p. (MLRA 10:1)

(Boring machinery)

PONYATOV, V.I.; POPOV, A.I.

Device for unfastening drill pipe bushings. Neftianik 2 no. 4:24-25
Ap. 1977. (MIRA 1015)

1. Direktor kumbyr bychnogo buranya No. 2 kumbyr "Pymenoburneff".
2. Nauchnik protivokorrozionno-tekhnicheskogo otdela.
(all well drilling equipment and supplies)

KUSHNIR, I.M.; PONYATOVA, N.M.; BOGATYAYOVA, M.N.; SARO, V.Ya.; OHLAVA, I.V.

Cyclic variability of leucocytes and leucocyte sedimentation
reaction in pregnancy. Mek. vop. klim. i kraev. pat. no.3:65-72
'63. (MIRA 18:10)

1. Iz vrachebno-sanitarnoy sluzhby (nachal'ni" - V.G.Yegiazaryan)
Zabaykal'skoy zheleznoy dorogi i kafedry patofiziologii (sve-
dayushchiy - dotsent V.A.Kozlov) Chitinskogo meditsinskogo instituta.

SELIMOV, M.A.; BOLTUTSKIY, L.G.; SEMENOVA, Ye.V.; PONYATOVSKAYA, L.D.

Lyophilized phenol antirabies vaccine for use in medical practice.
Zhur. mikrobiol. epid. i immun. 32 no.5:46-50 My '61.

(MIRA 14:6)

1. Iz Moskovskogo instituta vaktsin i syvorotok imeni Mechnikova.
(RABIES)

KHIVCHENKOVA, S.P.; KONTATOVSKAYA, N.I.

Examination of the effect of polyvalent typhoid fever bacteriophage in experimental
infection of animals with local infection of conjugate vaccine against typhoid
fever. (Typhoid fever) (Bacteriophage) (Vaccine) (Animals)

Ponyatovskaya, N. I.

USSR / Virology. Bacterial Viruses (Bacteriophages). E-1

Abs Jour: Ref Zhur-Biol., No 10, 1958, 42995.

Author : Krivosheeva, S. Z., Ponyatovskaya, N. I.

Inst : Not given.

Title : Method for Increasing Dysentery Phage Titer Under Industrial Conditions.

Orig Pub: Tr. Ufimsk. n.-i. in-ta vaktsin i syvorotok, 1957,
11, 4, 80-74

Page 1/2

FORISTOVSKAYA, V. P.

Steppes

Problem of seed propagation in plant associations of steppes. Trudy Bot. inst.
AN SSSR, Ser. 3, no. 7, 1951.

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

1. Botaničeskij Institut imeni V.I. Komarova Akademii Nauk SSSR.

(Kirghizstan--Grasses)

PONYATOVSKAYA, V.M.

Root systems of the most important forage grasses and legumes
of Kaliningrad Province. Trudy Bot.inst.Ser.3 no.10:102-153

'56.

(MIRA 9:6)

(Kaliningrad Province--Forage plants) (Roots (Botany))

PONYATOVSKAYA, V.M.

Method of studying the structure of plant associations (with a survey of English and American literature). Bot. zhur. 43 no.4: 585-605 Ap '58. (MIRA 11:6)

1. Botanicheskiy institut im. V.L. Komarova Akademii nauk SSSR, Leningrad.

(Botany--Ecology)

1. Botanical Institute im. V.I. Komarova an Acad. Sci. USSR, Leningrad.

(Grasses) (Roots (Botany))

PONYATOVSKAYA, V.M.

Two trends in phytocoenology. Bot. zhur. 44 no.3:402-407 Mr '59.
(MIRA 12:7)

1. Botanicheskiy institut im. V.I. Komarova AN SSSR, Leningrad.
(Plant communities)

PONYATOVSKAYA, V.M.

"Application of mathematico-statistical methods to geobotany";
synthetic processing of materials [in German] by M. Ružicka. Reviewed
by V.M. Poniatovskaia. Bot. zhur. 44 no.7:1026-1027 J1 '59.
(MIRA 12:12)

1. Botanicheskiy institut im. V.L. Komarova AN SSSR, Leningrad.
(Phytosociology) (Ružicka, M.)

104. 1000

[Field geobotany] Polevaia geobotanika. Moskva, Nauka.
Vol.3. 1964. 530 p. (MIRA 17:12)

1. Akademiya nauk SSSR. Botanicheskiy institut. 2. Botani-
cheskiy institut AN SSSR (for Korchagin Ponyatovskaya).

PONYATOVSKAYA, V.M.

Morphological study of a plant community as exemplified by desert
steppes. Probl. bot. 6:375-387 '62. (MIRA 16:5)
(Kazakhstan—Plant communities)

SYROKOMSKAYA, I.V.; PONYATOVSKAYA, V.M.

Ecobiological characteristics of some meadow plant associations.

Trudy Bot. inst. Ser. 3 no. 12:76-98 '60. (MIRA 14:1)

(Boksitogorsk District—Pastures and meadows)

LAVRENKO, Ye.M., red.; KORCHAGIN, A.A., red.; POBYATOVSKAYA, V.M., red.;
RYBKINA, A.G., red.izd-vs; SMIRNOVA, A.V., tekhn.red.

[Field geobotany] Polevaia geobotanika. Pod obshchei red. E.M.
Lavrenko i A.A.Korchagina. Moskva. Izd-vo Akad.nauk SSSR.
Vol.2. 1960. 499 p. (MIRA 14:1)

PONYATOVSKIY, V.A.

Experience in the mechanization of lumbering operations in the
enterprises of "Chernovitsles" Trust. Bum.1 der.prom. no.4:32-
35 O-D '62. (MIRA 15:12)
(Ukraine—Lumbering—Equipment and supplies)

KULYAVIN, V.I.; PONYAKOVSKIY, V.I.

Economic efficiency in the use of diamond bits in the enterprises
of the Main Geological-Prospecting Administration of the Ukrainian
S.S.R. Neft. i gas. prom. no.3:17-19 JI-S '64.

Conference for the exchange of the latest views on the drilling
of oil and gas wells. 1964, '77 (MIR 1774.)

REMEZOV, N.P. [deceased]; RODIN, L.Ye.; BAZILEVICH, N.I.; Prinimali
uchastiye: ALEKSANDROVA, V.D.; BORISOVA, I.V.; BYKOVA, L.N.;
ZONNA, S.V.; KARPOVA, V.G.; MINA, V.N.; NECHAYEVA, N.T.;
PONYATOVSKAYA, V.M.; REMEZOVA, G.L.; SAMOYLOVA, Ye.M.;
SMIRNOVA, K.M.; SUKHOVERKO, R.V.

Methodological instructions for studying the biological
cycle of ash substances and nitrogen of terrestrial plant
communities in the main natural zones of the temperate
zone. Bot. zhur. 48 no.6:869-877 Je '63. (MIRA 17:1)

1. Botanicheskiy institut imeni V.L. Komarova AN SSSR, Lenin-
grad i Pochvennyy institut imeni V.V. Dokuchayeva Ministerstva
sel'skogo khozyaystva SSSR, Moskva.

PONYATOVSKIY, S., iskusstvoved

Favorite forms. Grazhd. av. 22 no.2:28 P '65.

(MIRA 18:5)

PONYATOVSKIY, V.V.

Stability of thin shells under the action of hydrostatic
pressure. Issl.p.o uprug.i plast. no.1:165-168 '61.
(MIRA 15:2)
(Elastic plates and shells)

PONYATOVSKIY, V.V.
PONYATOVSKIY, V.V.; PORTNOY, G.V.

Mechanized assembly of wooden boxes. Kons. i ov. prom. 12 no.11:
33-38 N '57. (MIRA 11:1)

1.Vsesoyuznaya nauchno-issledovatel'skaya laboratoriya tary.
(Box making) (Food industry--Equipment and supplies)

PENYATOVSKIY, V.V. (Leningrad)

Theory of bending of anisotropic plates. Prikl. mat. i mekh.
28 no.6:1033-1039 N-D '64 (MLRA 18:2)

PONYATOVSKIY, V.V.; SUKHORUTSKAYA, N.M.; SHUVALOVA, N.S.

New materials for packing food products. Zhur. VKHO 5 no.4:413-
419 '60. (MIRA 13:12)

(Food handling)

S/044/62/000/009/030/069
A060/A000

AUTHOR: Ponyatovskiy, V.V.

TITLE: On the stability of thin shells under hydrostatic pressure

PERIODICAL: Referativnyy zhurnal, Matematika, no. 9, 1962, 61, abstract 9B290.
(In collection "Issled. po uprugosti i plastichnosti". I. Leningrad,
Leningr. un-t, 1961, 165 - 168) ✓

TEXT: It is established that the operator of the linear theory of shells is symmetric under the usually encountered "tracking" (i.e. unchanged with respect to the material coordinate-system) loads, provided that either the normal displacement or the component of tangential displacement normal to the boundary is equal to zero at the boundary of the shell. Hence follows that the stability of the shell under such boundary conditions may be investigated by the bifurcation method.

S.G. Mikhlin

[Abstracter's note: Complete translation]

Card 1/1

PONYATOVSKIY, V.V. (Leningrad)

Theory of plates of medium thickness. Prik. mat. i mekh. 26
no.2:335-341 Mr-Apr '62. (MIRA 15:4)
(Elastic plates and shells)

L 20668-66 EWP(e)/EWT(m)/EWP(w)/EPP(n)-2/T/EWP(t)/EWP(k)/ETC(w)=6 TJP(n) JD/TG/
ACC NR: AP6001473 (A) SOURCE CODE: UR/0226/65/000/012/0045/0047

WW/HW/JG/EM

AUTHOR: Shchegoleva, R. P.; Golubeva, L. S.; Litvin, D. F.; Ponyatov-
skiy, Ye. G.; Zhirkin, Yu. N. 17B

ORG: Central Scientific Research Institute of Ferrous Metallurgy
(Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii)

TITLE: The Zr-Ti-O-Fe deformable alloy for high-pressure chambers

SOURCE: Poroshkovaya metallurgiya, no. 12, 1965, 45-47

TOPIC TAGS: deformable body, high strength alloy, high alloy steel,
coherent scattering, neutron scattering, high pressure chamber, metal
forging, ultimate strength

ABSTRACT: Sintered Zr-Ti-O-Fe deformable alloy designed for high-
pressure chambers was developed by the authors during neutronographic
investigations of materials. The alloy has a composition corresponding
to the zero amplitude of coherent scattering for neutrons (53% Zr,
44.95—43.8% Ti, 0.25—0.40% O, and 1.0—2.0% Fe) and to the structure
of an unordered solid solution. The ultimate strength of forgings is
130—150 dan/mm². [Based on author's abstract] [NT]

SUB CODE: 11/ SUBM DATE: 04Jun65/ ORIG REF: 005/ OTH REF: 001

Card 1/1 BK

PONYATOVSKIY, E. G.

4
1E22

18
Effect of the cooling conditions upon the kinetics of the
martensite transformation. O. P. Makeimova and E. G.
Ponyatovskiy. *Problemy Metalloved. i Fiz. Metall.* Sbornik
No. 4, 189-91 (1955); Referat. Zhur., Met. 1956, No. 6723.
The magnetometric method was used to study the effect of
cooling conditions on the stability of austenite and the ki-
netics of the martensite transformation (MT) in an Fe alloy
contg. 22.4% Ni and 3.4% Mn, of which the martensite
point T_0 is -20° . Preliminary undercooling of austenite
increases the velocity of MT on reheating, the more the
greater the degree and rate of preliminary undercooling.
At the same time the interval of MT is broadened, and T_0
rises (on cooling down to -100° it rises by $20-30^\circ$); but the
lower temp. limit of MT decreases. The preliminary under-
cooling of austenite practically does not affect the final
amount of martensite. These phenomena are due to
stresses created by unequal growth of crystals of martensite,
together with increase of sp. vol. during the transformation.
Alexis N. Pashchuk

11
RS

PONYATOVSKIY, Ye. G.

A study of the polymorphic transformations of bismuth at super-high pressures. V. P. Entuzov and Ye. G. Ponyatovskiy (Inst. Cryst. Acad. Sci. U.S.S.R., Moscow). *Kristallografiya* 1, 572-8 (1956). The phase diagram of Bi (99.995%) was investigated at pressures of up to 30,000 kg./sq. cm. and at temps. between the m.p. and room temp. The β -phase melts in the pressure range of 17,300 to 22,400 kg./sq. cm. at a const. temp. of 184° and hence becomes liquid without change in vol. The m.p. of the β -phase increases 0.0072°/kg./sq. cm. The phase changes $\alpha \rightleftharpoons \beta$ and $\beta \rightleftharpoons \gamma$ take place very rapidly and with marked hysteresis in the temp. range studied (rate of change of temp. $\sim 1^\circ/\text{sec.}$). At 20° the hysteresis, in terms of pressure, is ~ 1000 kg./sq. cm. for the $\alpha \rightleftharpoons \beta$ transition and ~ 900 kg./sq. cm. for the $\beta \rightleftharpoons \gamma$ transition. A. I. M.

Fig. 2

pm
KHS
MTT

PONYATOVSKIY, Ye. G.

18
The melting point of indium under pressure up to 20,000
kg./sq. cm. V. P. Butuzov and Ye. G. Ponyatovskii (Inst.
Cryst., Acad. Sci., U.S.S.R., Moscow). *Kristallografiya* 1,
730-7 (1980).—The mean increase in the m.p. of In under

pressure is 4.18×10^{-3} degree/kg./sq. cm. over the range
0 to 8×10^4 kg./sq. cm. The change in m.p. is almost
linear. The Clapeyron equation gives the change in vol.
of In on melting as 2.83×10^{-3} cc./g. No polymorphic
changes were detected.
A. L. Mackay

RM

RG

MT

Strait
that

6
1-452c

2

PONJATOVSKIY, Ye. G.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1306
AUTHOR BUTUZOV, V.P., PONJATOVSKIY, E.G., SACHOVSKOJ, G.P.
TITLE The Melting Temperature of Zinc, Cadmium, Thallium, and Antimony
at Pressures of up to 30.000 kg/cm².
PERIODICAL Dokl. Akad. Nauk, 109, fasc. 3, 519-520 (1956)
Issued: 9 / 1956 reviewed 9 / 1956

The influence exercised by pressure on the melting temperature of chemically pure Zn, Cd, Tl and Sb is studied. A diagram illustrates the melting curves of these elements up to 30.000 kg/cm² pressure, which were plotted on the basis of experimental data. If pressure is increased from 0 to 30.000 kg/cm², the melting temperature of Zn, Cd and of Tl increases by 129°, 187° and 190° respectively. This increase is linear in the case of Zn and Cd, but in the case of Tl this increase is somewhat decelerated with increasing pressure. However, the melting temperature of antimony decreases if pressure is increased from 0 to 30.000 kg/cm², and this decrease accelerates somewhat with growing pressure. Thus, antimony, like bismuth and thallium, has an abnormal course of the melting curve in dependence on pressure.

Because of the anomalous pressure dependence of the melting temperature of antimony as well as because of the similarity of the physical and chemical properties with bismuth and antimony, it may be assumed that antimony passes through a polymorphous transformation at excessively high pressures just like Bi I → Bi II. On the occasion of the thermal examination of antimony at pressures of up to 30.000 kg/cm² in the temperature interval of between room temperature and melting

AUTHOR: Ponyatovskiy, Ye.G. SOV/70-3-4-22/26
TITLE: ~~The Melting Point of Potassium~~ at Pressures up to
30,000 kg/cm² (Temperatury plavleniya kaliya pri davleniyakh
do 30 000 kg/cm²)
PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 4, p 508 (USSR)
ABSTRACT: The m.p. of potassium has been measured at pressures
more than twice those used by Bridgman to test a hypothesis
by Ebert (Oesterreich. chem. Zeitung 1/2, 1 - 11, 1954) that
a critical point would be found at 22 390 kg/cm² and 225 °C.
Pressure was measured with a manganin manometer to
± 100 kg/cm² and temperature with an iron nickel thermo-
couple to ± 1.5 °C. Melting was detected from the heating
and cooling curves recorded automatically. The curve of
m.p. against pressure rises monotonically from 263 ° at
atmospheric pressure to 251 °C at 30 000 kg/cm². At these
two points, the tangents are 0.016 and 0.003 degrees/kg/cm²

card 1/2

The Melting Point of Potassium at Pressures up to 30 000 kg/cm² SOV/70-3-4-22/26₂

The initial stage of the curve agrees very well with Bridgman's findings. Any special point would have been detected in the experiment but no trace was found. There are 2 references, 1 of which is German and 1 English.

ASSOCIATION: Institut kristallografii AN SSSR
(Institute of Crystallography Ac.Sc.USSR)

SUBMITTED: April 2, 1958

card 2/2

SOV/137-58-9-19825

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 245 (USSR)

AUTHORS: Maksimova, O.P., Ponyatovskiy, Ye.G., Rysina, N.S.,
Orlov, L.G.

TITLE: Changes in the Kinetics of Martensite Transformation as a
Function of the Position of Martensite Point and the Composi-
tion of the Alloy (Izmeneniye kinetiki martensitnogo prevra-
shcheniya v zavisimosti ot polozheniya martensitnoy tochki i
sostava splava)

PERIODICAL: Sb. tr. In-t metalloved. i fiz. metallov Tsentr. n.-i. in-ta
chernoy metallurgii, 1958, Vol 5, pp 25-40

ABSTRACT: The effect of the position of the martensite point, T_M , on the
kinetics of martensite transformation was studied on a number
of Mn-alloyed steels (85G2, T_M 155°C; 95G3, T_M 85°C; 70G6,
 T_M -40°C) as well as on a series of carbon-free alloys of the
Fe-Ni-Mn system containing approximately 23% Ni and 3% Mn.
A time-temperature transformation curve for the alloy N24G3
was plotted on the basis of experimental data. As the position
of the T_M is lowered, the initial transformation rate is reduced

Card 1/2

SOV/137-58-9-19825

Changes in the Kinetics of Martensite Transformation (cont.)

throughout the entire temperature range; this is particularly apparent in the alloys of the Fe-Ni-Mn system in which the temperature curves of the transformation rate possess a maximum regardless of the position of the T_M and exhibit no tendencies toward limiting the temperature interval of the ascending branch. In the case of Mn steel the ascending branch of the rate curve is gradually lowered as the temperature interval is reduced; at temperatures of approximately -50° it disappears entirely. It is assumed that the difference in behavior of alloys and steels is attributable to the difference in elastic-plastic properties of austenite contained in these materials.

1. Martensite--Transformations 2. Manganese steel--Phase studies V.R.
3. Martensite--Temperature factors 4. Austenite--Metallurgical effects

Card 2/2

AUTHOR: Ponyatovskiy, Ye. G.

SOV/20-120-5-25/67

TITLE: On the Critical Point of the Curve of Polymorphous Cerium Transformation (O kriticheskoy tochke na krivoy polimorfnogo prevrashcheniya tseriya)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 5, pp. 1021 - 1023 (USSR)

ABSTRACT: First pertinent previous papers are mentioned. This is a study of cerium with less than 0,75% of Nd, less than 0,75% of Pr and less than 1,10⁻⁴% of Pb. The hydrostatic pressure was generated by a compression of a mixture of isopentane with normal pentane in a pressure generator for superhigh pressures. Two methods of the determination of the point of the $\alpha \rightarrow \alpha'$ transition are described. The transition of cerium near room temperature is connected with pronounced hysteresis phenomena. With rising temperature the hysteresis is reduced from 6000 Kilogauss.cm⁻² at 20° to zero at ~280°. The thermal effect of the $\alpha \rightarrow \alpha'$ transition also decreases at rising temperature. At temperatures above 280° (and correspondingly at pressures above 18500 kg.cm⁻²) it becomes so small that no particular points may be noticed on the diagrams. Now the determination of the amount

Card 1/3

On the Critical Point of the Curve of Polymorphous
Cerium Transformation

SOV/20-120-5-25/67

of α' -phase formed as a function of pressure is outlined. The transition $\alpha \rightarrow \alpha'$ begins at a pressure of about 7000 kg.cm^{-2} and terminates at 10000 kg.cm^{-2} . In the pressure interval $7700 - 8350 \text{ kg.cm}^{-2}$ 70% of $\alpha' - \text{Ce}$ are formed. The termination of the transition is less clearly marked. The temperature of transition at a heating and cooling of the samples was investigated in the same manner. The temperature of the equilibrium of α - and $\alpha' - \text{Ce}$ increases linearly as the pressure. The thermal effect and the bulk effect are assumed to decrease according to a rule governing both quantities. If the thermal effect and the bulk effect of the transition of cerium actually tends towards zero at rising pressure, the following can be said concerning the further course taken by the equilibrium curve of $\alpha - \text{Ce}$ and $\alpha' - \text{Ce}$: The curve of the phase transition of the first kind transforms into a curve of the second kind. The curve of the phase transition of first kind terminates at the critical point. Above the critical point there is neither a phase transition of the first kind nor a phase transition of the second kind.

On the Critical Point of the Curve of Polymorphous
Cerium Transformation

SOV/20-120-5-25/67

which are Soviet.

PRESENTED: March 22, 1958, by N.V.Belov, Member, Academy of Sciences, USSR

SUBMITTED: March 10, 1958

1. Cerium--Transformations
2. Cerium--Properties
3. Cerium
--Temperature factors
4. Pressure--Metallurgical effects

Card 3/3

AUTHOR: [illegible]
 TITLE: On the P - T Diagram of Thallium (O P - T diagramme talliya)

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 2, pp 257-259 (USSR)

ABSTRACT: Bridgeman's measurements on Tl at high pressures have been extended. Using a pressure multiplier examinations were made at up to 35 000 kg/cm² and 650 °C. The material which transmitted the pressure was a mixture of isopentane and n-pentane. The temperature was measured with an iron-nichrome thermocouple to ± 1.5 °C and the pressure with a manganese resistance manometer to ± 100 kg/cm². A specimen of 2.5 g was used. Every 700 kg/cm² from 1 to 33 000 the specimen was heated and cooled at a constant rate of 0.5 °/sec. The melting and solidifying points as well as the $\alpha \rightarrow \beta$ and $\beta \rightarrow \alpha$ transition points were found. More than 160 points on the liquidus and on the transition curves in the P - T diagram were plotted. The supercooling was about 1.5 °. The polymorphic transition is very sharp but proceeds with hysteresis which increases

Card1/3

On the P - T Diagram of Thallium

SOV/70-4-2-27/36

from 2° at 1 kg/cm^2 to 40° at $33\,000 \text{ kg/cm}^2$. To estimate the effect of the rate of temperature change on the hysteresis measurements were made at 5 different rates of heating and cooling. At $27\,800 \text{ kg/cm}^2$ the hysteresis varied from 6° at 0 to 22° at 0.5°C/sec . Measurements are in β -Tl agreement with β -Tl measurements, but it is thought that the β -Tl phase reported by the author at room temperature and 44 mm. Hg. may be a different phase. It is probable that the β -Tl with a body centered structure has a low space filling coefficient but a higher specific weight than the close-packed α -Tl. There are 3 figures and 9 references, 2 of which are Soviet, 2 German and 5 English.

Card 2/3

On the P - T Diagram of Thallium SOV/70-4-2-27/36

ASSOCIATION: Institut kristallografii AN SSSR
(Institute of Crystallography of the
Ac.Sc., USSR)

SUBMITTED: September 4, 1958

Card 3/3

For the present, while for some others (B), (G), new solid phases are formed, stable under high pressure and, therefore, their mp increases with pressure. The author studied the P versus T diagram having examined bismuth under changing pressure up to 30,000 kg/cm² and temperatures from 20° C to mp. He used a multiplier for extra high pressure, a mixture of isopentane and n-pentane as the pressure transmitting medium, electric heater, thermocouples

Card 1/4

Concerning the P-T Diagram for Bismuth at up to 30,000 kg/cm² Pressure

78119

SOV/70-5-1-28/30

providing $\pm 1.50^\circ\text{C}$ accuracy, and manganese manometer providing $\pm 100\text{ kg/cm}^2$ accuracy. The phase transition points were determined both at rising and dropping temperatures at steady-state pressure and at rising and dropping pressure at steady-state temperature.

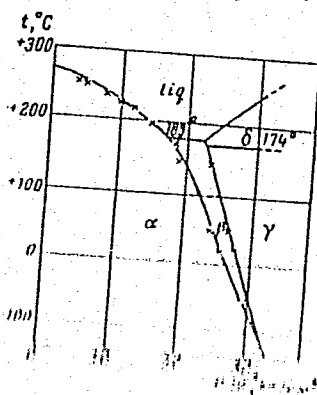


Fig. 2. P-T diagram for bismuth under 30,000 kg/cm² pressure according to author's data. (x - P. W. Bridgman's data.)

Concerning the P-T Diagram for Bismuth at up
to 30,000 kg/cm² Pressure

73119

SOV/70-5-1-28/30

The experimental data is illustrated in Fig. 2 and 3. $\gamma \rightarrow \delta$ phase transition released about 0.8 cal/g energy. The equilibrium curve $\gamma \rightleftharpoons \delta$, like $\beta \rightleftharpoons \text{melt}$, is parallel to the P axis and means that the transition does not change the density. The ternary point β - γ - δ is at 174° C and 22,600 kg/cm² pressure. I. S. Zhidakov is acknowledged for taking part in the experiments.

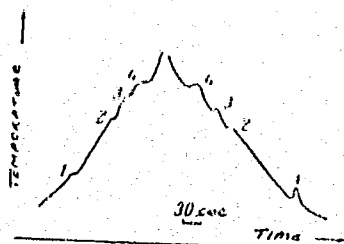


Fig. 3. The heating and cooling curves for bismuth under 23,800 kg/cm² pressure.

Card 3/4

Concerning the P-T Diagram for Bismuth at up
to 30,000 kg/cm² Pressure

78119

SOV/70-5-1-28/30

There are 3 figures; and 5 references, 3 U.S.,
2 Soviet. The U.S. references are: F. P. Bundy,
Phys. Rev., 110, 2, 314-318, 1958; T. Hall, J. Phys.
Chem., 59, 11, 1144-1146, 1955; P. W. Bridgman,
Phys. Rev., 48, 11, 893-906, 1935.

ASSOCIATION:

Crystallographical Institute of the Academy of Sciences
of the USSR (Institut kristallografi AN SSSR)

SUBMITTED:

June 18, 1959

POHYATOVIRIY, YU. II.

Qand Phys-Math Sci - (diss) "Study of polymorphic transformations in bismuth, thallium, and cerium at ultra-high pressures." Kiev, 1961. 17 pp including cover; (Inst of Metallophysics of the Academy of Sciences Ukrainian SSR); 150 copies; price: free; (KL, 6-61 sup, 195)

also 3409

1 (66)

8/120/61/000/003/031/041
E073/E433

AUTHOR: Shakhmurov, N. P. and Pomyatovskiy, Ye. N.
TITLE: The nature of the material as pressure transmission
medium

The investigation was carried out in a super-high pressure multiplier. The investigations were carried out in the high pressure chamber. The investigation high pressure vessel (see sketch) was made of steel 45XHMΦA (45KhNMFA) heat treated to a hardness of 55 R_c. The rod 1 which produced the pressure was made of the tungsten carbide BK4.5 (VK4.5) with a compression strength of 61 to 63 tons/cm².
Card 1/5

On using certain material ...

27718
S/120/61/000/003/031/041
E073/E535

The high pressure chamber was 20 mm high and 12 mm diameter. At the bottom the chamber was closed with a conical steel part 2 which also served for introducing the electric current and was insulated from the body by mica washers 3 and 4. At the top, a 3 mm thick copper probe 6 was placed between the substance to be compressed 5 and the pressure generating rod 1. This copper probe (plate) served both as a sliding contact and as a seal. The pressure inside the chamber was measured from the pressure of the polymorphous transformations of bismuth, which at 20°C equal 25.9 and 27.7 katm. The polymorphous transformations were recorded by a thermal method from the change in the temperature of the specimen resulting from the transformation. For this purpose a 5 mm diameter 3 mm high bismuth specimen 7 was placed into the substance being investigated. Into the centre of the specimen the joint of a thermocouple 8 was introduced, one branch of which was connected to the electric input lead, whilst the other end was connected to the copper seal. The distance from the centre of the bismuth specimen to the electric input lead was 10 mm. During the experiments the pressure in the

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001342210005-3"

27718
S/120/61/000/003/031/041
E073/E535

channel of the pressure multiplier was made to increase or decrease in a continuous manner. If the pressure of the specimen reached the pressure of the first or the second transformation of bismuth, an appreciable increase or decrease of the temperature of the specimen occurred which showed as a peak on the thermograph. This method is simpler than the method of measuring the electric resistance and permits measuring the pressure in a solid plastic material at any point of the high pressure chamber. The pressure directly under the rod is calculated from the ratio of the areas of the rod and the piston of the top press of the pressure multiplier, taking into consideration friction in the piston glands. From the data of thermal analysis, the pressure gradients between the rod and the centre of the high pressure chamber were determined for various media. The specific pressure applied to the rod in the case of a pressure in the centre of the chamber of 25.9 katm was 29.1 katm for silver chloride, 30.7 for teflon, 31.2 for paraffin wax, 40.9 and 42.4, respectively, for pyrophyllite and talc stone. Consequently, the pressure gradients between the rod and the

On using certain material ...

27718
S/120/61/000/003/031/041
E073/E535

X

centre of the chamber were 3.2, 4.8, 5.7, 15.0 and 16.5 kbar, respectively. These values also include the pressure gradient

In simple closed loop was used to the experiment found the highest gradient was obtained in late stone. The high pressure gradient in pyrophyllite can be reduced (from 68 to 40%) by placing a 0.5 to 0.7 mm thick layer of lead between the pressure transmitting medium and the walls of the chamber. This shows that the major part of the pressure gradient in the solid phase is due to friction at the boundary between the chamber walls and the pressure transmitting medium. Thus, the obtained results show that even in such plastic media as silver chloride and paraffin wax the pressure gradient along the height of the chamber is quite considerable and that the conditions of the pressure from all sides differ substantially from hydrostatic
Card 4/5

On using certain material ...

27718

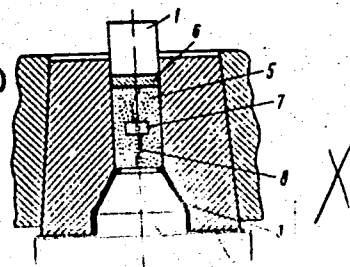
S/120/61/000/003/031/041
E073/E535

conditions. This factor must be taken into consideration in investigations carried out in the solid phase, particularly if pyrophyllite or similar material are used as pressure transmitting media. There are 1 figure and 8 references: 3 Soviet and 5 non-Soviet. The English-language references read as follows: P. W. Bridgman, The Physics of High Pressure, 1949, London; D. T. Griggs, J. F. Bell, Bull. Geol. Sci. America, 1938, 48, 1723; P. W. Bridgman, Proc. Amer. Acad. Arts and Sci., 1952, 34, 169; P. Anderatch, O. U. Anderson, Rev. Scient. Instrum., 1957, 28, No.4, 288.

ASSOCIATION: Institut kristallografii AN SSSR
(Crystallography Institute AS USSR)

SUBMITTED: May 20, 1960

[Abstractor's Note: Abridged translation.]



21227
S/126/61/011/003/016/017
E032/E514

11.3950
11.3500

AUTHOR: Ponyatovskiy, Ye. G.

TITLE: The Melting Point of Lithium and Sodium at Pressures up to 30.000 kg/cm²

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol.11, No.3, pp. 476-477

TEXT: An experimental study is reported of the melting points of lithium and sodium in the pressure range 1-30 000 kg/cm². 99.8% pure lithium and 99.9% pure sodium were employed. The pressures were produced with the aid of an ultra-high pressure multiplier, using a mixture of isopentane and n-pentane. The melting points were determined from the cooling and heating curves. The pressure was measured with a manganese manometer to an accuracy of ± 100 kg/cm² and the temperature with the aid of an ion nichrome thermocouple to an accuracy of $\pm 1.5^{\circ}\text{C}$. The figure shows the melting points ($^{\circ}\text{C}$) as functions of the pressure (kg/cm²). The present data are indicated by open circles and the crosses represent Bridgman's results (Ref.1). The curve for potassium is given for comparison. In order to elucidate whether the melting

Card 1/2

S/070/62/007/003/020/026
0145 1500

TEXT: The results of this paper were presented at the 7th Scientific-Technical Conference for the use of X-rays for investigation of materials.

A polycrystalline film of Tl, the surface of which had been mechanically freed from oxide, was examined in an X-ray diffractometer with Cu radiation at temperatures between -190°C and the melting point of Tl. On first heating up to 232°C the h.c.p. structure was found up to this temperature where the alpha to beta transformation took place very sharply in less than a second (heating $1.5^{\circ}/\text{min}$). Recrystallization rapidly took place, big grains being formed. The structure was then b.c.c. Further cycles through the transformation did not reduce the grain size. To avoid these grain size effects a special specimen of fine grains mixed with aluminium filings was prepared. At 250°C the

Card 1/2

S/078/62/007/010/003/008
B144/B186

AUTHORS: Zakharov, A. I., Ponyatovskiy, Ye. G.

TITLE: Phase diagram of thallium - tin alloys

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 10, 1962, 2374-2377.

TEXT: A supplementary phase diagram of Tl-Sn alloys containing up to 15 at.-% Sn (Fig. 3) was plotted for the temperature range from 20°C up to the melting point in order to elucidate the inconsistencies between, on the one hand, the previous data of the present authors (Kristallografiya, 5, 461 (1962)) and of H. Lipson, A. R. Stokes (Nature, 146, 437 (1941)), and on the other hand, the data of M. Hansen (Constitution of Binary Alloys, 2nd ed., McGraw-Hill, New York, 1958). The X-ray diffraction patterns of the intermetallic compounds of the face-centered cubic phase, were recorded in addition to complete X-ray pictures. The patterns of an alloy containing 4.2% Sn taken at 20 and 112°C prove that heating of the sample results in eutectic

Card 1/2

Phase diagram of thallium - tin alloys

S/078/62/007/010/003/008
B144/B186

decomposition of the $\alpha + \delta$ phase and in formation of the β phase. There are 4 figures and 1 table.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy Institut chernoy metallurgii (Central Scientific Research Institute of Ferrous Metallurgy)

SUBMITTED: January 4, 1962

Fig. 3. Phase diagram of Tl-Sn alloys rich in Tl.

Legend: (1) hexagonal dense packing, α phase; (2) face-centered cubic lattice, δ phase; (3) body-centered cubic lattice, β phase; (4) $\alpha + \delta$; (5) interface of the appearance of the β phase; (6) interface of the appearance of the liquid phase; (a) at.-%; (b) % by weight; full lines with experimental points; interfaces based on the authors' results; full lines without points; data of Blade and Ellwood; broken lines: suggested interfaces.

Card 2/8 2

AUTHOR:

Phase transformations of indium antimonide under high pressure from all sides

TITLE:

Phase transformations of indium antimonide under high pressure from all sides

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 1, 1962, 129 - 131

TEXT: The authors studied the phase transformations of InSb under real hydrostatic pressures to check the results obtained by H. A. Gebbie, P. L. Smith et al. (Nature, 188, no. 4756, 1095 (1960)). The experiments were made on InSb single crystals and polycrystalline samples at temperatures up to 600°C and pressures to up to 28,000 kg/cm². Isopentane was used as pressure-transmitting medium. The phase changes were determined by differential thermoanalysis and measurements of the electrical resistance. The phase diagram plotted from the results obtained differed considerably from the diagram found by Gebbie et al.: With rising pressure the melting point of InSb (α-phase) drops to the triplo point (340°C and 18,300 kg/cm²). At higher pressures, crystallization occurs in the β-modification. The melting point rises with increasing pressure. The phase transformations

Card 1/2

POWELL, T. R.

Existence of a critical point on the isomorphous transformation curve for cerium. Kristallografiia 8 no.2:287-290 Apr-May '63.

(MIRA 17:8)

1. Institut metallovedeniya i fiziki metallov Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii imeni I. V. Bardina.

PONYATOVSKIY, Ye.G.

Phase transformations in an alloy containing 50 atomic % Bi-50 atomic % Sn at high isostatic pressures. Fiz. met. i metalloved. 16 no.4:622-624 0 '63. (MIRA 16:12)

1. Institut metallovedeniya i fiziki metallov TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii.

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001342210005-3"

Effect of pressure on the phase equilibrium of graphite - cementite in the iron - carbon system. Dokl. AN SSSR 151 no.6:1364-1367 Ag '63. (MIRA 16:10)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I.P.Bardina. Predstavleno akademikom G.V.Kurdyumovym.

ACC NR: AR6013662

SOURCE CODE: UR/0058/65/000/010/E027/E027

AUTHOR: Yershova, T. P.; Ponyatovskiy, Ye. G.

TITLE: Effect of high pressures on phase equilibrium in an iron-carbon system

SOURCE: Ref. zh. Fizika, Abs. 10Ye208

REF SOURCE: Sb. tr. Inst. metallurg. i fiz. metallov. Tsent. n. i. fiz. khim.

LITVIN, D. F.; PONYATOVSKIY, Ye. G.

Effect of pressure on the temperature of the antiferromagnetic transformation of chromium. Dokl. AN SSSR 156 no. 1:69-71
My '64. (MIRA 17:5)

1. Institut metallovedeniya i fiziki metallov Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii im. I. P. Bardina. Predstavleno akademikom G. V. Kurdyumovym.

1 36640-65 EPA(s)-2/EWT(m)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(c) Pt-10/Pu-4 IJP(c)
 ACCESSION NR: AP5001994 JD/WM/JG S/G020/64/159/006/1342/1345

AUTHOR: Ponyatovskiy, Ye. G.

TITLE: Phase T-C-P diagram of bismuth-tin alloys

SOURCE: AN SSSR. Doklady, v. 159, no. 6, 1964, 1342-1345

TOPIC TAGS: bismuth tin alloy, temperature pressure diagram, temperature concentration pressure diagram

ABSTRACT: Temperature-concentration-pressure diagrams of the Bi-Sn system were constructed from differential thermal analysis data. The T-P diagram of alloys rich in Sn is shown in fig. 1, and of alloys rich in Bi, in fig. 2. Characteristic isobaric sections of the T-C-P diagrams at 1, 7000, 12000 and 18000 atm are shown in fig. 3. Different rates of heating and of cooling had no effect on the formation and decomposition of the solid solutions. At pressures of 1-7000 atm, the eutectic temperature was slightly lowered and the eutectic shifted with composition in the direction of Bi. Above 7000 atm, the diagram divided into 2 eu-

Card 1/1

6 38640-05
ASSOCIATION WITH ASSOCIATION

Microstructures of samples of the Bi-Sn alloys after heat treatment at different pressures agreed with the data from the phase diagrams. "The author thanks D. S. Kamenetskaya for interest in the work, valuable advice and observations."

Orig. art. has: 3 figures

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metal-lurgii im. I. P. Bardina (Central Scientific Research Institute of Ferrous Metal-lurgy)

SUBMITTED: 16Jun64
NR REF SOV: 004

ENCL: 03
OTHER: 006

SUB CODE: MM, TD

Card 2/5

YERSHOVA, T.P.; PONYATOVSKIY, Ye.G.

Effect of high pressure on phase equilibrium in the system iron - carbon.
Probl. metalloved. i fiz. met. no.8:144-168 '64. (MIRA 18:7)

ZAKHAROV, A.I.; KADOMTSEVA, A.M.; LEVITIN, R.Z.; PONYATOVSKIY, Ye.G.

Magnetic and magnetoelastic properties of the metal alloys
alloy iron-rhodium. Zhur.eksp. i teor.fiz. 46 no.6:2003-2010
APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001342210005-3

1. Moskovskiy gosudarstvennyy universitet.

(MIRA 17:10)

PONYATOVSKIY, Ye.G.

T - C - P phase equilibrium diagram of bismuth-tin alloys.
Dokl. Ak. Nauk SSSR 150 no. 1342-1345 1964 (MIRA 18:1)

YERSHOVA, T.P.; PONYATOVSKIY, Ye.G.

Effect of high pressure on the phase equilibrium line of the
eutectoid part of the iron-carbon diagram. Fiz. Met. i
metalloved. 17 no.4:584-591 Ap '64. (MIRA 17:8)

1. Institut metallofiziki Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii.

ACCESSION NR: AP4035813

8/0020/64/156/001/0069/0071

AUTHOR: Litvin, D. F.; Ponyatovskiy, Ye. G.

TITLE: The effect of pressure on the temperature of antiferromagnetic chrome transformation

SOURCE: AN SSSR. Doklady*, v. 156, no. 1, 1964, 69-71

TOPIC TAGS: pressure, antiferromagnetism, chrome transformation, structure analysis, Cr, Fe, Ni, Co., Cu, impurity, electric resistivity

ABSTRACT: With a view to amplifying earlier studies carried out by Western investigators, the authors employed neutron structure analysis as the most effective method of observing the effect of pressure on the magnetic structure of chrome. The total amount of impurities in the specimens did not exceed 0.02% and the Fe, Ni, Co and Cu content was limited to 0.001 to 0.003%. The authors also studied the effect of pressure on Neel temperature by plotting a diagram for Cr resistivity versus temperature and pressure. All results stood in good agreement with literary data. Hydrostatic pressure was found to lower the temperature of transformation of Cr into the antiferromagnetic state. The mean inclination of

Card 1/2

TITLE: The effect of high pressures on the phase equilibrium lines of the eutectoid part of the iron-carbon diagram

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 4, 1964, 584-591

TOPIC TAGS: iron, carbon, phase equilibrium, eutectic, austenite, cementite, ferrite, compressibility, alpha phase, gamma line

ABSTRACT: The position of the phase equilibrium lines in the eutectoid part of the Fe-C_{gr} (graphite) diagram at a pressure of 30 kilokatmospheres and in the Fe-Fe₃ diagram at 30 and 50 kilokatmospheres was calculated on the basis of thermodynamic data. The following assumptions were made in the calculations: 1) solubility of the carbide in the α -iron could be neglected; 2) the compressibilities of α and γ phases were equal (i.e., the volume effects of the transformation did not depend on the pressure); and 3) the activities of carbon and iron in austenite did not depend on the pressure. Calculations on the equilibrium curve (G-S line) for austenite \rightleftharpoons austenite + ferrite gave the relation

Card 1/3

ACCESSION NR: AP4034056

$$P = \frac{1}{23.4} \frac{\Delta G_{Fe}^{a-T}(T)}{\Delta V_{Fe}^{a-T}(T)}$$

where G is the Gibbs potential and U the specific molar volume. Expressions ΔG and ΔU obtained by I. C. Fisher (J. Metals, 1949, 1, 688) and by G. H. Cockett and C. D. Davis (Acta meta. 1962, 10, 974) are

$$-0.874 \frac{\Delta G_{Fe}^{a-T}(T)}{T} + 20.459P \frac{\Delta V_{Fe}^{a-T}(T)}{T} = \lg \frac{1-x}{1-x} \quad \Delta V_{Fe}^{a-T}(T) = 0.268 - 1.62 \cdot 10^{-4} T \text{ cm}^3/\text{mol.}$$

where x is the concentration. These expressions together give the temperature as a function of the pressure. For the E'S'-line, for austenite \rightleftharpoons austenite + graphite, the expression

$$0.700 P - 0.0005 P^2 - \lg \frac{1-x}{1-x} = 0$$

$$+ 21.768 \frac{1}{T} + 0.0175 P = \lg \frac{1-x}{1-x}$$

Card 2/3

ACCESSION NR: AP4034056

From these expressions it was established that uniform pressure increased the solubility of graphite and strongly reduced the solubility of cementite in austenite. The eutectoid points of the Fe-C_{gr} and Fe-Fe₃C systems were shifted under the influence of pressure in the direction of higher temperature and lower carbon content. At high pressures, the Fe-Fe₃C system became stable while the Fe-C_{gr} system became metastable. The authors thank L. A. Shvartsman and I. A. Tomilin for the consultations and constant help with thermodynamic calculations, Z. M. Vlasova and K. A. Peresada for conducting the metallographic analysis, and A. N. Kryukov for collaborating in the experiments. Orig. art. has: 27 equations and 3 figures.

ASSOCIATION: Institut metallofiziki, TsNIICHM (Institute of Metal Physics, TsNIICHM)

SUBMITTED: 25Jul63

ENCL: 00

SUB CODE: MM

NO REF SOV: 005

OTHER: 011

Card 3/3

Physically, V. 6.

TITLE: Magnetic and magnetoelastic properties of a metamagnetic iron-rhodium alloy

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 6, 1964, 2003-2010

TOPIC TAGS: magnetostriction, alloy Young modulus, alloy lattice parameter, ferromagnetic transition temperature, Curie point, iron rhodium alloy, alloy magnetization, alloy

ABSTRACT: The temperature dependences of the magnetization, magnetostriction, Young modulus, and lattice constant of an iron-rhodium alloy of close to equiatomic ($\text{Fe}_{0.5}$, $\text{Rh}_{0.5}$) composition have been investigated in the 50—750K temperature range. The experiments were conducted on vacuum-melted Fe-Rh alloy annealed at 1100C for 5 hr and then furnace cooled or water quenched from 1100C. In a field up to 2000 oe, the annealed alloy was antiferromagnetic at room temperature, with the transition to the ferromagnetic state occurring in a

Card 1/3

ACCESSION NR: AP4042559

field of 1700 oe at 358K with heating and at 352K with cooling. The Curie point of the alloy, determined in a 9-oe field, was about 660K. The transition temperature T_k was found to decrease by about 12K, with the field increasing to 14,500 oe. Isothermal curves for the magnetization in fields up to 140 koe showed that below the critical temperature T_k , the magnetization increases sharply in certain critical fields H_k , i.e., the antiferromagnetic-to-ferromagnetic transition occurs under the action of the field. The critical field H_k , defined as the field magnitude at which the most rapid increase in magnetization occurs, decreases linearly with increasing temperature at a rate of 0.0012 oersted/K. The transition becomes broader gradually with the

point is reached. A series of similar experiments in the temperature range 300-600K. The longitudinal magnetization λ and the relative change

Cord 2/3

ACCESSION NR: AP4042559

of Young modulus $\Delta E/E$ are zero in the antiferromagnetic region but are at a maximum in the region of temperature transition. The maximum probably results from the superimposition of magnetoelastic effects, which are associated with the destruction of the antiferromagnetic structure under the action of the field, on the ordinary ΔE and magnetostriction effects which are caused by domain processes. The use of the data obtained for determining the applicability of the C. Kittel theory to ferromagnetism — antiferromagnetism transition in the Fe—Rh alloy produced inconclusive results — and further research on the alloy is recommended. Orig. art. has: 8 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: 18Jan64

ATD PRESS: 3068

ENCL: 00

SUB CODE: MM,SS

NO REF SOV: 006

OTHER: 009

Cord. 3/3

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001342210005-3

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001342210005-3"

L 45766-66 EWP(k)/EWT(m)/EWP(t)/ETI IJP(c) JD/HW/JG
ACC NR: AP6030656 SOURCE CODE: UR/0020/66/169/006/1318/1319

AUTHOR: Kutsar, A. R.; Ponyatovskiy, Ye. G. 33
B

ORG: Institute of Metal Science and Metal Physics, Central Scientific-Research Institute of Ferrous Metallurgy (Institut metallovedeniya i fiziki metallov Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii)

TITLE: The compressibility and the phase transition diagram of chromium 17

SOURCE: AN SSSR. Doklady, v. 169, no. 6, 1966, 1318-1319

TOPIC TAGS: chromium, phase transition, polycrystal, metal physical property, metal compressibility

ABSTRACT: The authors present the results of measurements of the compressibility of chromium, obtained by the tensometric method under hydrostatic pressure to 20 kbar (polycrystal specimen with granular size of 2-3mm). The hydrostatic pressure was maintained by means of a high-pressure device with a working channel 10 mm in diam, with gasoline as the pressure-transfer fluid, and measured by a manganin manometer with an accuracy of ± 100 bar. The temperature was measured by a chromel-alumel thermocouple with an accuracy of ± 10 .

Card 1/3

UDC: 536.764

L 45766-66

ACC NR: AP6030656

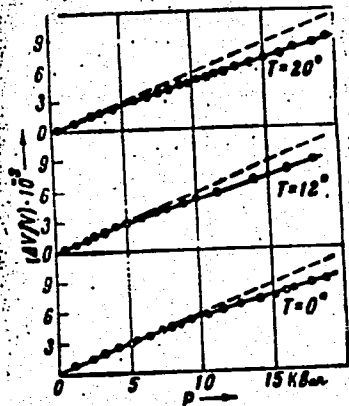


Figure 1. Chromium compression ratio $\Delta V/V$ as a function of pressure. The thin line depicts compression of iron.

Figure 1 shows chromium isothermic compression curves at 0°, 12, and 20°C, with a compression curve of pure iron included for comparison. A distinct anomaly is observed: a compressibility jump at the Neel point. The pressure lowers the Neel point from 38C at $P=0$ to 0°C at $P=8$ kbar. Also observed in the transformation region is a $1 \cdot 10^{-4}$ volumetric hysteresis, which may be explained by the internal stresses arising in the polycrystal in the phase transition. Antiferromagnetic phase compressibility is $-5.9 \cdot 10^{-7} \text{bar}^{-1}$, which is approximately equal to the compressibility of iron. The paramagnetic phase has a substantially lower compressibility, $-4.9 \cdot 10^{-7} \text{bar}^{-1}$. Figure 2 shows the P-T diagram of the antiferromagnetic chromium transformation, indicating an almost linear decrease in the Neel point with pressure and an inclination of the equilibrium line to the pressure axis of $-4.9 \cdot 10^{-3} \pm 0.2 \text{ deg. bar}^{-1}$ which is in good agreement with the $-5.1 \cdot 10^{-3}$

Card 2/3

Card 3/3

STETSIN, A.A.; PONYATSKIY, B.N.; BUNIN, A.Yu.

Photoelectrotonometer. Nov. med. tekhn. no.1152-53 '62.

(MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskikh instrumentov i oborudovaniya i Gosudarstvennyy nauchno-issledovatel'skiy institut glaznykh bolezney imeni Gell'mgol'tsa.

PONYAVIN, B.Ya.

Study of the phage titer growth reaction in laboratory practice.

Zhür mikrobiol. epid. i immun. 31 no.6:135-137 Je '60.

(MIRA 13:8)

1. Iz Bobryuskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.
(BACTERIOPHAGE) (DYSENTERY)

POHAYEV, N. G.

Use of the increased plaque titer reaction for study of the wave of
transmitting infection in dysentery. Zhurn. Bel. 7 no. 3, 1963, p. 161.
(MIA 1412)

1. Zavoduyushchiy sanitarno-bakteriologicheskoy laboratorii bolnyakoy
goranopidstantsii.
(DYSENTERY) (BACTERIOPHAGE)

PONYAVIN, Ivan Dmitriyevich; YEGOROV, N.I., otv. red.;
NEDOSHIVINA, T.G., red.

[Tsunamis (destructive waves)] Volny tsunami (razrushitel'-
nye volny). Leningrad, Gidrometeoizdat, 1965. 108 p.
(MIRA 18:4)

PONYAVIN, V.Ya.

Use of the phage titer growth reaction for studying the ways of infection transmission in dysentery. Zdrav.Bol. 8 no.7:59-61 J1 '62. (MIRA 15:11)

1. Zaveduyushchiy sanitarno-bakteriologicheskoy laboratoriyey Bobruyskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.
(WATER--MICROBIOLOGY) (SOILS--MICROBIOLOGY) (DYSENTERY)
(BACTERIOPHAGE)